

PROFILES OF STUDENT BEHAVIOR AND THE SSIS-CIP:
LATENT PROFILE AND TRANSITION ANALYSIS

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ABSTRACT

Early identification of emotional and behavioral disorders is critical in ensuring that students receive the interventions and supports necessary for school success. While externalizing and internalizing behaviors often occur comorbidly, more research is needed to understand how different subtypes of these behaviors may manifest, especially in the early elementary school years. Further, as schools increase their emphasis on universal, evidence-based interventions as tools for preventing the development of later social-emotional and behavior challenges, it is important to understand how different groups of students respond to such interventions.

In the present study, I explored the behavioral and emotional profiles of 470 second grade students using latent profile analysis. I also examined how students transitioned between profiles over the course of one school year (i.e., fall to spring) within the context of a social-emotional intervention (Social Skills Improvement System-Classwide Intervention Program, SSIS-CIP; Elliott & Gresham, 2007). Additionally, I used multinomial logistic regression analyses to examine if child race, gender, teacher-student relationship, and treatment condition (intervention vs. control) predicted profile membership and transition over the course of a school year. I used five behavioral composites from the Social Skills Improvement System Rating Scales-Teacher Form (SSIS-RST; Gresham & Elliott, 2008) to create the student profiles.

Three profiles of students emerged in the present study. The first profile (*normative*) was characterized by the lowest levels of all five externalizing and internalizing behaviors. The second profile (*at-risk*) demonstrated elevated levels of

impulsive behaviors, conduct problems, and emotion dysregulation, with less elevated levels of bullying. The third profile (*comorbid*) demonstrated elevated levels of all five externalizing and internalizing behaviors. From fall to spring, students in the *normative* profile exhibited a 93% probability of remaining in the *normative* profile. Students in the *at-risk* profile demonstrated a similarly high likelihood of remaining in the *at-risk* profile over time (72%), while students in the *comorbid* profile experienced a 57% chance of remaining in the *comorbid* profile over time. Teachers' observed emotional support, child race, child gender, and participation in the SSIS-CIP intervention were all predictors of profile movement, however, the associations varied across the different profiles.

Results of the present study suggest the SSIS-CIP may function as a preventative tool for students identified within the *normative* group as well as an effective intervention for those students with the most severe behavioral presentations. Consistent with previous research, teachers rated males and students of color higher on measures of externalizing behaviors. Notably, while female students were less likely to be identified in the *comorbid* profile in the fall, they were more likely to remain in that profile over time compared to male students who were identified in the *comorbid* profile in the fall. Surprisingly, teacher emotional support was negatively associated with movement from the *at-risk* group to the *normative* group. Future research should continue to explore the ways in which externalizing and internalizing behaviors manifest in young children as well as the intersection between gender and race as it relates to teachers' ratings of students' behaviors.

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CHAPTER 1: INTRODUCTION

Schools represent a critical resource for children in need of behavioral and mental health support. Currently, approximately 5% of all enrolled students receive special education services for an emotional disturbance classification under IDEIA (2004) (National Center for Education Statistics, 2020). Further, the Center for Disease Control (CDC; 2013) estimates that 13 to 20% of children and adolescents meet criteria for clinical diagnoses for mental health needs. Many children with externalizing behavioral challenges experience additional struggles due to internalizing behaviors associated with depression and anxiety, however, those needs may be overlooked due to difficulties in recognizing such symptoms in children, especially in schools (Collins et al., 2019; Papandrea & Winefield, 2011; Williams et al., 2007). With the rise of school accountability and the prevalence of multi-tiered systems of support (MTSS) practices, schools often address the emotional and behavioral needs of children by implementing universal social-emotional learning programs within classrooms (Albrecht, et al., 2015; Bradshaw et al., 2009; Durlak et al., 2011; Horner et al., 2014; Portnow et al., 2018; Webster-Stratton et al., 2008). Understanding the complex nature of how behavioral and emotional needs manifest in young children allows for more targeted and preventive responses within the school setting. As such, it is the focus of the present dissertation study.

Childhood Behavioral Problems: The Changing Role of Schools

From a historical perspective, the emphasis on mental health in schools first began when schools became fully compulsory in the 1930s, and the U.S. education system had to adapt to the vastly different needs of students they had not previously served (Flaherty & Osher, 2002; Hendrick & MacMillan, 1989). Early efforts to address mental health needs were focused on expanding the influence of therapists through mental health consultation (Caplan, 1970; Flaherty & Osher, 2002). This model was intended to serve an important educational function as school personnel could learn how to best approach the needs of children struggling with emotional and behavioral problems through consultation with a mental health expert. Mental health consultation was expanded in the 1980s through the use of more comprehensive “systems of care” and later solidified with the passing of the Comprehensive Mental Health Services for Children and Their Families Program of 1992. Since then, the system of consultation within schools has become more behaviorally-focused (e.g., Bergan & Kratochwill, 1990) with an emphasis on more class- and school-wide interventions to reach a greater number of students in need (Dwyer & Osher, 2000).

Currently, children whose emotional needs significantly impact their school performance receive support through the Individuals with Disabilities in Education Act (1975; 1997; 2004) under the classification of *emotional disturbance* (ED), a diagnostic term that was originally coined in the 1960s (Bower, 1969; 1990). Inherent in the definition of emotional disturbance is a focus on the impact of emotional, internalizing responses (e.g., sadness, nervousness) on school performance, with no direct examples of

externalizing behaviors present in the definition. IDEA specifies that children with emotional disturbance experience 1) a learning impairment that is not due to cognitive or learning disabilities, 2) severe challenges in formulating and maintaining relationships, 3) emotional and behavioral responses that exceed what is appropriate, 4) general sadness, and/or 5) excessive feelings of nervousness associated with school or personal difficulties.

Over the past few decades, the increased focus on addressing externalizing behavior problems in the school setting (e.g., aggression, defiance) has prompted discussions to change the term “emotional disturbance” to “emotional and behavioral disorders,” or EBD (e.g., Forness & Knitzer, 1992). However, because many externalizing behaviors were historically conceptualized as symptoms of conduct disorder and were often excluded under the “social maladjustment” clause (Forness & Knitzer, 1992), school leaders feared adding behavior to the ED definition would result in large increases in students identified for special education services (Forness & Kavale, 2000). As of 2011, nine states had added terms such as “behavior” or “behavioral” to their emotional disturbance definition (Wery & Cullinan, 2011), suggesting an explicit recognition that externalizing behaviors frequently accompany internalizing behaviors. More recently, the conversation has focused less on the differences between state and federal definitions and more on the consequences of implicit bias when operating under such a subjective classification system (e.g., Scardamalia et al., 2018).

While the federal definition and terminology used to identify children with mental health needs in schools has not changed, there have been significant changes in how

schools approach ED assessment, identification, intervention, and prevention efforts. Specifically, the reauthorization of IDEIA in 2004 allowed schools to allocate up to 15% of their federal funding toward early intervening services. This funding could be used to address not just academic needs, but also social-emotional needs as they impact school performance. As a result, a focus on positive behavior interventions and multi-tiered systems of support initiatives emerged as an avenue for delivering universal social-emotional learning programs to larger numbers of students through school-wide and class-wide interventions (e.g., Albrecht et al., 2015; Bradshaw, et al., 2009; Durlak et al., 2011; Horner et al., 2014; Portnow et al., 2018; Webster-Stratton et al., 2008). Importantly, the creation of school- and class-wide intervention models represented a shift from an exclusive focus on diagnosis and treatment to the acknowledgement of the essential role of school-based prevention efforts for children deemed “at-risk.”

Externalizing and Internalizing Behaviors in the School Setting

To date, efforts to reach children at-risk of developing EBD have focused primarily on addressing externalizing (e.g., aggression, bullying, hyperactivity, maladaptive peer relationships) and internalizing (e.g., withdrawal, sadness, anxiety) behaviors. Within the school setting, the direct effect of externalizing behaviors on school performance is typically two-fold: lost instructional time and poor peer relationships. Students who exhibit externalizing behaviors are more likely to disrupt classroom instruction due to challenges involving hyperactivity, impulsive behaviors, aggression, or defiance (Alter et al., 2013; Robers, et al., 2012). Further, this group is more likely to participate in asocial peer relationships (Fanti & Henrich, 2010). Beyond the educational

setting, externalizing behaviors in childhood represent an increased probability of delinquent behaviors in later adolescence and adulthood that lead to limited access to continuing education, fewer employment opportunities, decreased socioeconomic status, and a lower standard of living (Broidy et al., 2003; Caspi et al., 1987; Moffitt, et al., 2002). In light of the negative long-term outcomes associated with childhood behavior problems, early intervention and prevention efforts are critical in reducing both the short-term impact on academics as well as the later impact on access to higher education, employment, and interpersonal relationships (Cheney et al., 2008; Lewis, et al., 2010; Maag & Katsiyannis, 2008; Wagner, et al., 2005).

Internalization within the school setting represents a spectrum of behaviors that range from subclinical and common (e.g., social withdrawal, sadness, behavioral inhibition, nervousness) to clinical and impactful (e.g., social anxiety, depression, generalized anxiety). Such a distinction is important given that relatively common behaviors such as shyness and social withdrawal do not necessarily constitute pathology (Rubin et al., 2009), but are correlated with the later development of more severe internalizing problems (e.g., Biederman, et al., 2001; Eggum et al., 2012). Moreover, the subjectivity of what constitutes clinical levels of internalization as well as the inherently subdued presentation of these behaviors result in lower identification rates in schools when compared to externalizing behaviors (Collins et al., 2019; Papandrea & Winefield, 2011; Williams et al., 2007). The effects of internalization on school performance are mixed as some evidence suggests adverse effects on academic achievement and cognitive scores (e.g., Bub et al., 2007; Riglin et al., 2014), while others found no effects on school

performance (e.g., Nelson et al., 2004). However, children with internalizing problems tend to suffer significantly in areas of peer relationships (e.g., Oland & Shaw, 2005) which is in itself negatively correlated with school performance (Rapport et al., 2001; Serbin et al., 2011). Currently, there is widespread recognition of the need for an increased emphasis on universal screening and interventions in schools to address internalizing problems to the same degree that they address externalizing problems (Collins et al., 2019; Doll, 2019; McIntosh et al., 2014; Weist et al., 2018).

Internalizing and externalizing behaviors frequently occur simultaneously, or comorbidly, and represent unique challenges within the school setting (Basten et al., 2013; Willner et al., 2016). The social nature of schools means students who display oppositional, aggressive, or hyperactive behaviors may also experience peer rejection (e.g., Gooren et al., 2011; Ladd, 2006) and conflicted teacher relationships (e.g., Shiner & Caspi, 2003). In turn, such a cycle of negative feedback from others has been linked to increases in both internalizing (e.g., social withdrawal, irritability; Gooren et al., 2011; Ladd, 2006; Willner et al., 2016) and externalizing (e.g., worsening opposition and aggression; van Lier & Koot, 2010) behaviors. For this reason, it is especially important to examine ways in which these behaviors present in tandem and to explore the influence of universal interventions that foster social and emotion regulation skills to address the complex interaction between these types of behaviors.

Specifically, at the elementary school level, there remains a critical need for the early identification of children with emotional and behavioral needs (Conroy & Brown, 2004; Forness, et al., 2012). As early maladaptive behaviors may solidify and compound

over time (van Lier & Koot, 2010), the elementary school years provide an excellent preventative window for students who struggle to adjust to the social and academic demands of school. Students experience rapid growth in their ability to control their emotions until around the age of seven (Murray et al., 2019), so this developmental period serves as a pivotal time for targeted skill development. Further, the early relationships and prosocial modeling facilitated by elementary school teachers serve a protective function for students identified with a greater risk of school failure (Hamre & Pianta, 2005). One way to address this need for early social-emotional supports is to extend beyond the identification of students who meet clinical criteria for one or both of these dichotomized behavioral categories, and to also examine children with varying combinations and severity levels of at-risk behaviors (Beg et al., 2007; Hirsh-Pasek & Burchinal, 2006; Willner et al., 2016). Multi-tiered behavioral support practices are a promising tool in addressing this need as they shift the focus from students who already meet criteria for services to students who may be at-risk of developing clinical levels of internalizing and externalizing behaviors (Willner et al., 2016). Further, universal social-emotional learning interventions allow a larger number of students who do not meet the clinical criteria the opportunity to develop coping strategies and prosocial behaviors as a means of prevention (Durlak et al., 2011). In addition to a focus on at-risk behaviors, understanding what predicts subclinical and clinical levels of such behaviors (e.g., background characteristics, classroom relationships; Fanti & Henrich, 2010; Villodas et al., 2019) provides valuable information to better understand how such behaviors are identified and conceptualized across different groups. Specifically, it can lend additional

insight into teachers' identification practices for different groups of students, which is documented as an important area of investigation (e.g., Scardamalia et al., 2018). Finally, by identifying groups of students with different combinations of internalizing and externalizing behaviors, it is possible to examine how universal social-emotional learning programs differentially affect students' manifestation of those behaviors over time.

The Current Study

The purpose of the current study was to build upon the existing literature regarding internalizing and externalizing behaviors by using latent profile analysis to examine the profiles of students that emerge within a cohort of second grade students in two Mid-Atlantic school districts. This study also explored what student background characteristics, such as race and gender, predict profile membership. In addition to identifying these profiles, this study explored what effects a classroom-wide social-emotional intervention and observed teacher-student relationships had on profile transition over time. The current study will address the following research questions:

1. What behavioral profiles, based on teacher ratings of externalizing and internalizing behaviors, emerge in a sample of elementary-age students at fall and spring time points?
2. Do student background characteristics that have been linked to higher rates of identification of behavioral challenges (i.e., race, gender; Broidy, et al., 2003; Villodas et al., 2019) predict profile membership at fall and spring time points?
3. Do students transition across these behavioral profiles over the course of the year or does group membership remain relatively stable?

