STUDENT-TEACHER RELATIONSHIPS, PARENT-CHILD RELATIONSHIPS, SELF-REGULATION, AND SOCIAL COMPETENCE IN A HEAD START PROGRAM

A Dissertation

by

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ABSTRACT

Student-teacher relationships, parent-child relationships, self-regulation, and social competence are important factors contributing to a child's social-emotional well-being and development. There is some research interest in determining the efficacy of Head Start centers in assisting students to achieve competency in these areas; however, this had not been previously studied in rural populations. These relationships were studied in both suburban and rural Head Start centers with the goal of identifying risk-factors for intervention in these areas. Parents and teachers were given questionnaires for information regarding their students' social, emotional and behavioral competency by using the Child Behavior Questionnaire, the Child-Parent Relationship Scale, the Student-Teacher Relationship Scale, and the Preschool and Kindergarten Behavior Scales. Of the 86 participants, approximately 29% were from Spanish-speaking homes and 70% from rural Head Start centers. Rural students were found to have a closer relationship with their teachers than students from suburban Head Start centers. Boys were also found to have more problem behaviors and a higher degree of conflict with their teachers than girls. Further research is needed to explore the relationships between caregivers and social-emotional factors in rural populations.

DEDICATION

I would like to dedicate this dissertation to all those who have encouraged and supported me throughout this process, to my family, and to my Heavenly Father.

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CHAPTER I

INTRODUCTION

Early Childhood

Early childhood has been a frequently researched topic due to the large amount of growth during this period of human development. Between the ages of 3 and 5 years, children demonstrate significant physical and cognitive growth (Johns Hopkins Medicine, 2015). All areas of child development should be monitored to determine the need for intervention. Important developmental skills include gross and fine motor skills. These abilities are evident during a child's cooperative play with peers and as they develop pre-writing skills. This development is necessary for adaptive and daily living skills including dressing, eating, and toilet training.

Language development also begins to advance, with children adding hundreds of words to their vocabulary between the ages of 3 and 5 (Johns Hopkins Medicine, 2015). Expressive and receptive language skills are crucial for children as they learn how to express their needs and wants and as they learn and process new information from their environment.

Early childhood is the time in which pre-academic skills can be established. These skills often are learned in early childhood and preschool classrooms. Basic reading skills include increased phonological awareness, letter recognition, and vocabulary. Children also develop skills in counting, recognition of basic shapes, and basic terms of measurement. These academic skills prepare children to begin kindergarten, where they will solidify these essential concepts in order to begin reading and solving basic math problems.

Socio-emotional development in young children also develops significantly between the ages of 3 and 5. Prior to entering into a preschool, children develop their first relationships at home with their primary caregivers. A secure attachment to a primary caregiver has been shown to foster healthy socio-emotional development later in life (Bowlby, 2008). Upon entering preschool, children start to establish their relationships with individuals outside of their family and become more self-aware. They learn how to respond to stimuli within a wider variety of settings. Many early childhood education programs dedicate a part of their curriculum to fostering healthy socio-emotional development in children.

As children go to preschool, the relationships that they develop with their teachers and peers have important implications on their development of social skills. Children who tend to not share with their peers and fail to engage in cooperative play tend to be viewed negatively by others (Fuhs, Farran, & Nesbitt, 2013). During this period, children begin to recognize their emotions and identify them in others. Children also begin to learn how to inhibit their behaviors and respond in ways deemed appropriate by their caregivers.

Many problems also begin to develop in early childhood. Early identification has become increasingly important for local education agencies (LEAs). These services are appropriate for children with cognitive and behavioral delays. Children are increasingly identified as having mental health problems at younger ages than in previous decades (Allen, 2009). As a result, mental health services designed for early childhood are focused on identifying children who may be at-risk for developing a mental health disorder. Without proper intervention, many negative behavioral patterns may become more difficult to treat and lead to more detrimental behaviors and disorders (Rajendran, Kruszewski, & Halperin, 2016).

There are several socio-economic factors associated with children who are at-risk for unhealthy development across many different areas. Brooks-Gunn, Duncan, Aber and the Russell Sage Foundation (1997) have observed that lower socio-economic status has been shown to have a high impact on a child's development. An estimated 15 million children in the United States live below the federal poverty threshold (National Center for Children in Poverty, 2018). Data from the 2014 American Community Survey estimated that over 630,000 children in Texas, the state where the current study was conducted, live in households with incomes less than 100% of the federal poverty guideline. Children from families with lower socio-economic status typically have additional risk factors including lower parental educational attainment, are more likely to be raised by single or teenage parents, are more likely to have unemployed parents, have less access to transportation, and are more likely to live in households with non-English speakers. Households with a lower socio-economic status have also been found to have a "word gap", with children hearing fewer words which results in a smaller vocabulary than children in higher socio-economic households (Hart & Risley, 1995).

Head Start

Head Start began in 1965 as a part of the War on Poverty legislation proposed by President Lyndon B. Johnson. Head Start was introduced as a summer program aimed at teaching children from low-income households basic school readiness skills prior to beginning kindergarten. Today, Head Start continues to promote school readiness for children from low-income families by offering a wide variety of family services. As of 2017, Head Start serves over 1 million children every year in all 50 states, as well as the District of Columbia, Puerto Rico, and U.S. territories (Early Childhood Learning and Knowledge Center, 2017). Three- and four-year old children account for over 80% of children served at Head Start (Early Childhood

Learning and Knowledge Center, 2017). The Office of Head Start administers grant funding to agencies that provide Head Start services compliant with federal guidelines (Head Start Program Performance Standards, 2016). Head Start provides services in designated centers, childcare partner locations, and in the home. These comprehensive services emphasize health, nutrition, learning, and overall family well-being. The service delivery model depends upon the needs of the community. Some examples of different delivery models include seasonal migrant workers and American Indian and Alaska Native programs (Early Childhood Learning and Knowledge Center, 2017). Children are served in both urban and rural settings, however the majority of research on Head Start children has been focused on those in urban settings (McCoy, Morris, Connors, Gomez, & Yoshikawa, 2016).

The Head Start Impact Study was conducted to determine the long-term impact of the Head Start program throughout a child's academic career. One of the most noted criticisms of the program is that the academic gains tend to "fade" over time, with no significant difference between students from identical socio-economic background and those who were in the program by the 4th grade (Puma et al., 2010). Despite these findings, countless Head Start students and parents have stories of how the program has had a significant, positive impact of their lives and well-being of their children (Head Start Parent and Family Stories, 2016).

Students in the Head Start program are characterized by extreme need. As a requirement to be in the Head Start program, 90% of students enrolled live in households at or below the poverty line. The remaining 10% of children who are above that income threshold typically would be considered low-income, but do not otherwise meet the criteria. There are several other factors that are included in determining if a child will be enrolled in Head Start including if the

family is considered homeless or if the child has been identified as having a disability through Early Childhood Intervention (ECI) or the Local Education Agency (LEA).

Child Development and Early Learning Framework

Within Head Start there are five domains of the Head Start Child Development and Early Learning Framework: Language and Literacy, Cognitive and General Knowledge, Approaches to Learning, Physical Development and Health, and Social and Emotional Development. Head Start's comprehensive services model is comprised of nine areas: education, screenings and follow-up for health, development and behavior, health and safety, social and emotional health, nutrition, family goal-setting, social services, transition services, and services for children with disabilities. This model aims to improve school readiness for all students and ensure access to appropriate services. Of the services and screenings that Head Start conducts for all children, social and emotional screenings are paramount and include measurement of areas including social skills and problem behaviors. The aim of these measurements is early identification and implementation of mental health resources for at-risk children (Allen, 2009).

Children who live in poverty are also at-risk due to their lower access to educational resources. While programs have been developed in urban areas to assist those in poverty, children who live in rural environments have less access to public services than similar children in urban environments. Head Start children are served in both urban and rural settings, however the majority of research has been focused on students in urban Head Start settings.

Urban vs. Rural

Head Start faces challenges when serving families in different community settings. One of the most daunting challenges faced by the program in rural communities is a high turnover of teachers (Jean-Marie & Moore, 2004). Garner, Carter McLean, Waajid, and Pittman (2015)

stated, "many rural communities have difficulty retaining highly trained and qualified teachers" although they remain uncertain of the cause (p.294). Findings in rural teacher instructional quality indicate that teachers with high instructional quality are a strong predictor of academic success. Data suggest that teachers with high instructional quality make a greater difference in the performance of rural students when compared with those from suburban or urban environments (Garner et al., 2015). Not all gains realized are academically related. In one study, the teacher-student relationship did not affect the academic success of students, but matched the behavioral that students made throughout the year (Burchinal, Vernon-Feagans, Vitiello, & Greenberg, 2014). This suggests that behavior can be improved through teacher attitude and training.

The National Advisory Committee on Rural Health and Human Services (2012) posited many barriers to access for families in rural areas. Rural areas typically have fewer providers for services, especially in dental and mental health services. As a result, many of the programs are less likely to be compliant with federal regulation policies which can result in the loss of grants, higher program turnover, and fewer established agencies. Rural families can experience difficulty securing transportation that may not always be provided through Head Start grant funding (Neidell & Waldfogel, 2009). Transportation problems mean that fewer families have access to the program and are not able to attend school as consistently. Lack of transportation also limits parents' availability to get to medical, dental and mental health services, as well their participation in Head Start activities and community events (Chertow & Syracuse Univ., 1968; Lee, 2017; Neidell & Waldfogel, 2009). These issues are typically less common in urban areas, where many families are able to walk to areas to receive services.

Research conducted on the level of perceived family engagement in Head Start activities indicated that families of urban Head Start students perceived higher levels of engagement than families in rural settings (Keys, 2014). There are typically fewer accessible community activities such as museums and libraries available in rural areas (Durham & Smith, 2006). At the same time, there are some advantages to rural areas; there are typically more closely tied relationships with a small set of local stakeholders. Children in rural communities also tend to spend more time with their family members doing daily activities such as eating meals together (Bender, Fedor, & Carson, 2011).

There is a lack of research exploring the differences between urban and rural Head Start centers (Keys, 2014; McCoy, Morris, Connors, Gomez, & Yoshikawa, 2016). The research that does explore differences focuses on academic skills such as language development. Less emphasis is placed on the differences between urban and rural Head Start centers in regard to mental health. Johnson, Showalter, Klein, Lester, & Rural School Community (2014) reported that students living in rural areas comprise 20.4% of all students in the United States, with minority students making up 26.7% of the total rural student population, with Texas enrolling the largest number of rural students in the country. Approximately 81% of counties with persistent childhood poverty in the US are nonmetropolitan (National Advisory Committee on Rural Health and Human Services, 2012). There has been significant research indicating that poverty has a profound influence on children's behavioral problems in both urban and rural communities (Raver et al., 2009). Less is known about how these problems can be remedied.

Children in urban environments typically display more characteristics associated with self-control than children in rural communities, with parents of rural children reporting greater difficulties controlling their children's externalizing behaviors (Montroy, Bowles, Skibbe, &

Foster, 2014). Students in rural communities typically display more positive socialization behaviors associated with a traditional, secure attachment style to their parents. Researchers have also noted gender differences, with boys in rural communities having more behavior problems than boys in urban communities (Bender et al., 2011).

Self-Regulation

Self-regulation can be defined in several ways, but for the purposes of this study it is defined as the children's ability to control emotions and inhibit response, while responding appropriately to environmental stimuli. A frequently studied subject, self-regulation has been tied to several similar concepts including effortful control, inhibitory control, and executive functioning (Perry, 1998; Post, Boyer, & Brett, 2006). Self-regulation often includes emotional regulation, as emotions are the precursor to interaction with one's environment (Lengua, 2002).