4. Do teacher-child interactions and SEL intervention condition predict profile membership and transition?

CHAPTER 2: LITERATURE REVIEW

Overview of Externalizing Behaviors

Externalizing behaviors in school-aged children are a variety of behaviors that are deemed disruptive to the learning or social environment and often represent a lack of behavioral inhibition (Greenbaum & Dedrick, 1998). Within the classroom setting, externalizing behaviors may manifest as a variety of maladaptive behaviors that can occur during both instructional and peer interactions. These behaviors adversely affect the educational and social outcomes for those who exhibit the behaviors as well as for their peers (Oliver et al., 2011). For example, inappropriate vocalizations, out-of-seat behaviors, and excessive fidgeting may prevent a child from accessing academic content through distraction and work refusal (DuPaul et al., 2018). Meanwhile, cheating, fighting, and stealing may contribute to tenuous peer relationships (Snyder et al., 2008) and in the most severe situations, absence from school due to suspension or expulsion (Gregory & Weinstein, 2008; Skiba et al., 2014; Skiba et al., 2011). Regardless of the manifestation of the behaviors, at the core of externalization is the disruptive impact it has on the surrounding environment (Papandrea & Winefield, 2011; Williams et al., 2007).

As researchers over time have sought to operationalize what it means to exhibit externalizing behaviors, it has remained critical to distinguish between developmentally appropriate behaviors and those considered maladaptive at consistently high levels of frequency, intensity, or duration. For example, higher levels of physical activity and fidgeting are common in young children (Purslow et al., 2009). When those behaviors

begin to impair a child's ability to engage in reciprocal play with peers or to benefit from early educational experiences such as reading, concerns emerge regarding how to address and intervene upon those behaviors (Fantuzzo et al., 2005). One method of determining the age appropriateness and clinical significance of such behaviors is rating scales. Rating scales that have been developed to measure externalizing behaviors often have composites that represent an overall numerical evaluation of a general set of behaviors. Within those composites are subscales to measure more specific groups of such behaviors. Among the most common rating scales is the Social Skills Improvement System (SSIS; Elliott & Gresham, 2007). The SSIS contains an overarching Problem/Challenging Behavior Composite that includes a separate externalizing subscale. Among the behaviors included in that subscale are bullying, fidgeting, coercing others, displaying temper tantrums, cheating, fighting, and talking back to adults. Other measures of externalizing behaviors in children include the Behavior Assessment System for Children, 3rd Edition (BASC-3; Reynolds & Kamphaus, 2015) and the Child Behavior Checklist (CBCL; Achenbach, 1991). The BASC offers similar composites of externalizing problem behaviors focused on behaviors reflecting hyperactivity (e.g., "poor self control"), aggression (e.g., "threatens to hurt others"), and conduct problems (e.g., "breaks the rules"). The CBCL utilizes similar language as the aforementioned rating scales, however, behaviors associated with conduct problems are conceptualized as "delinquent" (e.g., "steals," "vandalizes," "does not express guilt," etc.).

Predictors/Covariates of Externalization

To better understand how externalizing behaviors develop in children, it is important to examine background characteristics that may serve as potential risk factors for demonstrating such behaviors. Gender is a background characteristic that is commonly considered when examining patterns of externalizing behaviors in children. Research on the role of gender as a predictor of externalization has revealed some consistent patterns. Moreover, ratings of students' externalizing behaviors are correlated with other characteristics, such as the age of the student and the role of the adult rating the behavior. For example, males tend to be overrepresented in groups of children who demonstrate chronically high levels of externalizing behaviors (Broidy et al., 2003; Cheong & Raudenbush, 2000; Fanti & Henrich, 2010). However, these differences between male and female students may not emerge until later in childhood and into adolescence. Hill and colleagues (2006) found little difference between the externalizing profiles of preschool boys and girls. Instead, differences across gender appeared to be a function of emotion regulation where the inability to regulate one's emotions was more predictive of externalizing concerns for girls than for boys (Hill et al., 2006). As children develop, context also appears to play a role in gender differences. For example, Miner and Clark-Stewart (2008) found that this trend in identifying males as more prominent externalizers was more likely to occur within the school setting than the home setting. They found no difference in mothers' reports of externalizing behaviors across genders. This finding may be a function of differing demands across settings, where home settings allow for more variation and flexibility in behavioral expectations while the structure of

school requires compliant behaviors that female students may adapt to more quickly (Keenan & Shaw, 2003).

There has also been considerable research on the disproportionate rates at which children in marginalized racial and ethnic groups have been found to meet criteria under the emotional disturbance classification outlined in the Individuals with Disabilities in Education Improvement Act of 2004 due to identification of externalizing behaviors. For example, while minority students are more likely to be referred for special education services, this is especially true for Black and Latinx students (Cruz & Rodl, 2018; Hosp & Reschly, 2003; Villodas et al., 2019). Similarly, Wagner and colleagues (2005) highlight the frequency with which those referrals result specifically in a classification of emotional disturbance for Black males. These findings, however, may be at odds with how children of color and their mothers perceive their behaviors. For example, in an examination across raters, Linton (2015) explored how Black children were rated by their teachers, mothers, and themselves regarding externalizing and internalizing behaviors. Children who were found to exhibit significantly elevated levels of hyperactivity as rated by their teachers were often rated as less hyperactive by their mothers and themselves. Miner and Clarke-Stewart (2008) documented similar findings and posit that a complex interaction between racial bias, differing cultural norms, and different expectations between the home and school settings may contribute to this discrepancy. Parents of minority students have expressed concerns regarding reports of their children's behavior problems within schools (Brady et al., 2014). Specifically, issues surrounding

discrimination and a lack of support from school staff contribute to distrust and tensions that further complicate such disproportionate identification practices.

Overview of Internalizing Behaviors

While there is much focus on children's externalizing behaviors within the school setting, the more subtle nature of internalizing behaviors makes their identification difficult in the larger educational setting (Keiley et al., 2000). Internalizing behavior is understood as a latent disorder expressed through broader terms, such as anxiety or depression, that reflects an internal emotional or psychological state (Achenbach & Edelbrock, 1984; Krueger & Markon, 2006; Perle et al., 2013). In contrast to externalizing behaviors which are conceptualized through interactions with one's external environment, internalizing behaviors are inherently intrapersonal as they reside primarily within the individual (Achenbach & Edelbrock, 1984; Ashford et al., 2008; Mesman & Koot, 2000). Common internalizing behaviors involve those related to depression (e.g., social withdrawal, crying, expressions of loneliness, etc.) and anxiety (e.g., excessive worry, complaints of physical symptoms, irritability, etc.). Additionally, while children who exhibit externalizing behaviors struggle with demonstrating self-control (Vazsonyi & Huang, 2010), children with primarily internalizing behaviors present with very high levels of self-control (Eisenberg et al., 2000; Huey & Weisz, 1997). Several common rating scales have developed similar items to measure internalizing behaviors in children as they have with externalizing behaviors. Similar to the Problem/Challenging Behavior Composite, the SSIS (Gresham & Elliott, 2007) consists of an Internalizing subscale that includes behaviors associated with depression (e.g., "acts sad or depressed,"), anxiety

(e.g., “acts anxious with others,”) and low self-esteem (e.g., “says bad things about self”). The BASC-3 (Reynolds & Kamphaus, 2015) includes a similar internalizing scale examining areas such as depression (e.g., “cries easily”), anxiety (e.g., “worries about things that cannot be changed”), and somatization (e.g., “complains about health”). Because the symptoms are rarely disruptive in nature and may be mistaken for shyness or introversion (Campbell, 1990; Reynolds & Kamphaus, 2002), internalizing behaviors are identified with less frequency within the school setting (e.g., Keiley et al., 2000) and less accuracy across both home and school settings when compared to externalizing problems (Angold et al., 1987; Kashani et al., 1985; Splett, et al., 2019). It is possible that under-identification of internalizing behaviors may be a result of caregivers and teachers perceiving such behaviors as less serious and less concerning (Splett et al., 2019) or a lack of confidence in their ability to accurately identify students presenting with internalizing problems (Papandrea & Winefield, 2011; Rothi et al., 2008).

Predictors/Covariates of Internalization

In contrast to externalizing behaviors, which are disproportionately represented among males (Rutter et al., 2003), internalization is identified more frequently among females (Cullinan et al., 2003; Cullinan & Sabornie, 2004; Gresham et al., 1999; Kaess et al., 2011; Little & McLennan, 2010; Rollins, 2006; Rutter et al., 2003; Young et al., 2010). Factors such as biological processes (Hayward, 2003), social norms (Coplan & Armer, 2007; Zahn-Waxler et al., 2008), and environmental interactions (Zahn-Waxler et al., 2005) are all implicated in the differential development of internalizing problems across males and females. While there is some disagreement about the prevalence of

mood disorders in early childhood more generally (e.g., Sterba et al., 2007; Zahn-Waxler et al., 2005), female students tend to demonstrate a greater likelihood of childhood internalizing behaviors worsening and accumulating over time (Sterba et al., 2007).

Further, in contrast to the more robust literature-base on externalizing problem identification and race/ethnicity in elementary school children, research examining internalizing problems among different racial/ethnic groups is more limited and often centered around adolescents (Anderson & Mayes, 2010). Of the research that has explicitly examined these differences between racial/ethnic groups in the elementary grades, the findings are inconclusive. For example, one study found higher rates of self-endorsed depressive symptoms in Black boys when compared to White boys (Kistner et al., 2003). Linton (2015) found a discrepancy among raters (mother, teacher, child) of Black children's internalizing symptoms, with children endorsing the most elevated levels of internalizing behaviors. In a longitudinal study comparing Black and White children from ages 4 to 18, Kysar-Moon (2020) found that while there appeared to be no differences in depressive symptoms between Black and White children at age four, depressive symptoms decreased over time for Black children and increased over time for White children. Gage (2013) found similar trends with White and Hispanic children more likely to present with internalizing problems when compared to their Black peers as reported by their teachers. Research is far more limited for Asian students (Anderson & Mayes, 2010), however, findings suggest Asian students demonstrate disproportionately higher levels of internalizing symptoms (Villodas et al., 2019).

Comorbidity of Externalizing and Internalizing Behaviors

Comorbidity of externalizing and internalizing problems represents a challenge within the school setting as service providers must balance the management of overt classroom behaviors with students' mental health needs. School-wide interventions often aim to address externalizing behaviors as those behaviors more directly impact the instructional environment for all students (Oliver et al., 2011). The impacts of externalizing behaviors are not limited to academic deficits. Students who exhibit externalizing behaviors are more likely to experience peer rejection (Gooren et al., 2011; Ladd, 2006) and negative interactions with teachers (Shiner & Caspi, 2003). As a result, students who consistently receive negative feedback from peers and teachers develop internalizing behaviors such as social withdrawal and irritability (Gooren et al., 2001; Ladd, 2006; Willner et al., 2016). Importantly, emotion dysregulation is frequently reported as a symptom of both internalizing and externalizing problems in children and often manifests as increased excitability, irritability, and heightened emotional responses to stimuli (Vogel et al., 2021). Given that internalizing and externalizing behaviors do not typically develop in isolation (Basten et al., 2013), gaining a better understanding of how these behaviors manifest in tandem in children could provide valuable insights for mental health interventions that target both types of behaviors.

Trajectories of Internalizing and Externalizing Behaviors

Research on the trajectories of children with internalizing and externalizing behaviors has allowed researchers to identify how varying levels of those behaviors in early childhood progress over time. Specifically, key findings suggest externalizing and

internalizing behaviors evolve as children age and develop. In early childhood, externalizing behaviors may manifest as maladaptive social interactions during play activities, high reactivity when frustrated, or impaired attention (Calkins, 2002; Fantuzzo, et al., 2005; Hubbard, et al., 2002). The current research on behavioral trajectories indicates that some externalizing behaviors (e.g., aggression) decrease over time and evolve into a different set of behaviors (e.g., delinquency) when children reach early adolescence (Cheong & Raudenbush, 2000). Factors such as the child's background characteristics (e.g., gender, socio-economic status, age) and relationships with teachers appear to contribute to trajectories of externalizing behaviors (Miner & Clarke-Stewart, 2008; Reynolds et al., 2010; Silver et al., 2005). Silver and colleagues (2005), for example, studied the trajectories of externalizing behaviors of children from preschool to third grade within the classroom setting. The authors found that boys were more likely to engage in externalizing behaviors at a younger age, however, boys' and girls' externalizing behaviors increased at roughly the same rate over time. Further, those in the lower socioeconomic status group as well as those with more conflictual student-teacher relationships showed the most rapid increase in externalizing behaviors over time. In another study conducted by Thompson and colleagues (2011), the researchers explored the trajectories of groups of children to determine the stability of externalizing behaviors from ages 4 to 12. Out of five groups of children identified at varying initial levels of externalizing behaviors, most groups exhibited relatively stable patterns of externalizing behaviors over time. However, their findings indicate a need to identify, and intervene upon, children who fall into the "at-risk group" as those children did not engage in the

highest initial levels of externalization in the sample but demonstrated the most rapid increase in such behaviors over time. Other researchers have looked at the role of age as a predictor of the changes in externalizing behaviors. Miner and Clarke-Stewart (2008) recorded the behavioral trajectories of children from ages 2 to 9 and found significant decreases in externalizing behaviors from ages 2 to 7, with slower declines from ages 7 to 9, as reported by mothers. Declines in externalizing behaviors were notably less dramatic when reported by teachers (Miner & Clarke-Stewart, 2008). Cramer (2015) noted similar findings with regard to reporter trends for children ages 9 to 12, with significant decreases in externalizing behaviors when reported by mothers.

Internalizing behaviors may appear as early as infancy, however, the evolution of such behaviors looks quite different than that of externalizing behaviors as externalizing behaviors are more readily observed and quantified. As a result, researchers often utilize more subtle behavioral markers such as attachment styles, behavioral inhibition, shyness, and emotionality as potential precursors to later internalizing problems (Biederman, et al., 2001; Madigan et al., 2013). Despite these limitations, research on the development of internalizing behaviors over time is fairly consistent. For example, internalizing behaviors are believed to be relatively stable over time (Fanti & Henrich, 2010; Sterba et al., 2007). However, individuals who demonstrate high levels of internalizing behaviors relative to their peers may exhibit significant increases in those behaviors as they age (Fanti & Henrich, 2010). Similarly, findings by Gilliom and Shaw (2004) found that in children ages 2 to 6, mother-reported externalizing behaviors decreased over time while internalizing behaviors increased, especially in the presence of co-occurring externalizing

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behaviors. Reynolds and colleagues (2010) reported similar findings in elementary school students (kindergarten through fifth grade) where children's development of teacher-rated internalizing behaviors slowly increased over time and were inversely related to the development of their interpersonal skills. These findings are especially salient in females who demonstrated greater increases in these parent-reported behaviors over time compared to their male counterparts (Bongers et al., 2003).

Use of Latent Profile Analysis to Understand the Manifestation of Externalizing and Internalizing Behaviors

Latent profile analysis (LPA) allows for the examination of patterns of scores that may emerge within a sample (Collins & Lanza, 2010). It provides several advantages over other statistical techniques as it allows for more streamlined exploratory analyses of multiple scores at the individual level and assigns profile membership based on probability while taking into account measurement error (Collins & Lanza, 2010; Willner et al., 2016), as opposed to cluster analysis, which may assign individuals membership to an ill-fitted group (Edelbrock & Achenbach, 1980). Further, the use of LPA allows for researchers to differentiate between groups who may differ in the severity of their behavioral scores as well as to examine unique combinations of behavioral patterns that emerge without the constraints of a priori hypotheses (Willner et al., 2016).

Several researchers have examined the comorbidity and trajectories of internalizing and externalizing behaviors using person-centered analyses, such as latent profile and latent transition analyses. While the dichotomy of the two types of behaviors is often used in popular rating scales (e.g., Child Behavior Checklist - CBCL, Achenbach, 20

1991; Social Skills Improvement System - SSIS, Gresham & Elliott, 2008), there is a continuing need to better understand the complex ways that students may present these behaviors in combination within the educational setting. For example, students may present with a constellation of internalizing and externalizing behaviors including inattention, aggression, and indicators of depression (Beg et al., 2007; Willner et al., 2016). Latent profile analysis (LPA) has the potential to provide a more nuanced understanding of the comorbidity between externalizing and internalizing behaviors through the identification of subgroups of children with similar behavioral characteristics. LPA methods, specifically latent transition analysis, also facilitate the examination of children's behavioral trajectories through their transition between behavioral profiles over time and enable exploration of the ways in which background characteristics (e.g., gender, race) and school-based factors (e.g., teacher-child relationships, interventions) may relate to profile transition (Hirsh-Pasek & Burchinal, 2006; McWayne et al., 2004).

Several studies have used LPA to better understand externalizing and internalizing behaviors in children. Across these studies, the number of profiles identified most frequently ranges between four (e.g., Gage, 2013; Willner et al., 2016) and six profiles (e.g., Bulotsky-Shearer et al., 2012). The behavioral indicators used to create profiles varies across studies as some focus solely on variants of disruptive behavior (e.g., Beg et al., 2007), while others have examined a combination of externalizing and internalizing behaviors (Gage, 2013; Willner et al., 2016). Further, existing research has explored a range of ages including studies examining participants as young as two years old (Beg et al., 2007; Bulotsky-Shearer, et al., 2012) and others exploring a wider age

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range (e.g., childhood through adolescence; Gage, 2013). A more detailed description of the existing LPA research is provided in the next section.

Review of Previous LPA Research

Unique behavioral profiles have been identified in subgroups of children as early as preschool age. Bulotsky-Shearer and colleagues (2012) examined the behavior profiles of children who were part of a Head Start cohort in a large Northeastern city. The profiles were created using teacher ratings of preschool classroom behaviors such as peer interactions (e.g., appropriate play), teacher interactions (e.g., appropriate greetings), levels of aggression, inattention, and social withdrawal. The researchers also examined whether profiles were related to children's academic and social performance. Six profiles emerged with 53% of students falling within the normative group (i.e., students characterized as "well-adjusted"). Three more profiles distinguished between different levels of disengagement (i.e., internalization) and were conceptualized as "mild disengagement," "moderately socially and academically disengaged," and "extremely socially and academically disengaged." The students exhibiting any level of disengagement were believed to be at-risk for internalizing problems later in childhood as disengagement was characterized mainly by withdrawal behaviors and "social reticence." The two remaining groups were characterized by their disruptiveness (i.e., externalization). They were differentiated by one group demonstrating only disruption with their peers while the other group exhibited disruptive behaviors both with peers and within the larger academic setting. This study made the important distinction between students who disrupted the academic environment in comparison to those who only

struggled with peer relationships, but were otherwise academically successful, as evidenced by math and literacy scores mirroring those of the normative group.

In a more clinical population, Beg and colleagues (2007) explored the profiles of preschool children ages 2 to 5 years old who had been specifically referred for mental health support due to emotional and behavioral challenges. Beg and colleagues (2007) wanted to better understand the specific constellation of internalizing and externalizing behaviors for this at-risk sample and asked parents to provide ratings of their children using the Behavior Assessment System for Children -- Parent Rating Scale (BASC- PRS; Reynolds & Kamphaus, 1992). In contrast to the findings of Bulotsky and colleagues (2012), the researchers did not find any “pure” internalizing profiles (i.e., internalizing symptoms without comorbid externalizing symptoms), but found several variations of externalizing profiles. Five profiles, including a normative profile with subclinical results, did emerge. All four clinical profiles indicated elevations of externalizing problems with only the most severe profile signaling comorbid elevations in internalizing problems. The remaining three externalizing groups suggested unique variations of how externalizing behaviors may present. The first variant was a group of externalizers with mainly attention problems. The second externalizing group exhibited a combination of deviant behaviors (e.g., stealing, bullying, vandalism) and elevated attention problems. It is important to note this second group also had slightly elevated levels of depression as evidenced by high levels of social withdrawal but did not meet the clinical cutoff score. The last externalizing group was similar to the second group in their elevated hyperactivity, inattention, and atypicality (e.g., odd or unusual behaviors) with additional

difficulties with adaptability (e.g., the ability to cope with and adapt to changes to one's environment) and social skills (e.g., the ability to interact appropriately with others). The prominence of clinically significant externalizing behaviors across profiles may be a product of the sample used as the children were preschoolers selected based on referrals for mental health services, which are more often prompted by externalizing behaviors. Such findings, however, provide evidence of heterogeneity across groups identified within the same overarching construct of externalizing behaviors.

Similar to Beg and colleagues (2007), Gage (2013) utilized a clinical sample (i.e., students identified with emotional disturbance) to explore internalizing and externalizing profiles. This sample, however, ranged widely in age with students in grades 1 through 9 (61% of the sample was concentrated in grades 3-6). A teacher survey measure created by the researchers was used to assess teacher ratings of students' internalizing behaviors (e.g., appears lonely or depressed) and externalizing behaviors (e.g., argues or does not follow directions) in addition to self-reports by the students using the abbreviated Student Self-Concept Scale (SSCS; Gresham, Elliott, & Evans-Fernandez, 1992). The authors identified four different profiles. Similar to the Bulotsky et al. study (2007), pure internalizing and externalizing profiles (i.e., without comorbid symptoms) did emerge alongside a normative group of students who did not exhibit any notable internalizing or externalizing behaviors. The fourth profile consisted of a group labeled "other" as they demonstrated extreme but inconsistent levels of both internalizing and externalizing behaviors. Specifically, students who met criteria for the fourth profile did not exhibit internalizing or externalizing behaviors frequently enough to demonstrate group

membership to the pure externalizers or internalizers; however, they did sometimes demonstrate behaviors that were severe enough to distinguish them from the normative group. This study diverges from the previously mentioned research as it includes self-report measures which allow for comparisons of self-endorsed internalizing problems and teachers' recognition of such problems. Importantly, the researchers concluded that teachers were able to accurately identify students with internalizing problems given that their ratings were consistent with the students' own self-reported internalizing behaviors. This finding was particularly notable considering that internalizing problems are often underreported (Keiley et al., 2000).

In a recent study by Willner and colleagues (2016), the researchers examined the latent externalizing and internalizing profiles that emerged among kindergarten students in an urban, low-income setting. Sixty-one percent of their sample consisted of students who had exhibited elevated levels of aggressive behaviors compared to students exhibiting low to average levels of aggression. They utilized teacher ratings of student behavior within the classroom by combining several items from different measures of externalizing and internalizing behaviors to create a study-specific measure. Their findings represent trends similar to the aforementioned research where four profiles emerge consisting of pure internalizers, pure externalizers, a comorbid/mixed group, and a "well-adjusted" (normative) group.

A unique contribution of the study by Willner and colleagues (2016) was the use of latent transition analysis to examine profile movement over time (i.e., kindergarten to third grade). They found that those in the comorbid group (i.e., those with the highest

scores on measures of both internalizing and externalizing behaviors) demonstrated the highest likelihood of profile stability (89% chance of remaining in the sample profile over time) with internalizers exhibiting the second-highest levels of stability (80% chance of remaining in the sample profile over time). The externalizers had a 71% chance of remaining in that profile group over time. For those externalizers who did move across profiles, 25% transitioned to a comorbid profile by third grade which indicates an increase in internalizing problems over time in addition to the previously-identified externalizing problems. This study provides a valuable framework for understanding not only the profiles that may emerge in an elementary school setting, but also the stability and change in profiles over time.

Taken together, the findings from existing LPA research are mixed. Regardless of the sample used (i.e., clinical or nonclinical), there typically emerges a “normative” group with levels of internalizing and externalizing behaviors that are not elevated enough to establish membership to a clinically significant behavioral group. Instead, this group tends to represent the majority of students with developmentally appropriate behaviors. While the normative group is most often the largest group in non-clinical samples (e.g., Beg et al., 2007; Bulotsky et al., 2012; Gage, 2013), the use of clinically-referred samples may create a profile distribution wherein the normative group represents the smallest subset of the sample (e.g., Willner et al. , 2016). In two prominent studies, four profiles emerged (e.g, Gage, 2013; Willner et al., 2016), while more profiles emerged in studies that examined a wider range of behaviors (e.g., Bulotsky et al., 2012) and included more than one reporter of children’s behaviors (Beg et al., 2007). Overall,

when combined with latent transition analysis, the use of latent profile analysis provides valuable information regarding not only how internalizing and externalizing behaviors manifest in early childhood, but also how those behaviors change over time. Research that examines latent transition of internalizing and externalizing behavior profiles, however, is currently limited (Willner et al., 2016).

Overview of Social Emotional Learning Interventions

The relationship between students' social-emotional functioning and their academic performance is well documented (DiPerna & Elliott, 2002; McClelland et al., 2006; Miller et al., 2005). Students who are able to effectively adapt to and exhibit appropriate classroom behaviors (e.g., sustained attention, emotion regulation) demonstrate higher levels of academic engagement (DiPerna & Elliott, 2002; Miller et al., 2005) and increased academic achievement (McClelland et al., 2006). One approach to developing positive classroom behaviors and reducing both externalizing and internalizing behaviors is the use of social emotional learning (SEL) interventions. In a meta-analysis conducted by Durlak and colleagues (2011), research on school-based SEL programs consistently supported the link between increased prosocial skills and the subsequent reduction in both conduct problems (i.e., externalization) and emotional distress (i.e., internalization).

Schools may choose to implement manualized SEL intervention programs as part of their school-wide response-to-intervention framework as such programs promote consistency and uniformity across classrooms (Bond & Hauf, 2004). SEL programs demonstrate the most impact on student behavior when schools utilize a "S.A.F.E."

approach (i.e., sequenced, active, focused, and explicit; Bond & Hauf, 2004; Durlak, et al., 2011). For example, *Stop and Think* (Knoff, 2001), which utilizes a five-step decision-making process for interacting appropriately with others, demonstrated reductions in “negative social behaviors” (e.g., arguing and verbal aggression), emotional symptoms (e.g., depressed or nervous) as well as increases in positive peer interactions for students with emotional and behavioral disorders (McDaniel et al., 2017). Another widely-used SEL intervention is The Incredible Years Classroom Dinosaur Social Skills and Problem-Solving Curriculum (IYCD; Webster-Stratton & Reid, 2004) which is a class-wide intervention that simultaneously targets teachers’ positive classroom strategies as well as students’ emotion regulation in early elementary grades. Students exposed to the Incredible Years curriculum demonstrated greater levels of school readiness as well as significant decreases in conduct problems with even greater reductions for students with the highest initial levels of conduct problems (Webster-Stratton, Reid, & Stoolmiller, 2008). The Unique Minds School Program (UMSP; Stern, 1999) has also demonstrated positive effects on students’ perceptions of their own social-emotional skills, their ability to engage in prosocial problem solving, and decreased noncompliance and aggression, as measured by teacher ratings (Linares et al., 2005).

Another intervention that has demonstrated positive effects on students’ social skills is the Social Skills Improvement System-Classwide Intervention Program (SSIS-CIP; Elliott & Gresham, 2007). In a multisite cluster randomized trial (CRT) across 38 second grade classrooms, DiPerna and colleagues (2015) found that students who received the SSIS-CIP intervention demonstrated increases in classroom engagement as

well as social skills such as communicating and cooperating with others, taking responsibility, and showing empathy to others. These findings were most significant for classrooms where students, on average, demonstrated the lowest initial social skills scores compared to their peers. Additionally, those students who received the intervention demonstrated decreases in teacher-reported internalizing behaviors (DiPerna et al., 2015). In a follow-up CRT examining the effects of the SSIS-CIP on first grade students, DiPerna and colleagues (2018) found similar trends. Overall, universal SEL programs represent a promising avenue for providing large numbers of students with specific and targeted prosocial skills within the classroom setting.

Teachers play a critical role in not only administering SEL programs but fostering a classroom environment where prosocial behaviors are encouraged and nurtured. Specifically, the Center on Great Teachers and Leaders identified several empirically-supported teaching strategies that promote social-emotional learning such as student-centered classroom management, teacher warmth, and building students' competence through direct instruction and opportunities for practice (Yoder, 2014). For example, effective teachers utilize a student-centered approach to classroom management in which classroom norms are established collaboratively (Marzano et al., 2003). Further, students benefit academically from teachers who demonstrate warmth and high expectations for students (Sandilos et al., 2017). Finally, students experience success when they are able to learn concepts through direct instruction and then later practice those strategies with guided feedback (Bond & Hauf, 2004). Permeating these strategies, though, is the relationship teachers build with their students.