Self-regulation should be a focus in early childhood development as it leads to improved behavior that continues into adulthood. Important implications have been made from children's self-regulation indicating that improvements can be made in other areas of development including later academic achievement (Mischel, Shoda, & Rodriguez, 1989). Research on intervention effectiveness leading to improved social and emotional outcomes is inconclusive, which may imply that the causal mechanism of self-regulation may not be fully understood (Montroy, Bowles, Skibbe, & Foster, 2014).

The ability to self-regulate affects several areas within a child's everyday life including academics, eating habits, physical activity, and socializing (Drake, Belsky, & Featon, 2014; Pianta et al., 2017). A child's ability to socialize with others has important implications for their relationships with their family members, friends, and teachers. Children who struggle to develop

these relationships often have difficulty expressing themselves appropriately and may develop unhealthy patterns of behavior.

Social Competence

A child who has a high level of social competence has fewer difficulties with externalizing and internalizing behaviors and demonstrates superior social skills. Social competence is a term that has had some different definitions throughout research, however for the purposes of this study, we define it as the degree to which a child has healthy socio-emotional relationships with others (Cook & Oliver, 2011). Social competence has been linked to other measures of sociability (Topping, Bremner & Holmes, 2000).

Due to the variability in the definition of social competence, research in the subject area is broad. While research in the areas of problem behaviors and social skills have been studied separately, often combining the two areas can give a bigger picture of how a child is functioning socially within their environment. These skills are often interrelated and can develop over time. Children who lack these skills in early childhood have been shown to have increased difficulty in their relationships with others (Rabiner, Godwin, & Dodge, 2016). In turn, difficulty establishing relationships has been shown to have adverse effects on other aspects of a student's life, including academic performance (Mundy et al., 2017).

Teacher-Child Relationship

The relationship between a child and their teacher has always been a subject of interest for those within education research. The influence that each person in a relationship has on another's thoughts, feelings, and behaviors can lead to shared improvement, development and growth. Research has shown that a positive classroom environment improves outcomes for students both academically and socially (Palermo, Hanish, Martin, Fabes, & Resier, 2007). A

relationship based on mutual trust and respect, with consideration for cultural values, can bring about benefits for both teacher and child (Hamre & Pianta, 2001).

Within the teacher-child relationship, there have been several facets studied including closeness and conflict (Rudasil & Rimm-Kaufman, 2009). These can affect the teacher's perception of the child and affect the way in which the teacher responds to the child's behavior (Palermo, Hanish, Martin, Fabes, & Resier, 2007). Other factors such as gender and ethnicity of the student may play a role in the way a teacher responds to a child (Choi & Dobbs-Oates, 2016). The teacher's own level of experience and stress management may also affect the relationship (Hamre & Pianta, 2001).

Parent-Child Relationship

Since early attachment research (Bowlby, 1958; Ainsworth & Bowlby, 1991; Bretherton, 1992), parent-child relationships have been well-studied as an important factor in an important factor in child development. In fact, the United States Senate Committee on Health reported that preschool "does not produce miracles" and parenting is the most important factor in early childhood education (US Senate, 2015, p. 3). Sensitive and responsive care by caregivers during early childhood has a significant impact on later developmental outcomes (Vu, Hustedt, Pinder, & Han, 2015).

Like teacher-child relationships, parent-child relationships have been studied across several facets including closeness and conflict (Driscoll & Pianta, 2011). The relationship has been linked to several social and emotional outcomes for children including self-regulation, social skills, problem behaviors, and teacher-child relationships (Montroy et al., 2016; O'Connor et al., 2017; Sharkins, Leger, & Ernest, 2017). There is limited research on research in rural early childhood programs with an ethnically diverse population (Posada et al., 2016).

Purpose of Study

For the current study, the topics of self-regulation, social competence, teacher-child relationships, and parent-child relationships were studied due to the impact these interrelated concepts have on early childhood development. Within a rural context, this is an area with a lack of research. The strength of relationships between self-regulation, social competence, and teacher-child relationship were explored, with consideration for demographic factors. Data were collected from parents and teachers across suburban and rural Head Start programs to examine how the teacher-child relationship and the parent-child relationship play a role in social and emotional developmental factors in young children. The proposed models examining the hypothesized relationships between variables in shown in Figure 1 and Figure 2.

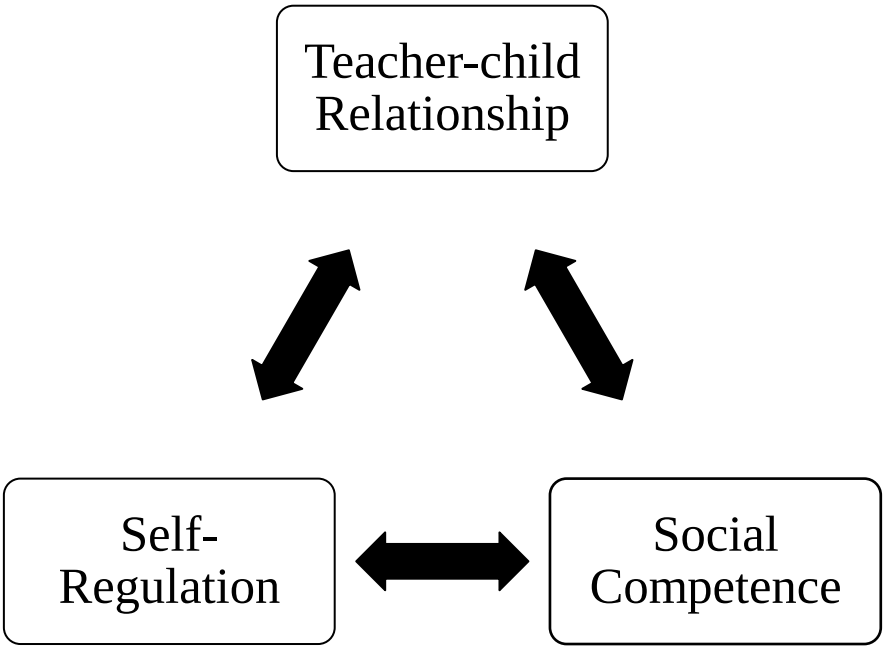

Figure 1. Hypothesized model of teacher-child relationship.

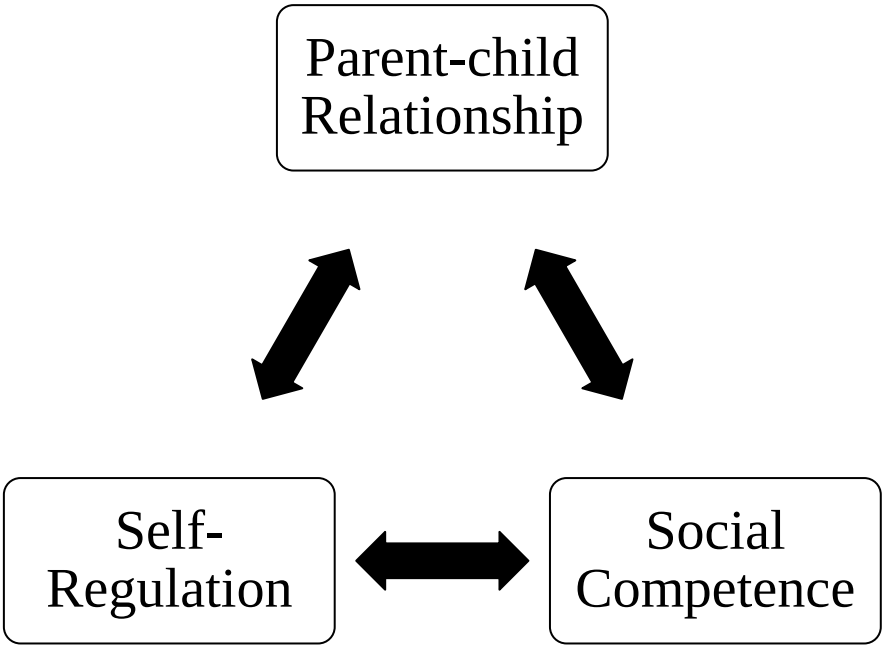

Figure 2. Hypothesized model of parent-child relationship.

Research Questions

1.) Does self-regulation predict problem behaviors? Does self-regulation predict social skills? Does self-regulation predict social competence overall, as measured by problem behaviors and social skills?

It is hypothesized that children with a higher ability to self-regulate will have fewer reported problem behaviors and more reported social skills.

2.) Does self-regulation predict teacher-child relationships? Do teacher-child relationships predict problem behaviors? Do teacher-child relationships predict social skills? Do teacher-child relationships predict social competence overall?

It is hypothesized that children with a higher ability to self-regulate will have a better relationship with their teacher. We hypothesize that children with a more positive teacher-child relationship will have fewer reported problem behaviors and more social skills.

3.) Do teacher-child relationships mediate the relationship between self-regulation and social competence? Are there differences in regard to these relationships when accounting for sex, age, population density, or English Language Learner status?

It is hypothesized that teacher-child relationships will explain the relationship between self-regulation and social competence. We hypothesize that this relationship will stronger for males than females. It is hypothesized that age will have no impact on the strength of this relationship. We hypothesize that this relationship will be stronger for children living in less densely populated areas. It is hypothesized that the relationship will be stronger for English Language Learners.

4.) Does self-regulation predict parent-child relationships? Do parent-child relationships predict problem behaviors? Do parent-child relationships predict social skills?

It is hypothesized that parent-child relationships will explain the relationship between self-regulation and social competence, similarly to the teacher-child relationship. We hypothesize that this relationship will not be impacted by age. We hypothesize that this relationship will be stronger for children living in less densely populated areas. It is hypothesized that the relationship will be stronger for English Language Learners.

Significance and Implications

This research has important implications in regard to assessing the varying levels of risk children have for developing disabilities and other traits that may affect their school readiness. Early detection of problems is essential to intervention and access to specialized services.

Research in this area can also aid in developing interventions and training for teachers and staff in service delivery. By having more information about how to focus efforts for intervention, the needs of children can better be served.

CHAPTER II

LITERATURE REVIEW

Self-Regulation

Thorne (1946) first defined self-regulation as intelligent adaptation through training and psychology rather than free will. Over the years, definitions of self-regulation have changed (Post, Boyer, & Brett, 2006; Martin & McLellan, 2008). One way to define self-regulation is "the ability to comply with a request, to initiate and cease activities according to situational demands, to modulate the intensity, frequency, and duration of verbal and motor acts in social and educational settings" (Kopp, 1982, p.199). Alternatively, self-regulation is an "individuals' capacity to control their reaction to stress, their capacity to maintain focused attention, and their capacity to interpret mental states in themselves and others" (Fonagy & Target, 2002, p.307). Lengua (2002) asserted that self-regulation includes processes that modulate emotionality, facilitating or inhibiting affective responses. More recently, Sawyer, Miller-Lewis, Searle, Sawyer, & Lynch (2015) defined self-regulation as a children's ability to control emotions and inhibit responses and to adaptively regulate their emotional responses to environmental demands. Across definitions of self-regulation, the reference to temperance of emotions and inhibitory control when responding to stimuli commonly occur.

For the purpose of this study, self-regulation will be used to reflect a child's ability to inhibit behaviors and moderate their response to their environment. It is similar to the self-regulation definition supported by Sawyer, Miller-Lewis, Searle, Sawyer, and Lynch (2015). Research in early childhood utilizes this definition as it can be more easily measured through the use of parent and teacher report (Martin & McLellan, 2008).