Teacher-Child Interactions

SEL programs appear to be most effective when they are conducted by teachers and other school personnel as compared to those conducted by community programs or university researchers (Durlak et al., 2011). The importance of teachers as implementers may be due, in part, to the fact that successful SEL programs tend to emphasize the role of the student-teacher interaction as a necessary component of the intervention itself (e.g., Brock & Curby, 2014). This emphasis on the teacher-child interaction emerges from existing research highlighting teachers as critical social figures who can impact students' behavioral outcomes. For example, early conflictual interactions between students and teachers during the elementary school grades are predictive of later externalizing behaviors in students (Crockett et al., 2018; Hamre & Pianta, 2001; Pianta & Stuhlman, 2004; Silver et al., 2005). Shiner and Caspi (2003) describe this interaction as bidirectional where maladaptive behaviors from children elicit negative responses from adults which, in turn, perpetuate a cycle of negative social interactions. Similarly, students with internalizing problems who concurrently experience conflictual interactions with teachers tend to demonstrate poorer school adjustment (e.g., lower participation and lower levels of attention within the classroom; Baker et al., 2008). In contrast, positive teacher-student interactions have been shown to contribute to a reduction in students' externalizing behaviors (Silver et al., 2005). Thus, when implemented with empirically-supported teaching strategies and a strong foundation of rapport between teachers and students, SEL programs are a promising approach to reducing externalizing and

internalizing behaviors and supporting the interpersonal and self-regulation skills necessary for students to be successful within the school setting.

The Present Study

The present dissertation study used a large secondary data set to extend existing literature on externalizing and internalizing behavior by examining behavioral profiles in a sample of early elementary school students who participated in a large cluster-randomized SEL intervention study. The study built on the previously-reviewed LPA research in several ways. First, the sample was non-clinical in nature, thereby increasing the opportunity for generalizability within the school setting. Second, I examined a narrower age group (2nd graders), which allowed for a more focused interpretation of the results and mitigated the number of potential confounding factors (e.g., changes in classroom teachers, social development, cognitive development) present when comparing student profiles across a wide range of developmental levels (e.g., Gage, 2013). Additionally, research on this particular developmental age provided insights in early intervention and prevention research. Further, the use of latent profile analysis allowed for an exploratory approach to determine if multiple distinct profiles emerged with varying combinations of behavioral markers. Finally, in addition to conducting latent profile analysis, the present dissertation project used latent transition analysis to determine if background characteristics (gender, race) and school-based factors (SEL intervention implementation, observed teacher-student relationship) predicted profile transition over the course of one school year. Taken together, this information provides a robust examination of the multi-faceted nature of children's internalizing and

externalizing behaviors within the context of a multisite intervention study. The following research questions were addressed:

1. What behavioral profiles, based on teacher ratings of externalizing and internalizing behaviors, emerge in a sample of elementary-age students at fall and spring time points?
2. Do student background characteristics that have been linked to higher rates of identification of behavioral challenges (i.e., race, gender; Broidy, et al., 2003; Villodas et al., 2019) predict profile membership at fall and spring time points?
3. Do children transition across these behavioral profiles over the course of the year or does group membership remain relatively stable?
4. Do teacher-child interactions and SEL intervention condition predict profile membership and transition?

Based on prior LPA literature, I hypothesized that at least four profiles would emerge, including a normative group, a group characterized primarily by elevated externalizing behaviors, a group characterized primarily by elevated internalizing behaviors, and a comorbid group consisting of a combination of elevated internalizing and externalizing behaviors (e.g., Willner et al., 2016). Additionally, I hypothesized that race and gender would be related to profiles, such that males would represent a larger portion of group membership in the externalizing and comorbid groups (e.g., Fanti & Henrich, 2010), while females would exhibit a greater likelihood of internalizing group membership (e.g., Cullinan et al., 2003). Further, previous research suggests Black and Latinx children have an increased likelihood of externalizing and comorbid group membership when rated by

their teachers (e.g., Linton, 2015), while White and Asian students are more likely to be rated in the normative and internalizing groups (Villodas et al., 2019). I hypothesized similar findings within the present study. With regard to transition analyses, I hypothesized profiles would be relatively stable overtime, with comorbid and internalizing profiles showing the most stability compared to the externalizing and normative groups (Willner et al., 2016). Finally, I hypothesized positive teacher-child interactions and participation in the SEL intervention condition would be related to stability in the normative group or transition from an at-risk group to the normative (or lower risk) group (Durlak et al., 2011).

CHAPTER 3: METHODS

The data for this study were drawn from a multi-year, multisite cluster randomized trial (CRT) to determine the efficacy of the SSIS-CIP in elementary classrooms (see DiPerna, et al., 2018).

Participants

A total of 39 second grade classrooms from six elementary schools in the Mid-Atlantic region of the U.S. participated in the study. Approximately half of the classrooms were from two rural elementary schools, and the remaining classrooms were from four urban elementary schools. The participating classrooms consisted of 20 to 25 students with all students being invited to participate in the study. Approximately 52% of the students invited were given parental consent to participate in the study. The student sample (N = 470) utilized in this study is representative of the student population across all six schools.

The student sample was comprised of second-grade students. Of the students who participated, approximately half were female (56%). English was the primary language for the majority of students (90%), and most student were not classified for special education services (84%). Several racial identities were represented including White (66%), Black (16%), Hispanic (4%), Asian (2%), and students who identified as multiracial (1%). Complete descriptive data of the student sample can be found in Table 1.

The majority of teachers identified as White (87%) and female (75%). Teachers on average had 15.5 years of teaching experience (Min = 3 years, Max = 36 years). Half of teachers held a regular education certification (52%) while 6% held dual certification in regular and special education. Complete descriptive data for the teacher sample can be found in Table 2.

Measures

Externalizing Behaviors, Internalizing Behaviors, and Social Skills

Students' externalizing and internalizing behaviors were measured using the Social Skills Improvement System Rating Scales--Teacher Form (SSIS-RST; Gresham & Elliott, 2008). The SSIS-RST includes a total of 70 items within two major composites: Social Skills and Problem Behaviors. The Social Skills Scale (46 items) is composed of seven subscales: communication, cooperation, assertion, responsibility, empathy, engagement, and self-control. The Problem Behaviors Scale is typically composed of five subscales: externalizing, bullying, hyperactivity/inattention, internalizing, and autistic behavior. For the purpose of this study, subscales that were most closely linked to the manifestation of externalizing and internalizing behaviors were included in the profile analyses: self-control, externalizing, bullying, hyperactivity/inattention, and internalizing. Teachers responded to items on the SSIS using a 4-point Likert scale where 1 = Never, 2 = Seldom, 3 = Often, and 4 = Almost always, however, these responses were recoded where 0 = Never, 1 = Seldom, 2 = Often, and 3 = Always to assist with interpretability. The SSIS-RST is psychometrically strong with reliability coefficients on subscales ranging from .87 to .98 (see: DiPerna, et al., 2015). Additionally, the SSIS-TRS has

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demonstrated good construct validity with medium to large correlations with scores related to behaviors associated with academic competence (e.g., motivation and engagement) and low correlations with measures of reading and math performance (Anthony & DiPerna, 2019). A full list of the items by composite and subscale can be found in Table 3.

Teacher-Child Interaction

The teacher-child interaction was measured using the Classroom Assessment Scoring System: Kindergarten--Third Grade (CLASS K-3; Pianta, La Paro, & Hamre, 2008). The CLASS K-3 is composed of three domains intended to measure the classroom instructional environment through structured observation: emotional support, classroom organization, and instructional support. The emotional support domain includes items that measure positive climate, negative climate, teacher sensitivity, and regard for student perspective while the classroom organization domain includes items that measure behavior management, productivity, and instructional learning formats. Instructional support includes items that measure concept development, quality of feedback, and language modeling. Notably, because CLASS ratings provide a snapshot of teachers' behaviors with all children in the classroom, it is typically regarded as a teacher-level characteristic.

The CLASS K-3 is considered reliable and valid for its intended use with internal consistency scores ranging from .81 to .93 (DiPerna, et al., 2015) and validation research confirming the three-domain structure (Pianta et al., 2008; Sandilos et al., 2017). In the present study, observers completed an observation where they spent 20 minutes on direct

observation and 10 minutes completing the rating form. To obtain valid scores, a minimum of two observation cycles were recommended. Every classroom in the current study was observed according to the recommendations (2 cycles). Observers completed reliability training with > 80% accuracy with a CLASS-certified instructor.

Procedure

All second-grade teachers in both districts were invited to participate in the current study. Letters were sent home to all parents/guardians to obtain consent for participation followed by reminder letters approximately four days later. About 52% of students were given parental consent to participate. Classrooms were assigned randomly to the intervention (SSIS-CIP implementation) or control condition (business as usual). The child-level data were collected using the same procedures for the intervention and control classrooms. Specifically, all participating teachers completed the SSIS-RST for all children in their classrooms. Child-level data for the fall (baseline) was collected in November-December and then again in March-April (post-intervention). Classroom observations using the CLASS were also conducted during the fall and spring data collection windows.

SSIS-CIP Intervention

Classrooms in the intervention condition implemented the SSIS-CIP curriculum. Implementation of this curriculum is intended to increase prosocial behaviors while minimizing behaviors that disrupt or negatively impact the learning environment (Gresham & Elliott, 2008). The curriculum includes 10 instructional units to teach 10 widely-accepted classroom social behaviors: listening to others; following directions;

following classroom rules; ignoring peer distractions; asking for help; taking turns in conversations; cooperating with others; controlling temper during conflicts; acting responsibly with others; and showing kindness to others. For each unit, teachers led three scripted lessons using six instructional strategies (describe, model, role-play, do, practice, monitor progress, and generalize) in order to facilitate student learning. Students were also shown short 30- to 90-second video vignettes. Students completed practice exercises and activities in an instructional booklet as they related to the instructional strategies. Each lesson took between 20 to 25 minutes to complete.

Teachers assigned to the intervention condition completed formal training in implementing the SSIS-CIP curriculum. This training included a structured, one-day workshop where, for the first half of the day, teachers were introduced to the curricular materials. For the second half of the workshop, teachers practiced teaching the lessons from the first unit in small groups. During the practice teaching sessions, the facilitator provided feedback centered around the fidelity of the delivery. Teachers were also able to ask questions regarding implementation throughout the workshop. Teachers were then expected to teach one SSIS-CIP unit (i.e., three lessons) per week. While restrictions such as school closings, holidays, and field trips prevented some teachers from completing their lessons each week, all teachers were able to teach all 10 units (30 lessons) within a 12-week period.

Analytic approach

Descriptive analyses and confirmatory factor analyses to examine the structure of the SSIS-RST composites were conducted in R. Latent profile analysis, latent transition

analysis, and multinomial logistic regression were conducted in *MPlus*, version 8.5 (Muthén & Muthén, 2020).

Of the 478 students, eight students were missing data for the key constructs utilized in the profile selection. All eight students were in the intervention condition. Because the missing cases represented less than 2% of the overall sample, listwise deletion was used as recommended by Young and colleagues (2011).

Confirmatory Factor Analysis: SSIS-RST Items

The SSIS-RST measures externalizing behaviors through separate subscales (i.e., hyperactivity/inattention, bullying, & externalizing composite). The externalizing composite includes a total of 12 items. Of those 12 items, 4 are also included in the hyperactivity/inattention subscale and 3 are included in the bullying subscale. To avoid redundancy of items across several subscales, the externalizing, hyperactivity/inattention, and bullying subscales were divided as three independent subscales that all represent distinct forms of externalizing behaviors. The items that loaded on both the hyperactivity/inattention and externalizing subscales were included only in the hyperactivity/inattention subscale. The items that loaded on both the bullying and externalizing subscales were included only in the bullying subscale. To ensure the externalizing subscale remained valid with the remaining 5 items, a confirmatory factor analysis (CFA) was conducted.

CFA was estimated using “diagonally-weighted least squares” (DWLS) estimator in *R*. Root mean squared error of approximation (RMSEA) was used to evaluate the overall model fit. RMSEA values less than .05 indicate good fit, values between .05 and

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.08 indicate adequate fit, values between .08 and .10 indicate mediocre fit, and values greater than .10 are not acceptable (Browne & Cudeck, 1993). The model comparison fit indices examined in this study were the comparative fit index (CFI), the Tucker-Lewis index (TLI), Akaike Information Criterion (AIC), and the Bayesian information criterion (BIC). CFI and TLI values greater than or equal to .90 are indicate acceptable model fit (Bentler & Bonett, 1980; Hu & Bentler, 1999) while values greater than .95 indicate good model fit (Schermelel-Engel et al., 2003). Finally, reliability was calculated using the composite reliability formula outlined by Fornell and Larcker (1981) as well as Bacon and colleagues (1995).

Latent Profile and Transition Analyses

Latent profile analysis (LPA) is an exploratory analysis that involves testing an increasing number of profiles using a set of selection criteria until there is no interpretable difference between the resulting profiles (Collins & Lanza, 2009). Latent profile analysis was conducted in *Mplus*, version 8.5 (Muthén & Muthén, 2020) To determine the best number of latent profiles to retain at each time point, solutions were estimated with an increasing number of profiles (i.e., 1-7 profiles). Model fit criteria was evaluated the Akaike information criterion (AIC; Akaike, 1987), Bayesian information criterion (BIC; Schwartz, 1978), and sample-size adjusted BIC (aBIC). Lower values of the AIC, BIC, and aBIC indicate better model fit. Additionally, the Lo-Mendell-Rubin (LMR) likelihood ratio was examined to determine if model fit improvement is statistically significant as the number of profiles increase. Entropy was assessed with values closer to 1.00 indicating that profiles are adequately and meaningfully distinct

from each other (Nylund et al., 2007). In addition to the model fit indices, models were examined for adequate profile size (i.e., >10 students in each profile) and interpretability (Nylund et al., 2007). Finally, due to the large sample size, visual examination of “elbow plots” of the AIC, BIC, and aBIC values was conducted to support profile selection (Petras & Masyn, 2010).

Profiles were created using a combination of composites measuring internalizing and externalizing behaviors. Specifically, the self-control, externalizing, bullying, hyperactivity/inattention and internalizing subscales from the SSIS-RST were included to create the profiles at baseline and spring time points. The self-control composite was reverse-coded with lower scores indicating greater levels of self-control. To increase interpretability in the present study, the self-control composite was renamed “emotion dysregulation” given the reverse coding and the content of the items. All analyses were estimated in *Mplus* with cluster identifiers (i.e., Type = Complex) used to adjust standard errors due to children being nested within classrooms. Demographic variables controlled for in the LPA were as follows: disability status (1= has IEP, 0=No IEP), and native language status (dummy coded as English [1,0] reference group, Spanish [1,0], Other language [1,0]).

After profiles were established at both time points, latent transition analysis was conducted to determine which students transitioned from one profile in fall to a different profile in spring. Similar to Willner and colleagues (2016), latent transition models were conceptualized as the probability of moving between profiles from Time 1 (fall, baseline) to Time 2 (spring, post-intervention). Descriptive statistics from the LTA include the

proportion of students whose profile membership remained stable over time, the proportion of students who transitioned between profiles, and the likelihood of transition between each profile from Time 1 to Time 2.

Multinomial Logistic Regressions

Multinomial logistic regressions were estimated with six primary predictors of profile transition: intervention condition, three teacher-child relationship variables (i.e., emotional support, classroom organization, and instructional support domains), child race, and child gender. To conduct this analysis, separate nominal variables were created for every possible profile transition group. Participants were divided into separate subsamples based on fall profile membership. For each subsample, a multinomial “spring transition” variable served as the outcome with the stability group (i.e., children remaining in the given profile from fall to spring) used as the reference group. For each regression model, intervention condition, teacher-child relationship domains, gender, and race were included as predictors of the multinomial “spring transition” outcome. Notably, race was dichotomized due to low representation across different racial groups and recoded (1=Student of color, 0 = White).

CHAPTER 4: RESULTS

Complete descriptive statistics for the SSIS-RST construct composites are reported in Table 4. Correlations among the SSIS-RST externalizing and internalizing variables utilized for profile membership ranged from -0.39 to 0.94 in the fall and from -0.44 to 0.94 in the spring. A complete table of correlations between the SSIS-RST construct composites are reported for the fall in Table 5.

Complete descriptive statistics for the CLASS domains for the fall and spring are presented in Table 6. Correlations among the CLASS domains ranged from 0.38 to 0.54 in the fall and 0.48 to 0.66 in the spring and are reported fully in Table 7.

Confirmatory Factor Analysis

A confirmatory factor analysis was conducted in *R* to examine the factor structure of the SSIS-RST. The modified externalizing composite was estimated without the items that were dually-loaded on the hyperactivity/inattention and Bullying composites. Given the content of the items in this modified composite, it was renamed conduct problems. The fall conduct problems composite demonstrated good fit with CFI and TLI values of 1.000 and 1.007, respectively. RMSEA decreased to 0.000, indicating improved model fit. The composite reliability was strong (0.88). For the spring time point, the Conduct Problems composite demonstrated both good CFI (1.000) and TLI (1.014) values in addition to RMSEA of 0.000. Composite reliability increased to 0.90.

The remaining construct composites (i.e., self-control,, hyperactivity/inattention, bullying, and internalizing) were estimated with the items outlined by the original

publisher and demonstrated good fit across all indices with CFI values ranging from 0.992 to 1.000, TLI values ranging from 0.991 to 1.026, and RMSEA values ranging from 0.000 to 0.049. Reliability across composites ranged from 0.87 to 0.95. A full summary of the CFA model fit indices for the SSIS-RST composites utilized for the latent profile and transition analyses can be found in Table 8. As noted previously, after CFA was used to test the validity of the self-control composite, it was reverse coded and re-named emotion dysregulation for the latent profile analysis.

Latent Profile Analysis

For the fall time point, the three-profile solution demonstrated the best fit with decreasing values across the AIC, BIC, and aBIC. Fit statistics for each profile solution can be found in Table 9. The Lo-Mendell-Rubin likelihood ratio was statistically significant ($p < 0.05$). Entropy was adequate with a value of 0.937. Visual examination of the “elbow plots” further supported the three-profile solution with a significant decrease in AIC, BIC, and aBIC values from the two- to three-profile solution and a notable plateau of these values at the four-profile solution. Figure 1 demonstrates the elbow plots for profile solutions 1 through 7 across AIC, BIC, and aBIC. Each profile demonstrated adequate size (profile 1 $n=312$, 66% of sample; profile 2 $n=116$, 25% of sample; profile 3 $n=42$, 9% of sample). Figure 2 provides the plotted profiles to demonstrate interpretability. Children in profile 1 demonstrated the lowest levels of emotion dysregulation, conduct problems, bullying, hyperactivity/inattention, and internalizing problems (0.36 to 0.58 SD below the mean) when compared to the other profiles. Children in profile 2 demonstrated rates of emotion dysregulation, conduct problems,

bullying, hyperactivity/inattention, and internalizing problems that fell above the sample mean (0.24 to 0.69 SD above the mean), with bullying being the least-elevated behavior in this group. Children in profile 3 demonstrated the highest rates of emotion dysregulation, conduct problems, bullying, hyperactivity/inattention, and internalizing problems (1.44 to 2.40 SD above the mean). Table 10 outlines the statistics for the demographic characteristics of each profile.

At the spring time point, the three-profile solution was again supported by visual examination of the AIC, BIC, aBIC elbow plots (Figure 3) as well as structural examination of the profiles (Figure 4). The Lo-Mendell-Rubin likelihood ratio was statistically significant ($p < .05$) and entropy was adequate with a value of 0.939. The three-profile solution appeared largely consistent across the two time points with slight elevations in the third profile at spring as compared to the fall time point. Given the consistency in structure across time, the three profiles were the labelled the following for both the fall and spring time points: profile 1 = normative; profile 2 = at-risk; profile 3 = comorbid. Fit statistics for each profile solution can be found in Table 11. Table 12 outlines the statistics for the demographic characteristics of each profile.

Latent Transition Analysis

Latent transition analyses (LTA) were conducted to examine profile stability and change from fall to spring. As with the latent profile analyses, the five SSIS-RST construct composites measuring externalizing and internalizing behaviors were used in the latent transition analyses, and the three-profile solution was utilized at both time points. All measurement parameters were set to be invariant across time (Muthén &

Asparouhov, 2011), and the LTA was specified with cluster identifiers (i.e., Type = Complex) to account for classroom membership. The profiles were regressed on the following covariates: gender, race, native language status, and disability status.

The number of children who either remained in the same profile or transitioned between time points can be found in Table 13. Profiles were notably stable as 85% of children (n = 399) remained in the same profile between fall and spring. When examined as transitional probabilities (Table 14), students in profile 1 (*normative* profile) demonstrated the most stability with a 93% probability of remaining in profile 1. Students in profile 2 (*at-risk* profile) also demonstrated high stability in profile membership with a 72% probability of remaining in profile 2. Students in profile 3 (*comorbid* profile) demonstrated the least stability in profile membership with a 58% probability of remaining in profile 3. Of the 15% of children (n= 71) who transitioned between profiles, there was variability in profile movement with the lowest probability (1%) of moving from the normative profile to the comorbid profile and from the comorbid profile to the normative profile. Those in the *at-risk* profile in the fall demonstrated an 18% probability of moving to the *normative* profile in the spring. Those in the *comorbid* profile in the fall were almost equally as likely to move to the *at-risk* profile (42% probability) as they were to stay.

Multinomial Logistic Regression

Multinomial logistic regression analyses were conducted to determine if intervention condition, child demographic characteristics (i.e., race and gender), and the teacher-student relationship were associated with stability and change in profile

membership. A nominal variable was created in each data set where students were then assigned membership to one of three groups based on profile movement from the fall to the spring. *Mplus* utilizes the last group as the default group, thus those who stayed in their profile from fall to spring were the reference group for each analysis. Those in the *normative* profile at fall were assigned either 1 (moved to the *at-risk* profile), 2 (moved to the *comorbid* profile), or 3 (stayed in the *normative* profile). Those in the *at-risk* profile at fall were assigned either 1 (moved to the *normative* profile), 2 (moved to the *comorbid* profile), or 3 (stayed in the *at-risk* profile). Because no students moved from the *comorbid* profile to the *normative* profile, that profile was treated as binary as group 1 represented those who moved from *comorbid* to *at-risk* and 2 represented those who remained in the *comorbid* profile across time points.

The spring transition variable was then regressed on the child demographic covariates (gender and race), treatment condition, and the three teacher-child relationship variables measured by the CLASS (emotional support, classroom organization, and instructional support). The regression coefficient (β) was used to aid in the interpretation of the results as well as the associated odds ratio, which represents the likelihood of transition category membership (i.e., OR > 1.00 = increased odds; OR < 1.00 decreased odds).

Predictors of Profile Movement

For those who started in the *normative* profile in the fall (Table 15), intervention condition, student gender, teacher emotional support, and teacher instructional support were all predictors of movement to another profile. When compared to the those who

remained in the *normative* profile, those who moved to the *at-risk* profile were less likely to have received the SSIS-CIP intervention ($\beta = -2.394$, $p < .05$, $OR = 0.091$). Those who moved from the *normative* profile to the *comorbid* profile were more likely to be female ($\beta = -12.328$, $p < .01$, $OR = 0.000$), experienced lower levels of emotional support within the classroom ($\beta = -6.375$, $p < .05$, $OR = 0.002$), and experienced greater levels of instructional support ($\beta = 4.218$, $p < .05$, $OR = 67.884$) when compared to those who remained in the *normative* profile. While participation in the intervention condition was also positively associated with the likelihood of moving from the *normative* profile to the *comorbid* profile, an odds ratio value could not be computed due to the low sample size ($n = 2$) and both individuals being enrolled in the intervention condition; thus, this finding could not be interpreted.

For those students who started in the *at-risk* profile (Table 16), emotional support and student gender were both predictors of movement from the fall to the spring time point. When compared to those who remained in the *at-risk* profile, those who moved into the *normative* profile ($n = 20$) were less likely to experience high levels of emotional support within the classroom ($\beta = -0.881$, $p < .05$, $OR = 0.414$). Further, when compared to those who remained in the *at-risk* profile, those who moved into the *comorbid* profile ($n = 13$) were less likely to be male ($\beta = -1.712$, $p < .05$, $OR = 0.181$).

The *comorbid* group represented the smallest group in both the fall ($n = 42$) and the spring ($n = 39$) and represented the most elevated levels of internalizing and externalizing behaviors. No students moved from the *comorbid* profile to the *normative* profile from the fall to the spring. When compared to those who remained in the

comorbid profile, those who moved into the *at-risk profile* in the spring were more likely to have received the intervention ($\beta = 2.771, p < .05, OR = 15.972$) and less likely to identify as a student of color ($\beta = -3.262, p < .05, OR = 0.038$).

CHAPTER 5: DISCUSSION

Overview of Dissertation Study

This dissertation study examined the impact of a social skills intervention on second grade students' internalizing and externalizing behaviors over the course of a year. A person-centered approach using latent profile analyses was utilized to examine the intrapersonal patterns of behaviors such as hyperactivity and inattention, conduct problems, emotion dysregulation, bullying, and internalizing symptoms (e.g., social withdrawal and expressions of sadness and loneliness). Consistent with prior research, student-level characteristics such as child gender (e.g., Fanti & Henrich, 2010; Sterba et al., 2007; Young et al., 2010) and race (e.g., Hosp & Reschly, 2003; Villodas et al., 2019) were included to predict profile membership, stability, and change over time. Additionally, observed teacher-child interactions, specifically emotional support, classroom management, and instructional supports, were also used to predict profile membership over time as the teacher-child relationship has been shown to impact both child expression, and teacher perception of, internalizing and externalizing behaviors (e.g., Silver, et al., 2005).

Profile Composition

Based on previous work by Willner and colleagues (2016), I initially hypothesized that a four-profile solution would emerge with profiles characterized by one group primarily exhibiting externalizing behaviors, another group exhibiting primarily internalizing behaviors, a group demonstrating a comorbid internalizing and externalizing presentation, and a normative group with no significant elevations in either externalizing

or internalizing behaviors. Results of latent profile analyses in the present study, however, demonstrated a three-profile solution in both the fall and spring time points. Profiles followed a normative, slightly elevated (i.e., *at-risk*), and significantly elevated (*comorbid*) presentation of internalizing and externalizing behaviors with no purely internalizing or externalizing profiles emerging from the analyses.

In contrast to Willner and colleagues (2016), the present analyses did not yield two separate profiles with exclusively externalizing or internalizing behaviors. The lack of prominent teacher-reported internalizing symptomology may be a function of several factors. First, internalizing problems are inherently less disruptive within the classroom environment compared to externalizing behaviors and can be difficult to identify in younger populations as younger children may not have the language to identify and express their internal states (Cunningham & Suldo, 2014; Keiley et al., 2000; Neil & Smith, 2017; Splett et al., 2019; Tandon et al., 2009). Additionally, previous studies have posited that younger children tend to display more anxiety-related behaviors (Loeber & Keenan, 1994; Oland & Shaw, 2005), while behaviors and symptoms of depression emerge later during early adolescence (Hankin & Abramson, 2001; Kovacs & Devlin, 1998; Oland & Shaw, 2005). The present study utilized a measure of internalizing behaviors that combined teacher reports of anxiety-related behaviors (e.g., “acts anxious with others,” “gets embarrassed easily,” etc.) with those also associated with depression (e.g., “withdraws from others,” “has low energy or is lethargic,” “acts sad or depressed,” etc.). As a result, overall teacher evaluations of internalizing behaviors may reflect a lack of sensitivity in differentiating and identifying those students who display anxious

behaviors compared to those who appear withdrawn and depressed. Further, compared to other studies that have utilized primarily clinical samples (see: Beg et al., 2007; Gage, 2013; Willner et al., 2016), the present sample was comprised primarily of students not presently identified with an emotional or behavioral disorder, thus the *normative* profile in the present study represented the largest portion of the sample in both the fall and spring (66%) and may also have contributed to the lack of emergence of a distinctly internalizing profile.