Developmental Trajectory of Self-Regulation

Research in self-regulation initially focused on children in the later grades of elementary school until early adulthood; however, findings over the last twenty years have demonstrated that children show beginning signs of self-regulatory skills in early childhood (Montroy, Bowles, Skibbe, McClelland, & Morrison, 2016; Perry, 1998). Preschool children often begin to demonstrate skills needed to listen, follow directions, interact with peers, and pay attention by the time they enter kindergarten. As preschoolers struggle to apply these skills, there is an opportunity for early intervention to aid with self-regulation development (McClelland & Tominey, 2014). Notably, a longitudinal study of children from early childhood to age 10 conducted by Zhou et al. (2007) showed that attentional and behavioral persistence on challenging tasks can be stable for some children, but not all.

Block and Block's (1980) self-regulation theoretical framework focuses on two aspects: ego-control and ego-resiliency. Ego-control refers to the inhibition or expression of impulse and ego-resiliency to the dynamic capacity to contextually modify one's level of ego-control in response to situational affordances (Block, 1950). Longitudinal research has found ego resiliency in childhood to be a promotive factor for the development of global adjustment in late adolescence and adulthood. Ego resiliency was also significantly associated with more adaptive functioning at age 19 and 26, which also predicted externalizing problems in adulthood (Causadias, Salvatore, & Sroufe, 2012). Few of these studies have used these definitions of in describing self-regulatory behavior in adolescence and it may not be appropriate for early childhood research.

Longitudinal research has shown that higher self-regulation was associated with lower behavioral problems two years after completing measures in preschool and children who struggle

to make gains in self-regulation during early childhood struggle to increase these skills later in life (Sawyer et al., 2015). In addition to longitudinal behavioral studies, data suggest that self-regulation is important in a child's high school years. In one study, high school students' self-reported self-regulation predicted continuing academic achievement above and beyond prior achievement (Helle, Laakkonen, Tuijula, & Vermunt, 2013). Older adults with high self-regulatory beliefs have been shown to make more progress in achieving social goals. Older adults' abstract images of their social selves are associated with progress toward social goals. For older adults, the effort to maintain social relationships has been attributed to improved health and well-being (Ko, Mejía, & Hooker, 2014).

Importance of Self-Regulation

Relation to Behavioral Problems

Some studies have shown that children with less self-regulation tend to have difficulty with demonstrating acceptable behavior (Maggio, Zappulla, & Pace, 2016). A lack of self-control can lead to frequent confrontation with adults and peers (Montroy, Bowles, Skibbe, & Foster, 2014). In research conducted in a clinical, outpatient setting the ability to regulate behavior completely accounted for the association between reactive, aggressive and externalizing problems (White, Ollendick, & Jarrett, 2012). As a result, children with deficits in self-regulation were more likely to engage in reactive aggression and have internalizing and externalizing problems than those with average levels of self-regulation. This phenomenon has been studied with regard to both parents and teacher perspectives within the classroom. Research conducted with preschool and kindergarten children in Belgium found that higher levels of positive behavioral engagement in the classroom were found in children with higher levels of self-regulation (Cadima, Doumen, Verschueren, & Buyse, 2015). In a study of

Australian children age 4-6, children with higher levels of parent-reported self-regulation at 4 years had lower levels of behavioral problems reported by both teacher and parent at age 6. Children with greater rates of improvement in self-regulation between age 4 and 6 also had a lower risk of behavioral problems at age 6. Additionally, deficiencies in self-regulation at age 4 pose a risk for later behavioral problems at age 6 (Sawyer et al., 2015).

Relation to Academic Outcomes

Self-regulation is not only related to more positive behavioral relationships with others, but also to higher achievement in academic skills. Self-regulation was differentiated as task attentiveness and emotional regulation (Sawyer et al., 2015). Children with higher increases in task attentiveness from ages 2-3 to 6-7, had higher achievement in math at age 6-7. Researchers also found that children with higher increases in emotional regulation had slightly higher rates in literacy (Sawyer et al., 2015). Targeted self-regulation interventions on a class-wide level have shown to lead to significant benefits in their pre-academic skills including vocabulary, letter-naming, and math skills (Raver et al., 2011). In a study conducted with 3rd grade students of mainly Caucasian descent from a city in the Midwestern United States, the manner in which parents give instructions and provide emotional support when completing a task were related to their child's academic self-regulatory behaviors including attention to instructions, seeking help, monitoring progress, involvement in class discussions, and metacognitive talk (Stright, Neitzel, Sears, & Hoke-Sinex, 2001). Children who were English Language Learners showed greater gains in academic areas (specifically math academic skills) when measured in post-test assessment than English-speaking experimental counterparts (Tominey & Acock 2015).

Factors that Affect Self-Regulation

Parental Factors

The influence of the home environment can lead to factors that strengthen and weaken the development of self-regulation in child. One of these factors is the influence of the parental relationship with the child. Maternal attention has been found to be a protective factor and plays a larger role than socioeconomic disadvantage in the development of socio-emotional competence (Russell, Lee, Spieker, & Oxford, 2014).

Other factors found to have an effect on more positive parenting styles. Household chaos disorganization has been found to have a unique effect beyond poverty on parenting quality (Vernon-Feagans, Willoughby, Garrett-Peters, & The Family Life Project Key Investigators, 2016). This was found to have a greater effect than other factors such as maternal education and household instability.

Some studies have shown that children with higher risk actually have higher ratings of self-regulation by their parents and teachers. In a study conducted with Early Head Start mothers and children of primarily Caucasian descent, toddlers with the highest number of risk factors were rated as having more coping skills than those who were less at risk (Brophy-Herb, Stansbury, Bocknek, & Horodynski, 2012). Similarly, warm and nurturing parental relationships with both mothers and fathers have shown to be positively related to increased self-regulatory processes, especially in children of ethnic minorities (Owen et al., 2012).

Culture/ELL

McClelland and Wanless (2015) stated, "the sheer number of researchers investigating self-regulation from different countries suggests that self-regulation is an important construct for a range of short- and long-term outcomes" (p. 610). Findings across cultures suggest there is

possibly a universal pattern of behavioral self-regulation and academic success. Due to some inconsistent findings, researchers continue to explore if there may be different functioning of self-regulation depending on the cultural context. In a cross-cultural study of self-regulation including samples from Germany, France, and Iceland, researchers measured self-regulation with multiple measures and found that live administration of measures and teacher reports measured different aspects of self-regulation across cultures. When assessing results from a live administration of the Head-Toes-Knees-Shoulders task, higher behavioral self-regulation was significantly related to greater academic growth in math in France and word reading in Germany (Gestsdottir et al., 2015. Results from teacher reports indicated that behavioral self-regulation was related to higher academic growth in all areas in France and Iceland, with more vocabulary growth in Germany. While examining the role gender has on self-regulation, males had lower self-regulation scores than females in Iceland. Gender was not related to either measure of behavioral self-regulation in Germany or France. Across Iceland, USA, Germany, and Canada, researchers found Selection, Organization, Compensation model for self-regulation was fairly generalizable across cultures for adolescents (Gestsdottir et al., 2015).

In a study of Turkish preschool students, effortful control and executive function were related to self-regulation (Gündüz, Yagmurlu, & Harma, 2015). While a positive association was found between responsive parenting and socioemotional development, it was not mediated by self-regulatory skills (Gündüz, Yagmurlu, & Harma, 2015). Turkey, Gündüz, Yagmurlu, and Harma (2015) extended the definition of family risk by including maternal depressive symptoms and parenting in their study of the development of self-regulation and socioemotional competence in a diverse group of children. In addition, Leyva and Nolivos (2015) investigated how low-income Chilean parents scaffold children's participation in conversations and relations

with their children's self-regulation skills. This study provided concrete ways in which interventions can capitalize on narrative styles to support the development of self-regulation. In young children from Portugal, lower socioeconomic status was shown to be a risk factor for behavioral regulation and academic achievement; however, behavioral regulation mediated the relationship between socioeconomic status and mathematics achievement (Cadima, Gamelas, McClelland, & Peixoto, 2015).

Classroom Factors

In research examining classroom-based curriculum, researchers found that children in the intervention group demonstrated improved self-regulation skills, salivary cortisol (and indicator of stress response), and academic outcomes compared to children in the control group, with stronger effects for children in high-poverty schools (Blair & Raver, 2014). In contrast, Degol and Bachman (2015) found that the more time that a teacher spent on classwide behavioral socialization was associated with less self-regulation.

Children made gains in cognitive self-regulation when positively reinforced for behavioral compliance by their teachers (Fuhs et al., 2013). The security a toddler feels with their teacher was negatively associated with hostile aggression and positively with complex peer play and gregarious behaviors. Prosocial behaviors and withdrawing behaviors were associated with a more securely perceived relationship with the teacher (Howes, Matheson, & Hamilton, 1994). Other factors including social skills predicted closeness with teachers, whereas conflictual student-teacher relationships were predicted by problem behaviors (Demirkaya & Bakkaloglu, 2015).

Teacher-reported measures and direct behavior observations have shown a positive relationship with self-regulation and math and literacy skills, academic achievement (Schmitt,

Pratt, & McClelland, 2014). Self-regulation predicts classroom behavior problems, which affect relationships with teachers and peers. Different aspects of self-regulation has been linked to cognitive competence, social competence, and behavior problems. These areas have an effect on academic development and relationships with teachers and peers (Garner & Waajid, 2012).

Sharkins, Leger, and Ernest (2016) argued behavioral self-regulation potentially accounts for 87% of total socio-emotional competence. Furthermore, findings indicated that socio-emotional development significantly and directly contributes to language development and indirectly to cognitive development. Language development was found to be associated with social skills and social competence, as students who have higher communication skills may be able to form more significant relationships (Sharkins et al., 2016). Inattention in preschool was a predictor for later development of socio-emotional competence, including higher self-regulatory skills, in 1st grade (Russell, Lee, Spieker, & Oxford, 2014).

Social Competence

Social and emotional competence has been described as a wide range of developmental indicators that children need for successful social adaptation (Niles, Reynolds, & Roe-Sepowitz, 2008). There have been many different measures of social competence with many different aspects of sociability. The lack of a consistent definition is especially evident among research of children with developmental disabilities (Cook & Oliver, 2011). As with many of the social terms, there is no universally accepted definition for social competence and the term has undergone various transformations and has evolved over time and throughout research. Early definitions focused on social behavior, with cognitive and affective components have been seen as equally important (Topping, Bremner & Holmes, 2000). Cook and Oliver (2011) suggested that "poorly defined terminology makes it extremely difficult to evaluate and integrate research

and construct models of the determinants of social functioning or other related end points" (p. 12). Often, the constructs related to sociability (e.g. social cognition, social behavior, social skills, social competence, social functioning) are often used interchangeably and without a consistent definition, which makes definitions across research difficult to make (Cook & Oliver, 2011).

Research on preschool and elementary students has illustrated that the types of behavioral problems can be separated into two types: Internalizing and externalizing problems. While these are two very separate types of behavioral problems, they can often co-occur and children can struggle with both. Children with externalizing problems typically are undercontrolled, which results in more impulsive behavior. They are typically rated as being more prone to angry emotions and somewhat prone to sadness. Children high on internalizing problems were more likely to be overcontrolled, with less likelihood of being impulsive and lower ratings on effortful control. These children are more likely to experience sadness and feelings of loneliness. As a result, there may some overlap between children with higher ratings of emotionality and internalizing problems (Eisenberg et al., 2001). There is a general agreement that the presence of adequate social competence allows individuals to have successful outcomes in social situations, develop positive relationships with peers and engage in social behaviors that have mutually reinforcing consequences. As a result, for the purpose of this study, social competence will be evidenced by prosocial behaviors (e.g., social skills) and fewer problem behaviors, internalizing and/or externalizing.