Although the profiles generally represented high, medium, and low levels of externalizing and internalizing behaviors, there was a notable difference in the role of bullying across profiles. Specifically, students in the *at-risk* profile demonstrated more elevated levels of inattention/hyperactivity, emotional dysregulation, and conduct problems, but relatively similar levels of bullying as the *normative* group. Comparatively, the *comorbid* group demonstrated greater elevations across all behaviors, including bullying. This finding aligns with prior research suggesting that while impulsive behaviors may be correlated with nonviolent conduct-related behaviors (such as arguing or disobeying rules), they are not necessarily highly correlated with more severe aggressive behaviors such as bullying. Aligned with this difference between the *at-risk* and *comorbid* groups, previous studies have noted a distinction between children whose behaviors are primarily inattentive and impulsive compared to those children whose impulsive behaviors co-occur with more significant conduct-related problems (Beg et al., 2007; Broidy et al., 2003). For example, in a clinical sample of preschool children, Beg and colleagues (2007) reported a five-profile solution which included three distinct

externalizing profiles. Of their externalizing profiles, they reported one profile with students with elevated hyperactivity, inattention, atypicality, and lower levels of social skills and adaptability. These behaviors were uniquely separate from other conduct-related behaviors which included bullying. Similarly, in a longitudinal study conducted by Broidy and colleagues (2007), researchers were able to demonstrate distinct behavioral trajectories for those who demonstrated early aggressive behaviors compared to those children who did not display aggression at a young age. Their results indicated the most significant predictor of later adolescent aggression was early childhood aggression. Further, their findings challenged previous findings that hyperactivity itself was a significant predictor of later adolescent delinquency, and more specifically, aggression (e.g., Campbell et al., 1996). Because the current study measured hyperactivity/inattention, conduct problems (e.g., lying, defiance, etc.), and bullying separately, this differentiation in early aggressive behavior from other externalizing symptoms emerged through the lower levels of bullying in the *at-risk* group. From a practical standpoint, these findings indicate that children who exhibit co-occurring inattentive/impulsive and aggressive behaviors are likely most in need of more intensive social-emotional intervention.

Student Demographics and Profile Membership

Based on prior literature, I hypothesized that the *at-risk* and *comorbid* profiles would be disproportionately comprised of male students compared to the *normative* group (Broidy, et al., 2003; Cheong & Raudenbush, 2000; Fanti & Henrich, 2010). Findings were consistent with this hypothesis in both the fall and spring time points. In the fall,

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males made up only 37% of the students in the *normative* profile compared to 56% in the *at-risk* profile and 67% in the *comorbid* profile. Findings in the spring time, however, indicated a slight female-majority in the *comorbid* group. This may be due to the increased likelihood that female students experience internalizing symptoms at a greater rate than their male peers (Cullinan et al., 2003; Cullinan & Sabornie, 2004; Gresham et al., 1999; Kaess et al., 2011; Little & McLennan, 2010; Rollins, 2006; Rutter et al., 2003; Young et al., 2010). Further, internalizing behaviors may intensify over time (Bongers, et al., 2003; Cramer, 2015), especially if internalizing behaviors are accompanied by concomitant externalizing behaviors (Gooren et al., 2011). For example, Gooren and colleagues (2011) found that maladaptive externalizing behaviors were shown to lead to greater levels of peer rejection, which in turn contributed to the development of subsequent depressive symptoms. As girls are more likely to demonstrate heightened stress responses to peer rejection than their male counterparts (Stroud et al., 2017), these interactions may have been especially pronounced for girls with comorbid internalizing and externalizing behaviors. Additionally, because externalizing behaviors tend to occur less frequently in girls (Broidy, et al., 2003; Cheong & Raudenbush, 2000; Fanti & Henrich, 2010), those girls who do demonstrate those behaviors may stand out more to teachers, which in turn, may be reflected in teachers' elevated ratings of their behaviors.

In addition to gender, I also explored the racial composition of profiles. While the racial composition of the students in the *normative* profile largely reflected percentages similar to the racial composition of the overall sample at the fall time point, students of color were disproportionately represented in the *at-risk* (40%) and *comorbid* (40%)

profiles compared to the sample mean of 25%. Similar proportions were observed in the spring as well. These results are consistent with a growing body of research that has identified patterns of disproportionate referrals of minority students for special education services (Hosp & Reschly, 2003), especially under the classification of emotional disturbance (Sullivan & Bal, 2013; Villodas, et al., 2019), as well as disproportionate rates of discipline and out-of-school suspensions for students of color (Skiba et al., 2014).

Additionally, the role of racial match between student and teacher is frequently correlated with teachers' ratings of students' behaviors and overall adjustment to the school setting as early as preschool (Bates & Glick, 2013; Downer et al., 2016). Given that the majority of the teachers in the present study were identified as White, such findings are important to consider through a critical lens that examines the role of implicit bias, cultural norms, and other related factors such as the role of socioeconomic status and school-family relationships (Brady et al., 2014; Linton, 2015; Miner & Clark-Stewart, 2008).

Profile Membership Stability and Transition

Profile membership was remarkably stable from the fall to the spring with those in the *normative* profile most likely to remain in that profile. This finding contrasts with Willner and colleagues (2016) who found high profile stability among children with high levels of externalizing and internalizing behaviors and more variability in movement among the well-adjusted children in a clinical sample. However, the present findings do align with studies of other non-clinical samples of young children that have identified the highest level of stability in profiles of students who were average to high-performing

across behavioral and academic indicators (e.g., McWayne et al., 2012; Sandilos et al., 2019). In the present study, students in the *comorbid* profile demonstrated the greatest likelihood of transition, specifically to the *at-risk* profile. Such findings might represent students' gradual adjustment to the classroom expectations and norms over the course of the year. Further, as teachers establish relationships with their students over time, they may develop more effective strategies tailored to individual student needs that mitigate the persistence of maladaptive behaviors. Maturation over time may also impact the expression of externalizing behaviors as these behaviors tend to decrease with age (Gilliom & Shaw, 2004; Keiley et al., 2000; Miner & Clark-Stewart, 2008).

Predictors of Profile Transition

Predictors of profile transition were examined to determine what student and classroom characteristic influenced movement from fall to spring. Predictors of movement included membership in the intervention condition, student gender, student ethnicity, and teacher-student interactions within the classroom as measured by the CLASS (e.g., emotional support, classroom organization, and instructional support). Universal interventions that serve to prevent the development of maladaptive behaviors utilize models of prosocial peer interactions that include opportunities to practice social skills with peers and to receive teacher and peer feedback to reinforce those positive interactions (Durlak et al., 2011). Students in the present study who began in the *normative* profile overwhelmingly remained in that profile, which is a positive outcome. Further, those who moved into the *at-risk* profile were less likely to have participated in the SSIS-CIP intervention than those who stayed in the *normative* profile over the course

of the year. This suggests the intervention had at least some preventative effects for students who demonstrated low rates of externalizing and internalizing problems at the beginning of the year.

In addition, students with the highest levels of externalizing and internalizing behaviors (i.e., those in the fall *comorbid* profile) were significantly more likely to move to the *at-risk* profile in the spring if they participated in the SSIS-CIP intervention, indicating a potential reduction in their externalizing and internalizing behaviors over the course of the year. Previous research has also demonstrated the largest effects of social skills interventions for students who demonstrated the greatest levels of externalizing behaviors. For example, Webster-Stratton and colleagues (2008) found students with the highest initial levels of conduct problems who participated in the Incredible Years program experienced the greatest reductions in externalizing behaviors compared to other students with fewer externalizing problems. Webster-Stratton and colleagues (2008) suggested one possible reason for this finding might actually reside at the teacher-level and may reflect improvements in teacher-student interactions and teacher self-efficacy as a result of the intervention. Notably, participation in the SSIS-CIP intervention was not predictive of movement from the *at-risk* profile to the *normative* profile. This finding suggests the potential need for a more targeted or longer-term intervention for those who are at-risk in order to prevent the development of more severe behaviors over time.

The interaction between the teacher and student was hypothesized to have an impact on student profile membership and change over time. Specifically, it was posited that those students who experienced greater levels of teacher emotional support within

the classroom setting would benefit the most and either stay in the *normative* profile or move to a lower-risk profile. A more complex picture emerged within the present study with regard to teacher-student interactions. As expected, teacher emotional support was a significant, though modest, predictor for those who started in the *normative* profile and later transitioned into the *comorbid* profile, with lower levels of observed teacher emotional support associated with a greater likelihood of movement into the *comorbid* profile. This finding is consistent with a growing body of research that has examined the role of conflictual student-teacher relationships in the later development of externalizing behaviors (Crockett et al., 2018; Hamre & Pianta, 2001; Pianta & Stuhlman, 2004; Silver et al., 2005). However, given the small number of students who moved from the *normative* to the *comorbid* profile ($n = 2$), such conclusions should be interpreted with extreme caution as further research is still warranted.

Somewhat surprisingly, lower levels of teacher emotional support were predictive of movement from the *at-risk* profile into the *normative* profile. It is possible that those students identified within the *at-risk* profile whose externalizing and internalizing behaviors decreased over time may have had needs that were more academic than relational in nature. For example, Sandilos and colleagues (2017) examined the relationship between teachers' warmth and demand on student academic outcomes and found that while both characteristics were necessary for student growth, demand was particularly important. In essence, warmth without demand was not enough to produce impacts on student performance. In the present study, however, other teacher-level characteristics such as classroom management and instructional support also were not

predictive of student movement between profiles. Other studies have examined student-level factors, such as students' self-efficacy, that have been found to mediate the role of teacher emotional support on outcomes such as academic performance (Kikas & Mägi, 2017). Such findings indicate that more research is needed to examine the ways in which teacher-student interactions influence students who demonstrate at-risk behaviors compared to those with more severe behavioral presentations.

Finally, the role of race was also examined as a predictor of profile transition over time. Those who transitioned from the *comorbid* profile to the *at-risk* profile were less likely to be students of color. These findings are consistent with previous studies that have demonstrated teachers are more likely to rate minority students, especially Black and Latinx students, higher on measures of externalizing behaviors and recommend minority students for behavior-related special education services (Wagner et al., 2005). As Black and Latinx students are also more likely to be disproportionately disciplined when compared to their White peers (Skiba et al., 2014), the present findings suggest a continued need to examine the role of implicit bias with regards to teachers' ratings of student behaviors.

While the intersectionality of group membership was not examined in this particular study, it is important to consider how the combined roles of gender and race might influence teacher ratings of students' behaviors over time. Female students are frequently rated better on measures of social and behavioral skills, especially in early childhood (DiPrete & Jennings, 2012). However, a growing body of research has examined the disadvantage Black female students experience due to potential teacher

implicit bias (e.g., Annamma et al., 2019; Francis, 2012). For example, Annamma and colleagues (2019) found differential enforcement of discipline policies for Black girls compared to White girls. Specifically, differences emerged in the harshness of the punishment (i.e., Black girls received harsher punishments), and the subjectiveness of the referring behaviors; Black girls were more likely to be punished for subjective behaviors such as “defiance” or disrespect compared to their White counterparts who were more likely to be punished for more objective behaviors such as drug possession. Morris (2005, 2007) posits that adults may perceive Black girls as older and less feminine, which contributes to disproportionate rates of discipline compared to their White counterparts. As being male and White were both predictors of movement from the *comorbid* group to the *at-risk* group, future research should examine the intersection of gender and race as it relates to teachers’ perceptions of student behaviors.

Limitations and Future Directions

The present study has several limitations that indicate a need for future examination. First, while it was beneficial to measure changes in student profile membership within the same classroom over time, students were rated by the same teacher during both time points. As previous literature has demonstrated, incorporating multiple raters allows for more robust and nuanced interpretations of student behavior (e.g., Linton, 2015). For example, the findings reported by Willner and colleagues (2016) incorporated multiple teachers’ ratings of student behaviors over time as they utilized a longitudinal model that spanned three academic years. Further, utilizing parent report and, when appropriate, student self-report may provide greater insight into contextual

differences such as school and home expectations and the role of student insight (Linton, 2015). Additionally, the use of the CLASS K-3 to measure teacher-student interactions limited the interpretability of the results as the CLASS K-3 was a teacher-level measure that did not assess teachers' interactions with individual students.

Second, the present study did not identify a purely internalizing profile of students within the sample. This may be a function of generally low rates of internalizing behaviors in younger children (Sterba et al., 2007; Zahn-Waxler et al., 2005) or low teacher confidence in identifying such behaviors (e.g., Papandrea & Winefield, 2011; Rothi et al., 2008). However, measurement challenges may have also contributed to this finding. Specifically, the SSIS-RST combines several behavioral markers associated both with anxiety and depression into one internalizing scale. The lack of distinction between these behaviors, which present differently within this age group (Tandon et al., 2009), may have resulted in the contribution to a comorbid profile rather than two distinct profiles of comorbid and pure internalizing behaviors. For example, behaviors associated with anxiety may present as more externalizing in younger children (e.g., emotion dysregulation and outbursts) compared to behaviors associated with depression (e.g., withdrawal) (Tandon et al., 2009). Further, symptoms of depression are generally more difficult to detect in younger children (Tandon et al., 2009). Such limitations may also be addressed by including other subscales of the SSIS-RST such as communication, cooperation, and assertion to capture more nuanced information regarding peer interactions, responses to redirection, and the ease with which children can advocate for their needs.

A third limitation relates to the lack of diversity in the student and teacher samples. In order to complete the multinomial logistic regression to examine the relationship between student race and profile movement, student race was collapsed into a dichotomous variable (i.e., students of color and White students) as the respective sample sizes of minority students were too small. This greatly limits the ability to draw conclusions as numerous studies have examined the cultural differences in the manifestation and identification of externalizing and internalizing behaviors (e.g., Anderson & Mayes, 2010; Gage, 2013). Additionally, the teacher sample in the present study was predominantly White (87%), which may have further contributed to perceptions of behaviors, particularly for students of color (Wymer et al., 2022). Such limitations could be overcome in the future by use of oversampling for students and teachers in traditionally underrepresented groups to contribute to more representative results. It is important to note that the present study also had a 53% student consent rate across classrooms. Unmeasured differences in factors such as socioeconomic status, native language status, and cultural beliefs about schooling across parents who provided consent compared to those who did not may have impacted the constellation of results.