Developmental Trajectory of Social Competence

Social competence begins to develop in early childhood as children learn to interact with others appropriately. Research in early childhood has shown the impact social competence has

on developing relationships with peers and adults. In a longitudinal study, boys benefitted more through increased social competence by participating in a Head Start program in comparison to non-participating children (Niles, Reynolds, & Roe-Sepowitz, 2008). Girls have also been shown to engage in more positive social interactions than boys, who tend to be more physically active and aggressive (Altay & Gure, 2012). Elementary school teachers prefer students who exhibit adaptive behaviors such as controlling their temper and attending to instructions than students who exhibited maladaptive behaviors. Behavioral performance was viewed as one of the most critical skill areas by high school teachers to the success of their students, with self-control and cooperation skills as the specific skills most needed (Lane, Pierson, & Givner, 2004).

As children grow older, deficiencies in social competence can lead to an increase in internalizing and externalizing problems. Self-reported social competence was related to the trajectory of internalizing and externalizing problems in middle-age children in Finland (citation). Internalizing problems were also found to increase into adolescence in children with lower social competence (Korhonen et al., 2014). Research has also found a reciprocal influence of lower social competence and internalizing problems in adolescent girls (Obradovic & Hipwell, 2010). A lack of social competence was also found to have a significant relationship with other important outcomes for adolescents. In a study of Mexican-American adolescents, ego resilience mediated the relationship between supportive parenting and social competence (Swanson, Valiente, Lemery-Chalfant, & O'Brien, 2011). Social competence also is related to physical health and academic achievement (Swanson, Valiente, Lemery-Chalfant, & O'Brien, 2011).

Factors that Affect Social Competence

Family Factors

Factors within the family can affect development of social competence. In a study conducted with Croatian boys in kindergarten, two factors were found to predict aggressive behaviors: maternal education and attentional focusing, which is a dimension of self-regulation (Brajša-Žganec & Hanzec, 2015). Mothers who had lower academic attainment showed more aggressive behaviors toward their children than more highly educated mothers. Boys with more socio-emotional skills and higher self-regulation displayed less aggressive behavior (Brajša-Žganec & Hanzec, 2015). Maternal report of social competence in middle childhood predicted trajectory of internalizing problems, with maternal and self-report of social competence in adolescence predicted trajectory of internalizing problems (Korhonen et al., 2014).

Other stressors may also increase the level of risk for lower social competence in Head Start populations. Due to the lower socio-economic status of the Head Start population, the families may also be affected by neighborhood factors. Neighborhood structural and social characteristics were associated with social aggression and social competence, but were not associated with social withdrawal. Greater neighborhood economic disadvantage was also associated with greater social aggression and lower social competence (Caughy et al., 2012).

Child Factors

Individual differences among children affect their ability to socialize with others. The support system including teachers and peers has been show to aid student academic success, even when taking into consideration the socio-emotional factors of individual students (Hoferichter, Raufelder, Eid, & Bukowski, 2014). White, Jarrett, and Ollendick (2013) found that children with self-regulation deficits within a clinical outpatient clinic also displayed more

reactive aggressive behaviors, but not proactive aggression. They were more likely to have difficulty controlling their impulses when reacting to others than instigating conflict. These children also had more reported internalizing and externalizing problems. Self-regulation deficits in behavioral regulation and metacognition accounted for the observed relationship between reactive aggression and internalizing/externalizing problems. Furthermore, the authors found that children who engaged in proactive aggression were more likely to have externalizing problems only.

Behavioral regulation also has been shown to predict socially appropriate behavior in elementary age children, with emotional regulation being more important in fostering resiliency in children. Resiliency was also a moderator between the effect of attentional control on social status within a classroom and displays of socially appropriate behavior, which also can affect how children engage in play patterns within the classroom (Eisenberg et al., 1997). According to Spinrad (2004), a child's play tendencies predicted their social acceptance and problem behaviors within the classroom. Children who played more cooperatively with others impacted the way they were viewed by their teachers and parents. Those who were viewed as more reticent tended to be seen by adults as high in effortful regulation and low in both anger and observed positive emotion. Those children who were rated as being more reticent, with low anger and positive emotion with high regulation skills became more emotive over time. These children were well-liked by their peers and were rated as displaying fewer problem behaviors. Children who were displayed high levels of positive emotion and low regulation had more positive changes in their solitary play over time. Overall, findings indicated that temperamental emotionality (proneness to internalizing or externalizing emotions) and effortful regulation were related to children's play tendencies (Spinrad, 2004).

Classroom Factors

Children who are socially competent often engage in prosocial behavior with peers in which they voluntarily act in a way to benefit another individual (Eisenberg, Fabes, & Spinrad, 2006). Explicit classroom instruction in regard to emotional knowledge may also have an effect on social competence. Having more emotional knowledge was associated with having more emotional competence and social skills. Children with more positive emotionality, defined as an aspect of self-regulation, was negatively associated behavior problems in the classrooms (Garner & Waajid, 2012). Early childhood educators describe social competence in terms of developmentally appropriate behavior, namely as showing competent behavior in different social activities commensurate with age and being able to engage in interaction both with peers and adults (Lillvist, Sandberg, Bjorck-Akesson, & Granlund, 2009).

Cultural Influence

In Swedish preschools, teacher definitions of social competence are very similar to definitions within the literature. Teachers mostly defined as having interpersonal relations and intrapersonal skills, however roughly a quarter of the teachers had definitions that carried across several subcategories of sociability, which is also reflexive within the literature. There lacked any influence of environmental factors and mostly focused on within child characteristics (Lillvist, Sandberg, Bjorck-Akesson, & Granlund, 2009). Research on self-reported and maternal report of social competence was related to the trajectory of internalizing problems in middle-age children in Finland and supported previous research findings in the United States (Korhonen et al., 2014).

There has been research in which social competence had different findings dependent on cultural values. In a cross-cultural study with Korean and American preschoolers, more than half

of the models tested for the relation between children's emotional expressivity and social competence were moderated by cultural views (Louie, Wang, Fung, & Lau, 2015). Other research has also found that social competence in an East Asian context in more related to self-control and emotional restraint than in Western countries (Tsai et al., 2007).

Teacher-Child Relationship

Early research in teacher-child relationships focused on attachment, with many researchers generalizing the relationship between a mother and child to the relationship between teacher and child (Rudasil & Rimm-Kaufman, 2009). As research in the area progressed, the role of a teacher and the relationship with a child may be related to a parent, but has different levels of expectancy. Later work incorporating other frameworks, including the Transactional Model of Development (Sameroff & Fiese, 2000) and the Ecological and Dynamic Model of Transition (Rimm-Kaufman & Pianta, 2000). There have been many proposed patterns of teacher-child relationships, which include measuring the degree of warmth/security, conflict/negativity, and dependency (Mantzipoulous, 2005). Choi and Dobbs-Oates (2016) found teacher-child closeness and conflict to be distinct dimensions of teacher-child relationships that may be formed through different processes. As a result, researchers have begun to explore a wide variety of factors within the relationship, as well as examining the relationship between teachers and students through dyadic and class-wide observations and measures. Teacher-child relational conflict was significant, even when accounting for other teacher and child variables (Mantzicopoulous, 2005). Due to the majority of teacher-child relationship research focusing on the degree of closeness and conflict, a positive teacher-child relationship will be defined as having lower levels of conflict and higher levels of closeness.

Importance of Teacher–Child Relationship

The quality of the teacher-child relationship has been shown to be demonstrative of several other areas affecting a child's future academic and behavioral outcomes. Negative teacher-child relationships are risk factors for later academic success and attitude towards school (Pianta, 1999; Silva et al., 2011). Teacher-child relationships were significantly related to preschoolers' academic readiness for kindergarten and were partially mediated by problem behavior and social status (Palermo, Hanish, Martin, Fabes, & Reiser, 2007). Teacher-child relationships in early childhood correlate with early school adjustment, which may impact future behavior and relationships of students (Palermo et al., 2007). These have not been shown to be true for other measures of teacher quality. Across seven studies of preschool teachers, researchers did not find evidence supporting a relationship between the quality of the classroom, teacher educational attainment, or academic gains for the child (Early et al., 2007). Early teacher-child relationships are unique predictors of academic and behavioral outcomes in early elementary through eighth grade, with negative teacher-child relationships significantly predicting disciplinary performance in upper elementary and middle school grades, even when controlling for several demographic factors (Hamre & Pianta, 2001). Findings indicated that the teacher-child relationship predicts school attitudes and while controlling for effects from sex, ethnicity, and intervention status, the relationship between effortful control and school attitudes is mediated by the quality of the student-teacher relationship (Silva et al., 2011).

Factors that Affect Teacher–Child Relationship

Teacher Characteristics

Within the teacher-child relationship, many teacher factors have been studied as to how they impact the relationship with students. Stress within their position has often been cited as a

source of strain in the profession. Teachers who reported having difficulty with their teaching assignment had more relational conflict with their students (Mantzicopoulous, 2005). Teacher-child conflict was reported to be lower when preschool teachers had more opportunities to participate in activities aimed at transitioning their students from preschool to kindergarten, such as parent-teacher conference meetings and trainings on how to better prepare students for kindergarten (Mantzicopoulous, 2005). Teachers who reported having a high level of classroom organizational skills were positively related to children's self-regulation and positive teacher-child interactions (Yildiz, Kara, Tanribuyurdu, & Gonen, 2014). In contrast, other researchers have found no association was found between teacher reported classroom climate and child-reported teacher conflict (Mantzicopoulous, 2005).

Teachers with a higher educational attainment, having at least a bachelor's degree or above reported having a similar level of closeness to both boys and girls, whereas teachers with a lower level of educational attainment reported having higher closeness to girls than boys (Choi & Dobbs-Oates, 2016). One of the factors that may contribute to conflict is the teacher's view on discipline. Discipline was found to be a significant contributor to the conflict within teacher-child relationship (Kesner, 1999). Teachers' child-centered beliefs have not been found to significantly impact the teacher-child relationship or academic achievement, but were found to impact the child's behavioral self-regulation (Hur, Buettner, & Jeon, 2014). Teachers reported having closer relationships with children with higher math achievement. They reported having more conflict with children who attended preschool more regularly and a closer relationship with children with attended school less regularly (Choi & Dobbs-Oates, 2016).

Child Characteristics

A combination of child and teacher attributes plays a significant role in the relationships between the two. Characteristics of the child have been studied more in-depth, with some attributes being more emphasized than others. Children with lower levels of inhibitory control had higher levels of conflict with teachers. These self-regulation skills, which were partially mediated by inattentive and aggressive behaviors, can lead to higher rates of teacher-child conflict (Berry, 2011). Children with better school achievement tended to report less teacher-child conflict (Mantzicopoulous, 2005).

As students get older, those with higher developmental levels of inattention as preschoolers had more conflicted relationships with teachers in later grades; however, in later elementary grades only girls continued to have a relation between teacher-child conflict and their inhibitory control levels (Berry, 2011). The relationship between effortful control and children's school attitudes was mediated by the quality of the teacher-child relationship (Silva et al., 2011).

Relationships between teachers and children are dynamic and cannot be simply characterized as positive or negative. Shy children less likely to have close relationships with their teachers and less shy children were more likely to have relationships higher in conflict and closeness (Rudasil & Rimm-Kaufman, 2009). There is typically a more transactional relationship between teacher and child, with prosocial behavior leading to closer teacher-child bonds (Palermo, Hanish, Martin, Fabes, & Resier, 2007). Children who have more warm, close teacher-child relationships tend to have fewer behavioral problems and more academic success (Hamre & Pianta, 2001). Behavior problems were significantly related to work-habit ratings and disciplinary infractions of children in later grades (Hamre & Pianta, 2001).

Researchers suggested that the teachers' perceptions of conflict may have been influenced by individual characteristics of each child, while teacher–child closeness may reflect more on the teacher-driven effects indicating classroom-level teacher's efforts to form close relationships with all students (Cadima et al., 2015). In research conducted on low-income preschool students from Texas and Florida, findings indicated that child characteristics predict the quality of children's relationships with their teachers.

There have been mixed findings regarding how gender has a role in the relationship that teachers have with their students. Some results support that gender may be impacted due teaching being a field with more female teachers than males (Spilt, Koomen, & Jak, 2012). Gender match has been shown to contribute to relationship closeness, with teachers often reporting a closer relationship with female students (Choi & Dobbs-Oates, 2016). This link may be changing as the teaching profession becomes more diverse.

Additional research supporting gender differences in behavior has found that girls typically engage in fewer externalizing problems than males, which require less discipline (Spilt, Koomen, & Jak, 2012). Both male and female teacher reported have more conflicted relationships with boys (Spilt, Koomen, & 2012). Researchers have found that boys were more likely to have conflictual relationships with their teachers, whereas girls were more likely to have close relationships (Rudasil and Rimm-Kaufman, 2009; Koles, O'Connor, & Collins, 2013). Similarly, boys were also found to be more at-risk for negative teacher-child relationships. Girls also tend to engage in more behaviors such as assisting with tasks and participating in lessons that are viewed as "teacher-pleasing" (Hamre, Hatfield, Pianta, & Jamil, 2014).

In contrast, Mantzicopoulous (2005) found that sex was not significantly related to teacher-child conflict and proposed that differences in the impact of gender on these

relationships may be due to the variety of assessment methods utilized by researchers. In regard to conflict in teacher-child relationships, no difference between male and female students were found in a study by Choi and Dobbs-Oates (2016).

Culture

Similar results of American children have been found in European studies. Belgian children having a decreased level of closeness with their teacher as the level of conflict increased and Portuguese teachers reported having closer relationships with children when they had smaller class sizes (Cadima et al., 2015). Between American and Hungarian samples of preschool-age children, there were no significant differences in regard to the nature of the teacher-child relationship (Koles, O'Connor, & Collins, 2013).

Other international studies have indicated that social competence was predicted by teacher–child relationships as early as three months after entry into preschool (Zhang & Nurmi, 2012). Results of Chinese preschoors indicate that demographic variables did not have any influence on the teacher-child relationship, which may be explained by a more homogenous population (Zhang & Nurmi, 2012). In contrast, a study of Chinese-American immigrant children, teachers perceived less intimate relationships with children from higher income families than lower income students, due to their lower level of dependency on academic resources within the school (Ly, Zhou, Chu, & Chen, 2012). In a study of Japanese children with intellectual disability, the teachers' reported feelings and perceptions of each child were directed related to the teacher-child interactions, with child whose emotions and motivations that were easier to understand contributing to a positive relationship with the child (Matsushima & Kato, 2015).

Other cultural factors may also play a role in the teacher-student relationship, as ethnicity has been shown to be a factor in contributing to the relationship between the teacher and child. Kesner (2000) found that teachers viewed their relationships with children of other ethnicities differently than children of the same ethnicity as them. Teachers also viewed these relationships as more dependent than relationships with children with the same ethnic match. When the ethnicity of the teacher and the child do not match, there has been evidence to support that the relationships have more conflict. Saft and Pianta (2001) reported that teachers tended to view children with an ethnicity that matched them in a more positive light; however, ethnicity does not predict positive student-teacher relationships. If there are problems within the relationship, ethnicity magnifies it and may contribute to more conflict. Contrary to these findings, Choi and Dobbs-Oates (2014) did not find teacher-child ethnic match to be associated with teacher-child relationships. In summary, a number of factors related to personal characteristics and demographics influence teacher-child interactions.

Parent-Child Relationship

According to the Center on the Developing Child at Harvard University, having one supportive and committed relationship between a child and a parent or caregiver is the single most common factor for developing resiliency (Center on the Developing Child at Harvard University, 2016). This relationship is crucial for child development, especially when considering the various factors that can have a negative impact. Effects of poverty and disadvantaged environments are not simply reversed by a child being in a preschool program. Interventions and cumulative efforts are necessary to make substantial changes in the lives of children (US Senate, 2015).

Importance of Parent-Child Relationship

Attachment theory is the primary theoretical framework for all caregiver-child interventions (Vu, Hustedt, Pinder, & Han, 2015). Having a safe and secure bond with a parent has substantial impacts on later outcomes (Bretherton, 1992). Research reviewing longitudinal studies indicated that emotional regulation and coping with stress were related to attachment and the parent-child bond (Zimmer-Gembeck et al., 2017). Parent-child interventions, such as Parent-Child Interaction Therapy, report significantly improved relations between parents and their children (Thomas and Zimmer-Gembeck 2007). While parent-child interventions had marked improvements in the parent-child relationship, "the interventions did not explore the critical elements of the emotional bond between parent and child nor did they assess relationship outcomes" (O'Connor et al., 2017, p. 419).

Both parents and teachers are important figures to a child's social and emotional development. Bonds between teachers and children in early childhood can be strong due to the long periods of time spent with the caregivers. According to a literature review on parent-child relationships, few interventions in early childhood focusing on improving parent-child relationships have been studied (O'Connor et al., 2017). More interventions have been developed for older children (O'Connor et al., 2017). Additionally, there have been few studies studying parenting in low-income Latino preschoolers and other cultural groups (Martí, Bonillo, Jané, Fisher, & Duch, 2016).

Factors that Affect Parent-Child Relationship

Parent Characteristics

Across cultures, parents play an important role for the child's success both at home and within the classroom. Family values can reduce conflict within the classroom (Riojas-Cortez &

Flores, 2009). Latino parents provide important scaffolding for social development and communication between teachers and parents is important for improving school readiness (Riojas-Cortez & Flores, 2009). In Russia, rural families have reported lower levels of parental competence (Gur'ianova, 2013).

Dishion et al. (2017) posited that conflict is an important part of the relationship between a parent and child, which is related to problem behavior at home and school. Researchers used the Relationship Affect Coding System to predict problem behavior from early childhood to adolescence and found positive engagement and conflict from earlier years was related to later conflict in adolescence (Dishion et al., 2017). Martí, Bonillo, Jané, Fisher, and Duch (2016) found that maternal conflict was significantly positively related to child externalizing problem behavior. Higher maternal corporal punishment is associated with more behavioral problems (Ma & Grogan-Kaylor, 2017), which is also true across various cultural groups (Lansford et al., 2007). The closeness and conflict in a parental relationship is significantly related to social competence, indicating that these relationships affect broader social and emotional skills (Martí et al., 2016).Children with a more sensitive and secure relationship with their mother have more harmonious interactions with their mother, displaying prosocial behaviors. These relationships may be related to more attached relationships that children make as they grow (Posada et al., 2016). Maternal closeness had a significant, positive relationship with child's social competence (Martí et al., 2016). Ratings by both mothers and fathers of closeness are stable during early childhood, with consistent ratings for both mother and father (Driscoll & Pianta, 2011). The maternal relationship mediated the relationship between social competence and externalizing behavior, supporting evidence that this relationship plays a critical role in children's social competence and self-regulation development (Martí et al., 2016). Additionally, maternal

sensitivity and security in the relationship they have with their 4 year-old children was found to be important across Colombian, Peruvian, Mexican, and American cultural samples (Posada et al., 2016).

Being able to model and apply self-regulatory strategies to their own children increases the child's likelihood for responding appropriately to adverse stimuli (Sanders & Mazzucchelli, 2013). Self-regulatory skills are built during early childhood and are the foundation for self-regulatory capacity in adulthood. It is important to note that parents may pass on their genetic vulnerability for poor self-regulation skills to their children, which parents may need intervention aimed at improving their self-regulation skills (Williams, 2017). Parental hostility was associated with poorer self-regulation skills for children ages 2-3 years. When these children's self-regulation skills were measured years later, children with better self-regulation skills had more prosocial behavior (Williams, 2017). Family interventions may help in improving parental modeling of appropriate self-regulatory and social competency skills (Sanders & Mazzucchelli, 2013).

Child Characteristics

Of the important aspects examined in the parent-child relationship, closeness between the parent and the child, as well as the teacher and the child were important to parents (Rautamies, Poikonen, Vähäsantanen, & Laakso, 2016). In a longitudinal study, results for children ages 6-7 years indicated that parental warmth and hostility were associated with prosocial behavior, but these results were mediated by emotional regulation (Williams, 2017). Measuring some degree closeness and conflict are important indicators in the parent-child relationship (Driscoll & Pianta, 2011).

Mixed findings have been noted in the research regarding child sex and parent-child relationships. While Williams (2017), found no gender differences between self-regulation and prosocial behavior in children, sex of the child was significantly correlated with social competence and externalizing behavior in other studies (Martí et al., 2016). Female children develop behavioral self-regulation earlier than males, noting that males may need additional support for developing necessary skills before entering kindergarten (Montroy, Bowles, Skibbe, McClelland, & Morrison, 2016).

Regardless of sex, children with higher self-regulatory skills are more likely to respond in a more pro-social, socially competent manner than children with lower skill levels (Williams, 2017). When self-regulation was measured with social competence in Sharkins, Leger, and Ernest (2017), behavioral self-regulation was found to comprise 87% of social-emotional component of social-emotional competence. In cases where children had difficulty self-regulating, problem behavior was tied to a negative view from the parents' perspective on the teacher-child relationship (Rautamies, Poikonen, Vähäsantanen, & Laakso, 2016). There is a period of rapid development of behavioral self-regulation in preschool, with this continuing in kindergarten and the need for further behavioral supports (Montroy, Bowles, Skibbe, McClelland, & Morrison, 2016).

As a part of intervention with both the child and the parent, home visiting interventions have become increasingly important. In the United States alone, it is estimated that between 400,000 and 500,000 families receive home visiting services annually (Paulsell, 2012). Home visiting programs have different expectations across cultures, indicating that parental relationships and outcomes measured may vary as well. The characteristics of parental relationships between Western and Eastern cultures may vary in importance (Lamorey, 2017).

Latino children are more likely to experience mental health related issues than their non-Latino peers, indicating that those in rural emerging Latino communities need additional home visiting and school-based intervention supports for both the parent and child (Villalba, Ivers, & Ohlms, 2010).

Summary

There have been several studies that have explored mediation including the variables of self-regulation, social competence, and teacher-child relationship. Self-regulation has been tied to academic and behavioral problems in early childhood, which can have an increasingly detrimental effect as child grow (Helle et al., 2013; Sawyer et al., 2015). It has been linked to developing socially adaptive skills (Liew, Johnson, Smith, & Thoemmes, 2011), as well as teacher-child relationships.