Finally, while the special education identification status was included as a demographic variable for students, it was not utilized as a predictor for profile membership or movement over time. This was due, in part, to the relatively small percentage of students (8%) who were classified within the sample. Further, distinctions between educational classifications (e.g., Emotional Disturbance, Specific Learning Disability, Autism, etc.) were not specified within the data. As other literature has

highlighted the impact of teacher perceptions of different disability classifications (e.g., Hastings & Oakford, 2003; Kauffman & Badar, 2013; Sharma et al., 2006), examining the relationship between special education membership and profile membership and transition would provide more nuanced information to inform targeted interventions.

Practical Implications and Conclusions

As schools continue to implement multi-tiered systems of support (MTSS) to respond to students' academic and behavioral needs, universal social skills interventions remain a valuable and cost-effective tool demonstrated to have positive effects on student behaviors. The Social Skills Improvement System-Classwide Intervention Program (SSIS-CIP; Elliott & Gresham, 2007) is among a growing repertoire of social-emotional learning programs that has demonstrated efficacy in preventing the development of at-risk behaviors in elementary-aged children (DiPerna et al., 2015; DiPerna et al., 2018). Given that the delivery is driven by teachers within classrooms, it provides opportunities for teachers to develop skills in teaching prosocial behaviors while providing children with clear behavioral models and opportunities to practice. The present study demonstrated a particular benefit of the SSIS-CIP for students with the most significant behaviors, and it also highlighted areas for future research with regard to the responsiveness of the intervention for at-risk children. Further, the present study highlighted the importance of examining the complex relationship between impulsive behaviors and conduct-related behaviors. Specifically, it is important to disaggregate conduct problems that violate general classroom community norms from those that violate the safety of others (e.g., bullying and interpersonal aggression).

Future studies may benefit from examining the effects of the SSIS-CIP when additional targeted interventions are added to supplement the universal intervention (such as Check, Connect, Expect; Cheney, 2004). Further, more targeted examination of student-level characteristics that predict intervention responsiveness (such as the “responders versus non-responders” model outlined by Gresham, 2005) may provide valuable insights into predictors of intervention responsiveness. In addition, continued use of person-centered analyses to examine student behavior has the potential to facilitate a more nuanced understanding of the ways in which different internalizing (such as depression and anxiety) and externalizing behaviors (such as impulsivity and bullying) manifest in young children. Such findings in the context of SEL programming have the potential to provide additional insights regarding the ways in which interventions may be differentially effective for students within different behavioral profiles.

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TABLES

Table 1: Student Demographics

<i>Student Demographics</i>						
Variable	Intervention n= 249	%	Control n= 221	%	Total N= 470	%
<i>Race</i>						
White	148	59	160	72	308	66
Black	47	19	28	13	75	16
Asian	4	2	4	2	8	2
Hispanic	15	6	5	2	20	4
Multiracial	3	1	4	2	7	1
Other	7	3	1	0.5	8	2
Missing	25	10	19	9	44	9
<i>Gender (%)</i>						
Female	137	55	124	56	261	56
Male	112	45	97	44	209	44
<i>Primary Language (%)</i>						
English	220	88	20	1	421	90
Spanish	2	0.8	1	0.5	3	0.6
Other	5	2	3	1	8	2
Missing	22	9	16	7	38	8
<i>Special Education Status</i>						
Classified	25	10	13	6	38	8
Not Classified	202	81	192	87	394	84
Missing	22	9	16	7	38	8

Table 2: Teacher Demographics

<i>Teacher Demographics</i>			
Variable	Treatment N= 20	Control N= 19	Total N= 39
Race (%)			
White	17 (85)	17 (89)	34 (87)
Missing	3 (15)	2 (11)	5 (13)
Gender (%)			
Female	12 (60)	14 (74)	26 (67)
Male	5 (25)	3 (16)	8 (21)
Missing	3 (15)	2 (11)	5 (13)
Teacher Experience			
Average # years taught (min-max std dv)_	15.12	15.18	15.15
Min-max	4 – 29	3 – 36	3 – 36
Std	7.56	9.82	8.76
Median	13	14	13.5
Teacher Certification			
Regular Education Only	9 (45)	11 (58)	20 (51)
Dual Cert: Regular and Special Education	3 (15)	1 (5)	4 (10)
Dual Cert: Regular and Reading Specialist	3 (15)	3 (16)	6 (15)
Dual Cert: Regular and Other	1 (5)	2 (11)	3 (8)
Other Only	1 (5)	0 (0)	1 (3)
Missing	3 (15)	2 (11)	5 (13)

Table 3: Social Skills Improvement System Rating Scales – Teacher Form (SSIS-TRS)

Social Skills Improvement System Rating Scales – Teacher Form (SSIS-TRS)

Social Skills Composite	
Communication	Q8_4: Says, “Please”
Communication	Q8_10: Responds well when others start a conversation or activity.
Communication	Q1_4: Speaks in appropriate tone of voice
Communication	Q1_10: Takes turns in conversations
Communication	Q9_4: Says, “Thank you”
Communication	Q9_10: Makes eye contact when talking
Communication	Q20_10: Uses gestures or body appropriately with others
Communication	Q20_10: Uses gestures or body appropriately with others
Cooperation	Q8_2: Follows your directions
Cooperation	Q8_7: Completes tasks without bothering others
Cooperation	Q1_2: Participates appropriately in class
Cooperation	Q1_7: Pays attention to your instructions
Cooperation	Q9_7: Ignores classmates when they are distracting
Cooperation	Q20_7: Follows classroom rules
Assertion	Q8_1: Asks for help from adults
Assertion	Q8_5: Questions rules that may be unfair
Assertion	Q1_1: Stands up for herself/himself when treated unfairly
Assertion	Q1_5: Says when there is a problem
Assertion	Q9_5: Expresses feelings when wronged

Assertion	Q20_5: Stands up for others who are treated unfairly
Assertion	Q41_5: Says nice things about herself/himself without bragging
Responsibility	Q8_6: Is well-behaved when unsupervised
Responsibility	Q1_6: Takes responsibility for her/his own actions
Responsibility	Q9_2: Acts responsibly when with others
Responsibility	Q9_6: Takes care when using other people's things
Responsibility	Q20_2: Respects the property of others
Responsibility	Q41_2: Takes responsibility for part of a group activity
Empathy	Q8_3: Tries to comfort others
Empathy	Q8_8: Forgives others
Empathy	Q1_3: Feels bad when others are sad
Empathy	Q1_8: Shows kindness to others when they are upset
Empathy	Q9_8: Is nice to others when they are feeling bad
Empathy	Q20_8: Shows concern for others
Engagement	Q8_9: Makes friends easily
Engagement	Q1_9: Interacts well with other children
Engagement	Q9_3: Joins activities that have already started
Engagement	Q9_9: Invites others to join in activities
Engagement	Q20_3: Participates in games or group activities
Engagement	Q20_9: Starts conversations with peers
Engagement	Q41_3: Introduces herself/himself to others
Self-Control	Q9_1: Stays calm when teased*

Self-Control	Q20_1: Takes criticism without getting upset*
Self-Control	Q20_4: Uses appropriate language when upset*
Self-Control	Q20_6: Resolves disagreements with you calmly*
Self-Control	Q41_1: Responds appropriately when pushed or hit*
Self-Control	Q41_4: Makes a compromise during a conflict*
Self-Control	Q41_6: Stays calm when disagreeing with others*

Challenging Behaviors Composite

Externalizing	Q11_1: Cheats in games or activities*
Externalizing	Q11_4: Fights with others*
Externalizing	Q11_6: Disobeys rules or requests*
Externalizing	Q11_9: Talks back to adults*
Externalizing	Q11_11: Lies or does not tell the truth*
Externalizing- Hyperactivity/Inattention	Q22_1: Acts without thinking*
Externalizing- Hyperactivity/Inattention	Q22_3: Has difficult waiting for turn*
Externalizing Hyperactivity/Inattention	Q22_5: Fidgets or moves around too much*
Externalizing- Hyperactivity/Inattention	Q22_8: Has temper tantrums*
Hyperactivity/Inattention	Q22_10: Breaks into or stops group activities*
Hyperactivity/Inattention	Q11_3: Is inattentive*
Hyperactivity/Inattention	Q11_8: Gets distracted easily*
Externalizing-Bullying	Q22_2: Bullies others*
Externalizing-Bullying	Q22_6: Forces others to act against their will*
Externalizing-Bullying	Q22_11: Is aggressive toward people or objects*

Bullying	Q22_4: Does things to make others feel scared*
Bullying	Q22_9: Keeps others out of social circles*
Internalizing	Q22_7: Withdraws from others*
Internalizing	Q22_12: Gets embarrassed easily*
Internalizing	Q11_2: Acts lonely*
Internalizing	Q11_5: Says bad things about self*
Internalizing	Q11_7: Has low energy or is lethargic*
Internalizing	Q11_10: Acts sad or depressed*
Internalizing	Q11_12: Acts anxious with others*

SSIS: 1=Never; 2=Seldom; 3=Often; 4=Almost Always

*Items included to determine profile membership

Table 4: SSIS-TRS Composite Descriptive Data

<i>SSIS-TRS Composite Descriptive Data</i>						
Composite (N = 470)	Mean	Sd	Min	Max	Skew	Kurtosis
<i>Fall</i>						
Emotion Dysregulation	0.81	0.63	0.00	3.00	0.84	0.67
Externalizing	0.40	0.48	0.00	2.25	0.63	-0.01
Conduct Problems	0.37	0.51	0.00	2.40	1.60	2.00
Hyperactivity/Inattention	0.64	0.59	0.00	2.43	0.96	0.29
Bullying	0.21	0.42	0.00	2.60	2.79	9.10
Internalizing	0.40	0.47	0.00	2.14	1.39	1.27
<i>Spring</i>						
Emotion Dysregulation	0.72	0.63	0.00	3.00	0.82	0.34
Externalizing	0.41	0.50	0.00	3.00	1.64	2.84
Conduct Problems	0.39	0.54	0.00	3.00	1.75	3.26
Hyperactivity/Inattention	0.60	0.60	0.00	3.00	1.03	0.57
Bullying	0.23	0.43	0.00	3.00	2.61	7.72
Internalizing	0.39	0.49	0.00	3.00	1.57	2.44

Table 5: SSIS-RST Composite Correlations

SSIS-RST Composite Correlations

	Emotional Dysregulation	Conduct Problems	Hyperactivity/ Inattention	Bullying	Internalizing
<i>Fall (Time 1)</i>					
Emotional Dysregulation	1				
Conduct Problems	-0.58	1			
Hyperactivity/Inattention	-0.60	0.94	1		
Bullying	-0.41	0.92	0.79	1	
Internalizing	-0.39	0.78	0.74	0.74	1
<i>Spring (Time 2)</i>					
Emotional Dysregulation	1				
Conduct Problems	-0.58	1			
Hyperactivity/Inattention	-0.58	0.94	1		
Bullying	-0.45	0.93	0.81	1	
Internalizing	-0.44	0.84	0.79	0.81	1

Table 6: CLASS Fall and Spring Descriptive Data

<i>CLASS Fall and Spring Descriptive Data</i>						
Composite	Mean	Std Dev	Min	Max	Skew	Kurtosis
<i>Fall (n=38)</i>						
Emotional Support	5.05	0.94	2.75	6.50	-0.69	-0.54
Classroom Organization	4.89	1.04	2.67	6.67	-0.24	-0.95
Instructional Support	2.98	1.12	1.33	5.33	0.33	-1.30
<i>Spring (n=21)</i>						
Emotional Support	4.79	0.92	2.62	6.25	-0.54	0.31
Classroom Organization	4.87	0.86	3.00	6.67	0.08	-0.08
Instructional Support	2.44	0.87	1.17	4.33	0.49	-0.64

Table 7: CLASS Fall and Spring Composite Correlations

CLASS Fall and Spring Composite Correlations

Composite	Emotional Support	Classroom Organization	Instructional Support
<i>Fall</i>			
Emotional Support	1		
Classroom Organization	0.54	1	
Instructional Support	0.51	0.38	1
<i>Spring</i>			
Emotional Support	1		
Classroom Organization	0.66	1	
Instructional Support	0.48	0.58	1

Table 8: Confirmatory Factor Analyses for SSIS-RST Composites

Confirmatory Factor Analyses for SSIS-TRS Composites

	χ^2	CFI	TLI	RMSEA	Lower	Upper	Rel.
<i>Fall</i>							
Emotion Dysregulation	7.137	1.000	1.004	0.000	0.000	0.013	0.94
Externalizing	62.759	0.998	0.997	0.019	0.000	0.036	0.93
Conduct Problems	2.85	1.000	1.007	0.000	0.000	0.047	0.88
Bullying	1.260	1.000	1.026	0.000	0.000	0.014	0.90
Hyperactivity/Inattention	30.052	0.992	0.987	0.049	0.025	0.074	0.89
Internalizing	13.545	1.000	1.001	0.000	0.000	0.043	0.87
<i>Spring</i>							
Emotion Dysregulation	4.558	1.000	1.005	0.000	0.000	0.000	0.95
Externalizing	57.34	0.999	0.999	0.011	0.000	0.032	0.94
Conduct Problems	0.644	1.000	1.014	0.000	0.000	0.000	0.90
Bullying	0.454	1.000	1.026	0.000	0.000	0.000	0.91
Hyperactivity/Inattention	25.680*	0.994	0.991	0.042	0.014	0.068	0.90
Internalizing	11.964	1.000	1.003	0.000	0.000	0.039	0.89

*p-value < .05

**p-value < .01

Table 9: Fall (Time 1) Latent profile analysis model fit statistics for 1- through 7-profile solutions

Fall (Time 1) Latent profile analysis model fit statistics for 1- through 7-profile solutions

No. of profiles	AIC	BIC	aBIC	LMR	Entropy
1	3614.520	3656.047	3624.309	--	--
2	2408.761	2475.204	2424.423	1185.643**	0.965
3	2002.462	2093.822	2023.998	407.267**	0.937
4	1798.902	1915.179	1826.312	209.875	0.929
5	1668.008	1809.201	1701.291	139.126	0.943
6	1563.601	1729.710	1602.758	113.336	0.938
7	1469.882	1660.908	1514.913	97.112	0.944

Note. Bolded text indicates selected profile.