Evidence of this relation has shown that teacher-child relationships have been found to mediate a mental health intervention's effects on children's self-regulatory skills (Jones, Bub, & Raver, 2013). Likewise, students who have more difficulty regulating their emotions have less emotionally supportive relationships with their teachers (Ahnert, Harwardt-Heinecke, Kappler, Eckstein-Madry, & Milatz, 2012). Social skills and problem behaviors have been found to separately mediate the relationship between self-regulation and literacy growth (Montroy, Bowles, Skibbe, & Foster, 2014). In contrast, aggressive and negative emotionality was not found to mediate the relationship between executive function and social skills (Denham, Bassett, Sirotkin, Brown & Morris, 2012). While self-regulation and behavior problems were found to mediate the relationship between child intellectual disability and teacher-child relationship quality (Eisenhower, Baker, & Blacher, 2007), there has not been a mediation mechanism to

explain the relationship between the components of self-regulation, social competence, and teacher-child relationships.

Children who display more problem behaviors have been shown to have more negative teacher-child relationships (Miller et al., 2004). Similarly, children with higher behavioral self-regulation have been found to have higher social skills, which may be related to how much positive social interaction they have with their teacher (Montroy, Bowles, Skibbe, & Foster, 2014). Emotional regulation was found to be positively associated to social competence and negatively to behavioral problems, after controlling for the child's level of emotional knowledge (Maggio, Zappulla, & Pace, 2016). With more evidence to support the effect of teacher-child relationships on social competence, more targeted interventions can be developed to promote better teacher-student relationships for children with emotional and behavioral difficulties. Positive engagement with teachers results in gains in compliance, emotional regulatory skills, and less dysregulation (Willliford, Whittaker, Vitiello, & Downer 2013).

There is a need for continued research on at-risk populations, especially those in areas that have less access to assistance programs and mental health services. Research on self-regulation and teacher-child relationships with low-income preschoolers has been primarily in urban areas (Caraher, 2011; Willigord, Whittaker, Vitiello, & Downer, 2013). As research has shown that children in rural areas demonstrate less self-control behavior and more attachment to their parents than their urban counterparts, the relationship between rural teacher-child relationships and self-regulation has yet to be explored (Bender et al., 2011). Similarly, research on social competence has suffered due to the lack of a consistent definition and its link to self-regulation and teacher-child relationships has not been delineated (Cook & Oliver, 2011). Parent-child relationships have demonstrated links between social competence, self-regulation,

and teacher-child relationships, but has not be researched fully in rural early childhood populations (Driscoll & Pianta, 2011; Martí et al., 2016; Rautamies et al., 2016).

Within this study, self-regulation was defined similarly to Sawyer et al. (2015) as a children's ability to control emotions and inhibit response, while responding appropriately to environmental stimuli. Social competence was defined by the expression of prosocial behaviors (e.g., social skills) and demonstration of fewer problem behaviors including internalizing and/or externalizing. Teacher-child relationships were characterized by the degree of conflict and closeness within the relationship, as have been defined frequently in literature (Choi & Dobbs-Oates, 2016). Lastly, parent-child relationships were characterized by the degree of conflict and closeness within the relationship, as measured by Driscoll and Pianta (2011).

Purpose of the Current Study

For the purpose of this study, it is hypothesized that the relationship between self-regulation and social competence will be mediated by the teacher-child relationship. According to previous research studies, a link between self-regulation and social competence has been supported (Monopoli & Kingston, 2012; Spinrad et al., 2006). Due to the importance of attachment in healthy child development and the amount of time that a teacher spends with their students each day, it is hypothesized that this relationship assists in fostering growth in social skills and decreasing problem behaviors, the two important parts of social competence. This factor may mediate the relationship between self-regulation and social competence, as attachment in teacher-child relationships in rural preschoolers may be more important than for urban preschoolers.

CHAPTER III

METHODS

The following chapter has been organized with the following sections: research design, participants, data collection, instrumentation, and data analysis.

Research Design

This quantitative study used a non-experimental design analyzing the relationship between self-regulation, behavior, and students' relationships with their teachers and parents. The study was observational as parents of students filled out the forms on a voluntary basis and the variables were not directly manipulated. The purpose of the study was to analyze relations between the variables to test the model, as well as the mediation effects that variables may have upon another.

Participants

Parents and caregivers of approximately 420 students were invited to participate in the research study from seven different Head Start centers in the Head Start program organized by a community action agency. There were 120 participants who returned research materials; however, 34 of these participants were excluded from analyses due to not completing one or more of the questionnaires and/or not signing the research consent forms. As a result, 86 research participants were included in the final analyses.

The sample included 71% English-speaking participants (61) and 29% Spanish-speaking participants (25). More participants were males 60% (52) than female 40% (34). The mean age of a child participant in the sample was 4.33 years, with students from rural centers averaging a younger age (4.08 years) than suburban students (4.89 years). The sample identified as

ethnically diverse, with 51% of participants identifying as Hispanic/Latino, 30% as Black/African-American, 13% as White/European-American, and 6% as Multi-Racial. Demographic information was gathered from a previously conducted research study on Speed DIAL-4 data (Meek, Lomax, & Simmons, 2017). There were 22 teachers who participated in the research study, all of whom identified as female. Additional demographic data was not collected on the teacher participants.

Table 1

Comparison of Mean Age by Sex and Location

Groups	Mean Age (SD) in Years
Males	4.29 (.58)
Females	4.37 (.56)
Rural	4.08 (.41)
Suburban	4.89 (.50)
Mean Total	4.33 (.57)

The distribution of participants from the centers is detailed in Table 2. Approximately 70% of the sample was from rural centers and 30% from suburban centers.

Table 2

Number of Participants and Percentage of Sample by Location

Location	**Number of participants**	**Percentage of sample**
Rural	60	70
Suburban	26	30
Center 1	11	13
Center 2	15	17
Center 3	11	13
Center 4	11	13
Center 5	27	31
Center 6	5	6
Center 7	6	7

The Speed DIAL-4 (Mardell & Goldenberg, 2011) is an abbreviated version of the full DIAL-4 test (Developmental Indicators of Indicators for the Assessment of Learning, Fourth Edition). Results of this assessment indicated that the mean score on the Speed DIAL-4 was a 15.61 (SD=7.38), with a range of scores from 2 to 32. While a score of 15.61 is considered within the average range for students in the Head Start program that participated in the study, it is a below average score for children 3.5 years and older in a national normative sample (Mardell & Goldenberg, 2011).

Table 3

Mean Values for Sex, Language, and Location

	Speed DIAL-4 Group Means (SD)
Males	14.65 (7.18)
Females	17.05 (7.77)
English	16.03 (7.77)
Spanish	14.56 (6.52)
Rural	14.13 (6.82)
Suburban	19.00 (7.77)
Mean Total	15.61 (7.42)

The community demographics of each center were gathered based on the county in which each center is located. To be enrolled at a participating Head Start center, the family must provide proof of residing within the county limits. The population per square mile was used as an indicator of population density, indicating which students resided in rural and suburban areas. Differences in poverty levels, median household income, population, and percentage of children under the age of 5 are listed in Table 4 and Table 5 below (U.S. Census Bureau, 2016).

Table 4

Population Statistics by Area

Geographic Area	Total Population Estimate (July 1, 2015)	Population per square mile (2010)	Percentage of persons under age 5 (July 1, 2015)
County 1 Texas	83,260	1,715.8	8.3
County 2 Texas	27,671	33.8	5.7
County 3 Texas	17,299	15.7	6.5
County 4 Texas	13,987	29.3	5.6
County 5 Texas	16,751	19.4	6.6
County 6 Texas	35,056	55.8	6.0

Table 5

Income and Poverty Statistics by Area

Geographic Area	Median Household Income (in 2015 dollars) 2011-2015	Percentage of persons in poverty 2011-2015
County 1 Texas	$40,312	24.8
County 2 Texas	$46,195	17.8
County 3 Texas	$49,802	13.8
County 4 Texas	$39,390	19.2
County 5 Texas	$46,501	16.6
County 6 Texas	$51,269	14.5

Procedures

The research study was proposed to and approved by the Head Start Policy Council in November 2016. The Head Start Policy Council consisted of a board of elected Head Start parents and caregivers represented each of the centers who review the operation of the participating Head Start program. Additionally, a signed letter of authorization to conduct research was obtained from the Head Start Program Director. The research study was approved by the Texas A&M University Institutional Review Board in March 2017. Data collection was conducted in April 2017.

All parents and caregivers received a manila envelope in their child's folder with the consent form and questionnaires inside. Participants were given forms in their primary language spoken at home (English or Spanish). An incentive for those who chose to participate was the chance of being randomly selected to win an electronic tablet. The questionnaires took approximately 15 minutes for the parents and caregivers to complete. Those who decided to participate completed the forms and returned the packets to a box in the director's office of their Head Start center. The data was collected from the parents and caregivers during April 2017. The teachers were given a consent form and questionnaires for the families who had decided to participate in the research study. An incentive for those who chose to participate was also the chance of being randomly selected to win an electronic tablet.

At the conclusion of data gathering, data were entered into an electronic database by the investigator. Incomplete packets from participants were not entered into the database. Anonymous, unique identification numbers were given to the participants for confidentiality purposes. Data collected from the Speed DIAL-4 data collected in Fall 2016 was added to the present data set. Consent for using this data was obtained during the consent process. All data

materials included completed questionnaires and consent forms were stored in a locked cabinet accessible only to the principal investigator and protocol director. All electronic data information was password protected and given to the principal investigator on a flash storage drive.

Instrumentation

Preschool and Kindergarten Behavior Scales

The Preschool and Kindergarten Behavior Scales (PKBS) is a behavior rating scale that is appropriate for children 3-6 years (Merrell, 2002). The PKBS is comprised of 76 items with two composite scales: Problem Behaviors and Social Skills. Problem Behaviors has two subscales: Internalizing Problems and Externalizing Problems. The Social Skills scale is comprised of Social Cooperation, Social Independence, and Social Interaction. The composite scales were the most robust and were used for comparison with other variables. The PKBS was the measure of social competence due to the inclusion of both scales that measure social skills and those that are aimed at problem behaviors. In order to obtain more information in regard to the child's behaviors at home and school, measures from both teacher and parent will be utilized.

The PKBS has some limitations in regard to the norming population, with most of the children being from the Western United States and with more children with parents in occupations typically associated with higher socio-economic status. These differences make the norms different than this Head Start population, as the children live in the Southwestern United States with a lower socio-economic status that is underrepresented in the norming sample. The PKBS has some psychometric limitations, however researchers have used it in research studies and as a screener for determining if children may be at-risk for developing behavioral or social problems (Allin, 2004).

Child-Parent Relationship Scale

The parent-child relationship has been studied thoroughly by many researchers. The use of measures of parent-child relationships has been documented to aid in predicting important outcomes for children including identifying children who are at-risk for school adjustment problems and those in need of a special education referral (Pianta, Erickson, Wagner, Kreutzer, & Egeland, 1990; Pianta & Harbers, 1996). Measures have also aided in identifying children who are at-risk for developing relationships difficulties with peers in school (Wood, 2007). Sroufe (1997) found that attachment security within the parent-child relationship influenced a child's self-esteem, social competence, prosocial behavior, ego resiliency, and overall adjustment later in life.

Much of the research on the relationship between the mother and the child has been explored; however, due to the diverse caregivers that represent the Head Start student population, this was not feasible (Driscoll & Pianta, 2011; Georgiou & Fanti, 2014). Sex of parent and sex of child could not be compared for statistical purposes as research cites mothers and fathers, but many of those completing the questionnaires were neither mothers nor fathers of the child.

Due to having the same theoretical background as the Student-Teacher Relationship Scale, this scale was chosen as a suitable comparison. It contains the same scales, closeness and conflict, which can be used for comparison purposes. Derived from the student-teacher relationship scale, which is based on attachment theory. The CPRS short form was used in the present study, with 15 questions, which were loaded on the Conflict and Closeness scales.

Student-Teacher Relationship Scale

The most widely used instrument to measure teacher-child relationships is the Student Teacher Relationship Scale (STRS; Solheim et al., 2012). There are three scales on the STRS:

closeness, conflict, and dependency. It was developed by Pianta and Nimetz (1989) and based on attachment theory from parent-child relationships. Younger children tend to have closer relationships with their teachers than older children, which indicate that the closeness scale is more relevant in the preschool population.

Research has shown a three-factor model with acceptable fit for boys and girls and acceptable concurrent validity in a Norwegian sample (Solheim et al., 2012). Some more work needed on the dependency scale noted in both Norwegian sample and Dutch sample (Solheim et al., 2012; Doumen et al., 2009). As a result of the less substantiated evidence of the dependency scale, the closeness and conflict scales were chosen for my measure of teacher-child relationships. Discriminant validity was found between the closeness and conflict scale. Some items have been noted to have some poor psychometric properties (Solheim et al, 2012). As a result, these items were evaluated following data analyses in order to determine the how viable they are at contributing to the scores on the closeness and conflict scales. The STRS short form (which is recommended by Hamre and Pianta, 2001) was used in the present study, with 15 questions, which loaded on the Conflict and Closeness scales.

Child Behavior Questionnaire

The Child Behavior Questionnaire (CBQ) is a caregiver-report measure that assesses child temperament (Rothbart, Ahadi, Hershey, & Fisher, 2001) The CBQ is a theory-derived measure in which attentional self-regulation is viewed as a "basic dimension of temperament" (Rothbart, Ahadi, Hershey, & Fisher, 2001; p. 1395,). It is used to measure the individual differences in reactivity and self-regulation. Scale development of this measure was conducted on children ages 3-7, which is appropriate for use in the Head Start sample. The CBQ demonstrates adequate internal consistency, with high longitudinal stability in the ratings of

parents over time (Rothbart, Ahadi, Hershey, & Fisher, 2001; Putnam & Rothbart, 2006). The Attentional Focusing scale has been noted as being less reliable when used in cross-cultural studies with populations outside of the United States (Ahadi et al., 1993).

The scales used to measure self-regulation from the CBQ will be the Inhibitory Control, Impulsivity, and Attentional Focusing scales. The Inhibitory Control scale is defined as, "the capacity to plan and to suppress inappropriate approach responses under instructions or in novel or uncertain situations" (Rothbart et al., 2001, p. 1406). Impulsivity is defined as, "speed of response initiation" and Attentional Focusing is defined as a, "tendency to maintain attentional focus upon task-related channels" (Rothbart et al., 2001, p. 1406). The CBQ Short Form, with 98 questions, was used in the present study in order to reduce the number of questions needed for participants to complete.

Speed DIAL-4 (Mardell & Goldberg, 2011)

Students enrolled in the participating Head Start centers were also administered the Speed DIAL-4 (Mardell & Goldenberg, 2011) in accordance with the requirements of §45 CFR 1308, regarding the administration of a standardized screening instrument for global development. The Speed DIAL-4 is a shortened version of the Developmental Indicators for the Assessment of Learning (DIAL) and is a screening instrument designed to identify children ages 2 years, 6 months through 5 years, 11 months who may be at risk for academic failure (Mardell & Goldenberg, 2011). The Speed DIAL-4 is administered to children in English or Spanish within 45 days of the student's entry into the program. Items on the Speed DIAL-4 briefly assess a child's gross and fine motor skills, processing speed, knowledge of body parts, color identification, speech articulation, counting knowledge, expressive and receptive language skills,

alphabet knowledge, and reasoning skills. Overall scores from the Speed DIAL-4 will be used as an indicator of school readiness and overall development.

Data Analysis

Descriptive statistics, tests of normality, and regression analyses were analyzed using the SPSS package 23.0. ANOVA analysis was used to test the hypotheses. For the purpose of this study, the R-square value and p-value were examined to determine the significance of the relationship between independent and dependent variable. R-square is the difference between participants of a study divided by the difference among participants in said study. The alpha was set at <.05 and anything less than that was determined to be statistically significant. While the alpha of <.05 may indicate statistical significance, it does not indicate that the results are meaningful (Thompson, 1998).

Tests for normality on the data set were conducted and determined it to be a population with a normal distribution of data based on Speed DIAL-4 scores. The sample was found to have a skewness of (.15), with a standard deviation of (.26) and a kurtosis of (-.74), with a standard deviation of (.51). The planned analyses included descriptive statistics, tests of normality, and linear regression. Based on the results of the linear regression, mediation analyses were not conducted. Other skewness and kurtosis analyses based on other variables are described in the table.

Missing Data

There was a very small portion of missing data in the completed data packets, with 99.97% of questions being completed by participants. This was found to be acceptable for conducting the proposed statistical analyses. Packets that were missing a full form were eliminated from the data pool. Incomplete data were entered as a (0), which was the equivalent

to not sure/ does not apply on all measures. Further statistical analyses to evaluate missing data were not necessary for the sample in the present study.

Returnee Effects

It should be noted that some of the students in the data set may have been enrolled in the Head Start program previously. Only two of the Head Start centers offer services for students for more than one year. The researchers in the present study did not examine if the students in the present study had participated in the Head Start program the previous year. This may have affected the relationship that they may have with teachers in the program, for better or worse, and it also may have had an impact on their developmental achievement scores on the Speed DIAL-4. Further research on returnee effects may be necessary to examine how this may affect several outcomes in this research.

CHAPTER IV

RESULTS

The current study was undertaken to examine the relation between variables of self-regulation, social competence, teacher-child relationships, and parent-child relationships in rural and suburban Head Start programs. The hypotheses supposed that self-regulation might be a predictor of problem behaviors, social skills, and social competence overall, as measured by problem behaviors and social skills. Additionally, it was supposed that self-regulation might be used to predict teacher-child relationships, problem behaviors, social skills, and social competence overall. It was hypothesized that teacher-child relationships mediate the relationship between self-regulation and social competence and there would be differences in regard to these relationships when you account for sex, age, population density, or English Language Learner status. Furthermore, it was hypothesized that self-regulation could predict parent-child relationships and that parent-child relationships could predict problem behaviors and social skills. Results will be presented by research question.

Self-Regulation and Child Behavior

The first research question examined the extent to which self-regulation predicted problem behaviors, social skills, and social competence overall, as measured by problem behaviors and social skills. It was hypothesized that children with a higher ability to self-regulate will have fewer reported problem behaviors and more reported social skills. The scales used to measure self-regulation were the Attentional Focusing, Impulsivity, and Inhibitory Control scales from the Child Behavior Questionnaire. These scales were chosen because they are frequently cited and used as a measurement of self-regulation in similar research studies

(Rothbart et al., 2001). The Problem Behavior Composite scale from the Preschool and Kindergarten Behavior Scales (PKBS) was used as a measure of Problem Behavior.

To test the prediction, we conducted standard Analysis of Variance (ANOVA) for each of the hypotheses tested. As can be seen in Table 6, the combinations of factors from the CBQ were significant. Attentional Focusing ($p<.01$) and Inhibitory Control ($p<.01$) were significant predictors for the PKBS Problem Behavior Composite: however Impulsivity was not a significant predictor ($p<.63$). The *R* square value (R^2) = .26, which is considered an adequate *R* square among research in this area (Allan, Lonigan, & Wilson, 2013).

Table 6

Multiple Regression Analyses for Self-Regulation to PKBS Problem Behaviors

Variable	Problem Behaviors		
	B	*t-statistic*	*p*
Constant	132.88	13.39	.000
Attentional Focusing	-4.65	-2.92	.01*
Inhibitory Control	-3.88	-2.78	.01*
Impulsivity	.77	.49	.63
R^2	.26		
F	9.83		

Notes. *Significance at the $p<.05$ level. PKBS = Preschool Kindergarten Behavior Scales, CBQ = Child Behavior Questionnaire

The Social Skills Composite scale of the PKBS was used as a measure of social skills. Attentional Focusing (p<.02) and Inhibitory Control (p<.002) were significant predictors for the PKBS Social Skills Composite. Impulsivity was not a significant predictor (p<.13). The R^2 = .28, which is considered an adequate R^2 among research in this area (Allan et al., 2013).

Table 7

Multiple Regression Analyses for Self-Regulation to PKBS Social Skills

Variable	Social Skills		
	B	*t-statistic*	*p*
Constant	56.41	5.99	.000
Attentional Focusing	3.49	2.31	.02*
Inhibitory Control	4.27	3.24	.00*
Impulsivity	2.27	1.52	.13
R^2	.28		
F	10.40		

Notes. *Significance at the p<.05 level.

Only part of the relationship between self-regulation and social competence was explained by the variables used in the present study. Overall, Attentional Focusing and Inhibitory Control were found to be significant predictors for Problem Behaviors and Social Skills.

Self-Regulation and Teacher-Child Relationship

The questions asked whether self-regulation predicted teacher-child relationships. It was hypothesized that children with a higher ability to self-regulate will have a better relationship with their teacher. The relationship between the teacher and child was evaluated based on the previously used scales for self-regulation, Attentional Focusing, Impulsivity, and Inhibitory Control from the Child Behavior Questionnaire in addition to the Closeness and Conflict scales on the Student-Teacher Relationship Scale. When evaluating the relationship between self-regulation and teacher-child on the Closeness scale, Attentional Focusing approached significance ($p<.06$) while Impulsivity ($p<.17$), and Inhibitory Control ($p<.40$) were not significant predictors. The R^2 value was .054, further indicating that the relationship between these factors was not strong.

Table 8

Multiple Regression Analyses for Self-Regulation to Closeness

Variable	Closeness		
	B	*t-statistic*	*p*
Constant	31.12	8.67	.00
Attentional Focusing	1.11	1.92	.06
Inhibitory Control	-.43	-.85	.40
Impulsivity	-.79	-1.39	.17
R^2	.05		
F	1.56		

Notes. *Significance at the $p<.05$ level.

When evaluating the relationship between self-regulation and the Conflict scale from the Self-regulation Student-Teacher Relationship Scale, Impulsivity approached significance ($p<.05$), while Attentional Focusing ($p<.97$) and Inhibitory Control ($p<.70$) were not significant predictors. A low R^2 of (.05) also indicated a weak relationship between self-regulation and conflict in the teacher-child relationship. Overall, self-regulation was not found to be linked to the teacher-child relationship in regard to the degree of closeness or conflict.

Table 9

Multiple Regression Analyses for Self-Regulation to Conflict

Variable	Conflict		
	B	*t-statistic*	*p*
Constant	43.92	8.14	.00
Attentional Focusing	-.04	-.04	.97
Inhibitory Control	-.29	-.39	.70
Impulsivity	-1.68	-1.97	.05*
R^2	.05		
F	1.40		

Notes. *Significance at the $p<.05$ level.

Effects of Teacher –Child Relationship

Further, the variables of teacher-child relationships were examined to determine if they predicted problem behaviors, social skills, or social competence overall. It was hypothesized that children with a more positive teacher-child relationship would have fewer reported problem behaviors and more social skills. The Conflict and Closeness scales of the Student-Teacher Relationship Scale were found to not be significant predictors for the Social Skills Composite Scale, with *p*-values of (.448) and (.69) respectively. The R^2 value was found to be (.01).

Table 10

Multiple Regression Analyses for Teacher-Child Relationship to Social Skills

Variable	Social Skills		
	B	*t-statistic*	*p*
Constant	98.18	8.94	.00
Closeness	.27	.76	.45
Conflict	-.10	-.40	.69
R^2	.01		
F	.29		

Notes. *Significance at the $p<.05$ level.