** $p < .05$

Table 10: Fall (Time 1) Descriptive Statistics for SSIS-RST Constructs by Profile Type

Fall (Time 1) Descriptive Statistics for SSIS-RST Constructs by Profile Type

Fall Assessments	Profile 1 (n=312, 66%) <i>NORMATIVE</i>		Profile 2 (n=116, 25%) <i>AT-RISK</i>		Profile 3 (n=42, 9%) <i>COMORBID</i>	
<i>SSIS-RST Constructs</i>	Mean (SD)	Range	Mean (SD)	Range	Mean (SD)	Range
Emotion Dysregulation	0.51 (0.41)	0.00-1.43	1.20 (0.43)	0.29-2.71	1.97 (0.55)	0.86-3.00
Conduct	0.07 (0.13)	0.00-0.60	0.72 (0.27)	0.20-1.20	1.59 (0.42)	0.20-2.40
Bullying	0.04 (0.11)	0.00-1.00	0.31 (0.31)	0.00-1.00	1.22 (0.60)	0.20-2.60
Hyperactivity/Inattention	0.32 (0.32)	0.00-1.71	1.08 (0.43)	0.14-2.43	1.74 (0.37)	1.14-2.43
Internalizing	0.23 (0.31)	0.00-2.00	0.62 (0.49)	0.00-2.00	1.08 (0.55)	0.00-2.14
<i>Child Demographics (%)</i>						
Intervention condition	54%	--	52%	--	50%	--
Child Gender (Male)	37%	--	56%	--	67%	--
Child Race (Student of Color)	20%	--	35%	--	36%	--
Disability Status (Identified)	5%	--	10%	--	21%	--
Primary Language (English)	90%	--	94%	--	95%	--

Table 11: Spring (Time 2) Latent profile analysis model fit statistics for 1- through 7-profile solutions

Spring (Time 2) Latent profile analysis model fit statistics for 1- through 7-profile solutions

No. of profiles	AIC	BIC	aBIC	LMR	Entropy
1	3742.795	3784.322	3752.584	--	--
2	2564.949	2631.393	2580.612	1158.465	0.951
3	2053.141	2144.501	2074.677	509.993**	0.939
4	1907.650	2023.927	1935.060	153.337	0.930
5	1793.474	1934.667	1826.757	122.848	0.947
6	1688.139	1854.249	1727.296	114.240	0.920
7	1598.259	1789.285	1643.290	83.178	0.931

Note. Bolded text indicates selected profile.

** $p < .05$

Table 12: Spring (Time 2) Descriptive Statistics for SSIS-RST Constructs by Profile Type

Spring (Time 2) Descriptive Statistics for SSIS-RST Constructs by Profile Type

Spring Assessments	Profile 1 (n= 312, 66%) <i>NORMATIVE</i>		Profile 2 (n= 119, 25%) <i>AT-RISK</i>		Profile 3 (n= 39, 8%) <i>COMORBID</i>	
<i>SSIS-CIP Constructs</i>	Mean (SD)	Range	Mean (SD)	Range	Mean (SD)	Range
Emotion Dysregulation	0.41 (0.41)	0.00-2.00	1.16 (0.44)	0.14-2.57	1.80 (0.66)	0.00-3.00
Conduct	0.10 (0.17)	0.00-0.80	0.74 (0.30)	0.00-1.40	1.70 (0.52)	0.20 -3.00
Bullying	0.04 (0.11)	0.00-0.80	0.34 (0.31)	0.00-1.00	1.35 (0.55)	0.00-3.00
Hyperactivity/Inattention	0.28 (0.30)	0.00-1.14	1.10 (0.45)	0.14-2.43	1.67 (0.49)	0.86-3.00
Internalizing	0.19 (0.28)	0.00-1.86	0.61 (0.44)	0.00-0.71	1.36 (0.56)	0.00-3.00
<i>Child Demographics</i>						
Intervention condition	56%	--	49%	--	41%	--
Child Gender (Male)	37%	--	63%	--	46%	--
Child Race (Student of Color)	20%	--	37%	--	39%	--
Disability Status (Identified)	5%	--	17%	--	8%	--
Primary Language (English)	87%	--	95%	--	97%	--

Table 13: Latent transition frequencies and proportions

Latent transition frequencies and proportions

Profile Transition Type	Number of Children	Proportion of Sample
1 to 1	292	62%
1 to 2	18	4%
1 to 3	2	0.4%
2 to 1	20	4%
2 to 2	83	18%
2 to 3	13	3%
3 to 1	0	0%
3 to 2	18	4%
3 to 3	24	5%

Table 14: Profile transition probabilities from Fall to Spring

Profile transition probabilities from Fall to Spring

	Normative	At-Risk	Comorbid
Normative	0.927	0.064	0.009
At-Risk	0.179	0.715	0.106
Comorbid	0.009	0.419	0.572

Table 15: Multinomial logistic regression for those who started in the Normative profile in Fall (Comparison group: Stayed in Normative profile)

Multinomial logistic regression for those who started in the Normative profile in Fall (Comparison group: Stayed in Normative profile)

	β	S.E.	Odds Ratio
Normative profile to At-Risk profile			
Condition (Treatment)	-2.394*	0.387	0.091
Gender (Male)	0.313	0.261	1.368
Race (Student of color)	0.877	0.262	2.405
Emotional Support	0.390	0.336	1.477
Classroom Organization	-0.462	0.272	0.630
Instructional Support	0.198	0.290	1.219
Normative profile to Comorbid profile			
Condition (Treatment)	14.215**	1.122	--
Gender (Male)	-12.328**	0.829	0.000
Race (Student of color)	-1.959	0.845	0.141
Emotional Support	-6.375*	1.948	0.002
Classroom Organization	2.896	1.532	18.098
Instructional Support	4.218*	1.671	67.884

Note. Predictors of movement from the *normative* to the *comorbid* profile should be interpreted with caution due to the low number of students who moved (n=2).

* $p < .05$; ** $p < .01$

Table 16: Multinomial logistic regression for those who started in the At-Risk profile in Fall (Comparison group: Stayed in At-Risk profile)

Multinomial logistic regression for those who started in the At-Risk profile in Fall (Comparison group: Stayed in At-Risk profile)

	β	S.E.	Odds Ratio
<i>At-Risk profile to Normative profile</i>			
Condition (Treatment)	-0.106	0.329	0.889
Gender (Male)	-0.873	0.290	0.418
Ethnicity (Student of color)	-0.694	0.377	0.500
Emotional Support	-0.881*	0.410	0.414
Classroom Organization	0.556	0.323	1.743
Instructional Support	0.697	0.388	2.008
<i>At-Risk profile to Comorbid profile</i>			
Condition (Treatment)	-0.235	0.403	0.790
Gender (Male)	-1.712*	0.351	0.181
Ethnicity (Student of color)	-0.608	0.367	0.544
Emotional Support	0.304	0.463	1.355
Classroom Organization	-0.293	0.426	0.746
Instructional Support	0.319	0.393	1.376

* $p < .05$; ** $p < .01$

Table 17: Multinomial logistic regression for those who started in the Comorbid profile in Fall (Comparison group: Stayed in Comorbid profile)

Multinomial logistic regression for those who started in the Comorbid profile in Fall (Comparison group: Stayed in Comorbid profile)

	β	S.E.	Odds Ratio
Comorbid profile to At-Risk profile			
Condition (Treatment)	2.771*	0.533	15.972
Gender (Male)	0.761	0.392	2.139
Ethnicity (Student of color)	-3.262*	0.586	0.038
Emotional Support	-0.630	0.525	0.532
Classroom Organization	-0.378	0.599	0.686
Instructional Support	0.245	0.410	1.277

Note. Primary Language was not included as a predictor variable as English was the only primary language identified in this transition group.

* $p < .05$; ** $p < .01$

FIGURES

Figure 1: Fit Statistics Elbow Plots for Fall Profiles

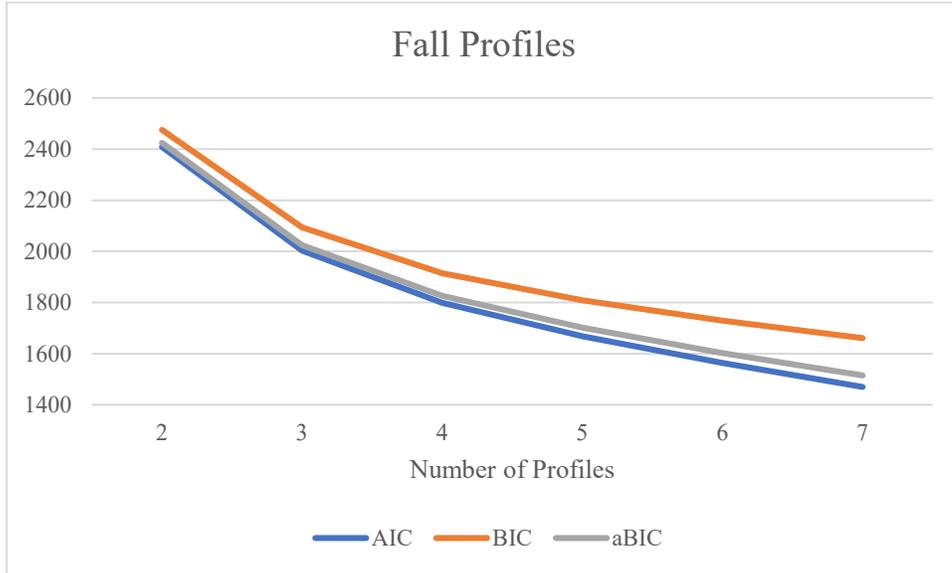


Figure 2: Composite Means for Fall 3-Profile Solution

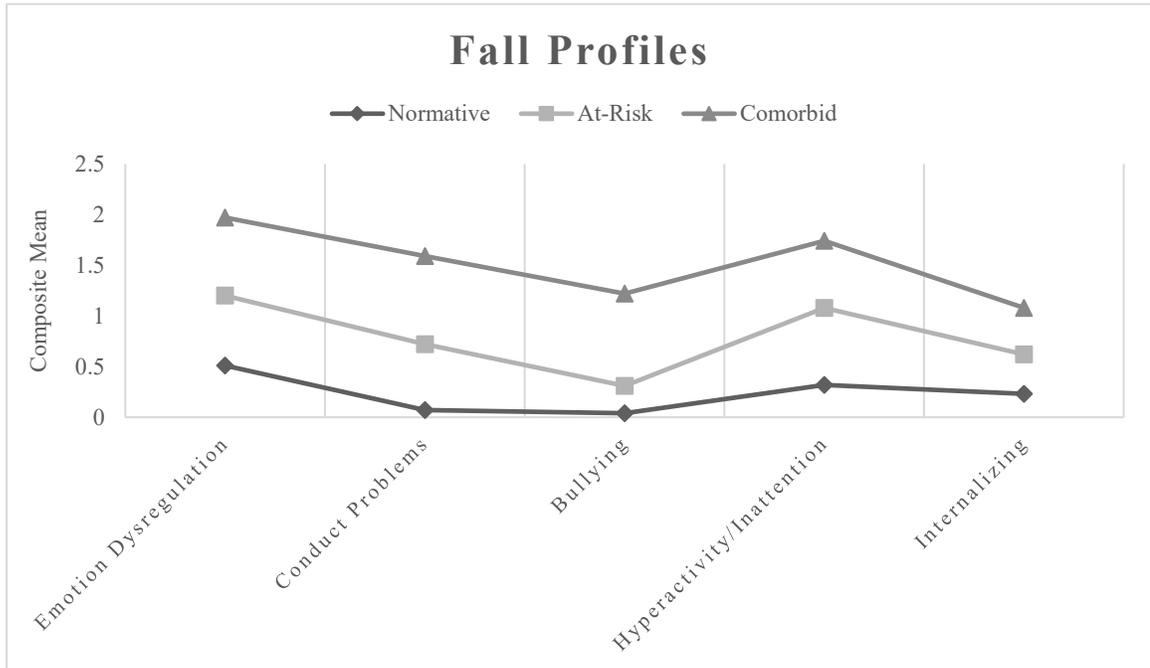


Figure 3: Fit Statistics Elbow Plots for Spring Profiles

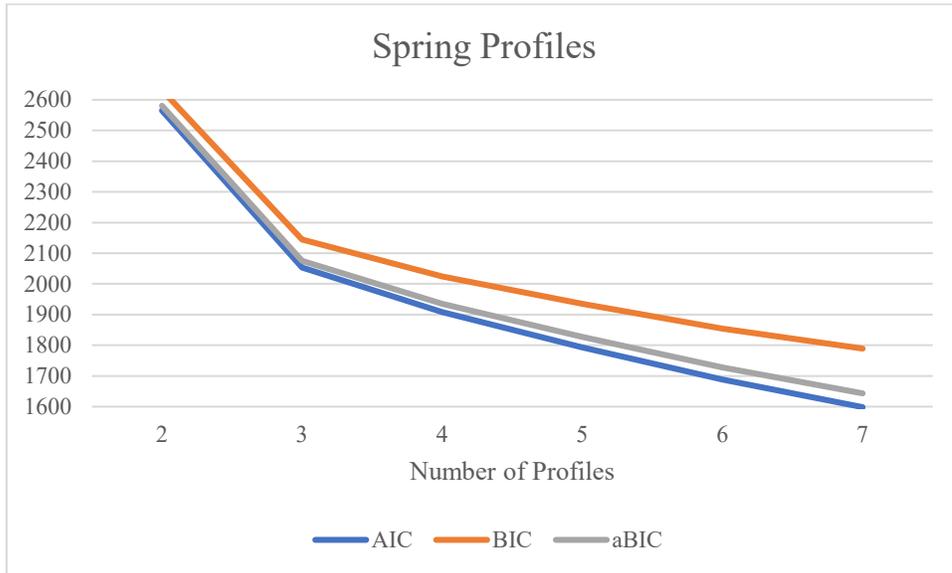


Figure 4: Composite Means for Spring 3-Profile Solution