Additionally, the Closeness scale was found to not be a significant predictor, ($p<.57$), for the Problem Behavior Composite scale. The Conflict scale was significant, ($p<.05$), but the *R* square value (.07) further indicated a weak relationship between these predictors and the

Problem Behavior outcome. Overall, the Student-Teacher Relationship Scale was not a good indicator of the Social Skills or Problem Behavior measures in the sample.

Table 11

Multiple Regression Analyses for Teacher-Child Relationship to Problem Behavior

Variable	Problem Behavior		
	B	*t-statistic*	*p*
Constant	118.87	10	.00
Closeness	-.21	-.57	.57
Conflict	-.47	-1.96	.05*
R^2	.04		
F	2.95		

Notes. *Significance at the $p<.05$ level.

Mediation Model

It was of interest to determine if teacher-child relationships mediated the relationship between self-regulation and social competence. Further, the extent to which there were differences in these relationships when sex, age, population density, or English Language Learner status were considered. It was hypothesized that teacher-child relationships would explain the relationship between self-regulation and social competence and be stronger for males than females. It was hypothesized that age would have no impact on the strength of this relationship. It was hypothesized that this relationship would be stronger for children living in less densely populated areas and for English Language Learners.

Due to the lack of a strong relationship between self-regulation and student-teacher relationships, as well as a lack of a relationship between student-teacher relationships and social skills and problem behavior, a mediation analysis between the variables was not appropriate. As a result of these findings, other relationships between these variables were explored.

Population Density

Due to the rural and suburban differences in the sample, the Closeness and Conflict scales of the STRS were considered in relation to the population density of the area in which each child resides. An analysis of variance (ANOVA) comparing the population density of the county to the closeness and conflict values for the teacher-child relationship was conducted. The Closeness scale between teacher and child was positively correlated with rural locations meaning students in rural areas have a closer relationship than students in suburban areas ($p<.04$). Conflict was not a significant predictor of a population density ($p<.69$). It should be noted that the R^2 value was lower in this relationship, ($R^2=.07$). Results of the ANOVA are presented in Table 12.

Table 12

Population Density and Teacher–Child Relationship

Variable	Teacher-Child Relationship		
	B	*t-statistic*	*p*
Constant	1988.01	3.31	.001
Closeness	-40.95	-2.11	.04*
Conflict	-5.23	-.40	.68
R^2	.07		
F	3.09		

Notes. *Significance at the $p<.05$ level.

The Closeness and Conflict scales of the CPRS also were compared with the population density using ANOVA. CPRS Closeness ($p<.46$) and Conflict ($p<.17$) were not significant predictors for population density, $R^2 = .04$ (see Table 13).

Table 13

Population Density and CPRS

Variable	Child-Parent Relationship		
	B	*t-statistic*	*p*
Constant	1517.02	2.55	.013
Closeness	-11.44	-.08	.46
Conflict	-19.37	-.15	.17
R^2	.04		
F	1.49		

Notes. *Significance at the $p<.05$ level.

Speed DIAL-4

The relation of the Speed DIAL-4 to the STRS also was examined. Using ANOVA, Closeness (p<.21) and Conflict (p<.37) scales did not predict Speed DIAL-4 scales, R^2=.021 (see Table 13). Self-regulation also was not found to have a strong relation with Speed DIAL-4 scores, with Attentional Focusing ($p<.07$), Inhibitory Control ($p<.19$), and Impulsivity ($p<.50$) with an R^2 =.10 (see Table 14). The PKBS Social Skills and Problem Behavior scales also were not significant predictors of Speed DIAL-4 scores, with ($p<.16$) and (p<.77) respectively with R^2 = .03.

Table 14

Speed DIAL-4 and Student-Teacher Relationship

Variable	Student-Teacher Relationship		
	B	*t-statistic*	*p*
Constant	12.26	2.08	.04
Closeness	.24	1.25	.21
Conflict	-.12	-.91	.37
R^2	.02		
F	.89		

Notes. *Significance at the $p<.05$ level.

Table 15

Results of Regression for Speed DIAL-4

Variable	Speed DIAL-4		
	B	*t-statistic*	*p*
Constant	-.116	-.2	.98
Attentional Focusing	1.65	1.81	.07
Inhibitory Control	.54	.68	.50
Impulsivity	1.20	1.33	.19
R^2	.10		
F	2.93		

Notes. *Significance at the $p<.05$ level.

Table 16

Results of Regression for Speed DIAL-4

Variable	Speed DIAL-4		
	B	*t-statistic*	*p*
Constant	4.13	.37	.71
Social Skills	.09	1.42	.16
Problem Behaviors	.02	.29	.77
R^2	.03		
F	1.10		

Notes. *Significance at the p<.05 level.

Language Status

Variables of self-regulation, problem behavior, and social skills were considered in relation to primary language (i.e., English language learner status). Using ANOVA, Attentional Focusing, Inhibitory Control, and Impulsivity were not found to be significant predictors of primary language. The PKBS Social Skills Composite Scale approached significance (p<.053), but Problem Behavior Composite Scale was not significant (p<.565). With an R^2 =.046), neither of these variables should be considered appropriate predictors for primary language. The STRS Conflict scale was a significant predictor of primary language (p<.006) but Closeness was not (.227), with a R^2 =.089). By contrast, the CPRS Closeness was a significant predictor (*p*<.020) of primary language, but Conflict was not (p<.424) with a R^2=.082. Regression results are in Table 17-20.

Table 17

Language and Self-Regulation

Variable	Language		
	B	*t-statistic*	*p*
Constant	1.67	4.58	.00
Attentional Focusing	-.05	-.92	.36
Inhibitory Control	.02	.48	.63
Impulsivity	-.05	-.91	.37
R^2	.03		
F	.73		

Notes. *Significance at the $p<.05$ level.

Table 18

Results of Regression for Language and Social Competence

Variable	Language		
	B	*t-statistic*	*p*
Constant	2.3	3.43	.00
Social Skills	-.01	-1.96	.05*
Problem Behaviors	-.00	-.58	.57
R^2	.05		
F	1.99		

Notes. *Significance at the p<.05 level.

Table 19

Results of Regression for Language and Teacher-Child Relationship

Variable	Language		
	B	*t-statistic*	*p*
Constant	.97	2.77	.01
Closeness	-.01	-1.22	.23
Conflict	.02	2.84	.01*
R^2	.09		
F	4.04		

Notes. *Significance at the p<.05 level.

Table 20

Results of Regression for Language and Parent-Child Relationship

Variable	Language		
	B	*t-statistic*	*p*
Constant	2.16	6.32	.00
Closeness	-.02	-2.37	.02*
Conflict	-.01	-.80	.42
R^2	.08		
F	3.68		

Notes. *Significance at the p<.05 level.

Consideration of Child Sex and Age

Child sex was considered in relation to teacher-child relationship, problem behavior, and social skills using ANOVA (see Table 19). Sex was not a significant predictor for both Conflict (p< .14), and Closeness (p<.13), with R^2 =.08, in the Student-Teacher Relationship with boys and girls demonstrating equal levels of closeness and conflict with their teachers (see Table 19). Similarly, sex was not a significant predictor for Conflict (p<.86), with a R^2 =.000), or Closeness (p<.35), with a R^2 =.000 for the CPRS (see Table 20). Sex also did not predict self-regulation, with Attentional Focusing (p<.66), Inhibitory Control (p<.33), and Impulsivity (p<.22) (see Table 21). Sex was a significant predictor for the Problem Behavior Composite Scale (p<.013), but was not a significant predictor for the Social Skills Composite Scale was not (p<.492), with a

R^2= .08 (see Table 22). Age was not found be a significant predictor for any of the measures (see Tables 23 – 33).

Table 21

Child Sex and Teacher-Child Relationship

Variable	Child Sex		
	B	*t-statistic*	*p*
Constant	2.60	6.86	.00
Closeness	-.02	-1.52	.13
Conflict	-.01	-1.47	.14
R^2	.08		
F	3.64		

Notes. *Significance at the p<.05 level.

Table 22

Child Sex and Parent-Child Relationship

Variable	Child Sex		
	B	*t-statistic*	*p*
Constant	1.85	4.84	.00
Closeness	-.01	-.95	.35
Conflict	.00	.18	.86
R^2	.01		
F	.45		

Notes. *Significance at the p<.05 level.

Table 23

Child Sex and Self-Regulation

Variable	Child Sex		
	B	*t-statistic*	*p*
Constant	1.82	4.68	.00
Attentional Focusing	-.08	-1.25	.22
Inhibitory Control	-.02	-.45	.66
Impulsivity	.06	.98	.33
R^2	.04		
F	1.16		

Notes. *Significance at the p<.05 level.

Table 24

Child Sex and Social Competence

Variable	Child Sex		
	B	*t-statistic*	*p*
Constant	.31	.43	.67
Problem Behavior	.01	2.52	.01*
Social Skills	.00	.69	.49
R^2	.08		
F	3.34		

Notes. *Significance at the p<.05 level.

Table 25

Age and Teacher-Child Relationship, Closeness

Variable	Age		
	B	*t-statistic*	*p*
Constant	34.11	9.01	.00
Closeness	-.77	-.89	.38
R^2	.01		
F	.79		

Notes. *Significance at the p<.05 level.

Table 26

Age and Teacher-Child Relationship, Conflict

Variable	Age		
	B	*t-statistic*	*p*
Constant	35.11	6.16	.00
Conflict	-.07	-.05	.96
R^2	.00		
F	.00		

Notes. *Significance at the p<.05 level.

Table 27

Age and Parent-Child Relationship, Closeness

Variable	Age		
	B	*t-statistic*	*p*
Constant	26.63	5.87	.00
Closeness	1.13	1.08	.28
R^2	.01		
F	1.17		

Notes. *Significance at the p<.05 level.

Table 28

Age and Parent-Child Relationship, Conflict

Variable	Age		
	B	*t-statistic*	*p*
Constant	36.66	7.33	.00
Conflict	-1.18	-1.03	.31
R^2	.01		
F	1.06		

Notes. *Significance at the p<.05 level.

Table 29

Age and Social Skills

Variable	Age		
	B	*t-statistic*	*p*
Constant	98.06	8.61	.00
Social Skills	1.19	.46	.65
R^2	.00		
F	.21		

Notes. *Significance at the p<.05 level.

Table 30

Age and Problem Behavior

Variable	Age		
	B	*t-statistic*	*p*
Constant	94.63	7.93	.00
Problem Behavior	.34	.13	.90
R^2	.00		
F	.02		

Notes. *Significance at the p<.05 level.

Table 31

Age and Attentional Focusing

Variable	Age		
	B	*t-statistic*	*p*
Constant	4.31	5.36	.00
Attentional Focusing	.10	.52	.60
R^2	.00		
F	.28		

Notes. *Significance at the p<.05 level.

Table 32

Age and Inhibitory Control

Variable	Age		
	B	*t-statistic*	*p*
Constant	4.24	4.66	.00
Inhibitory Control	.11	.53	.60
R^2	.00		
F	.28		

Notes. *Significance at the p<.05 level.

Table 33

Age and Impulsivity

Variable	Age		
	B	*t-statistic*	*p*
Constant	4.06	5.50	.00
Impulsivity	.10	.60	.55
R^2	.00		
F	.36		

Notes. *Significance at the p<.05 level.

Parent-Child Relationship

The final consideration was the extent to which these variables relate to child-parent relationships. It was hypothesized that children with higher self-regulatory skills and better social competence would have better relationships with their parents. To determine if self-regulation components predicted child-parent relationships, and using ANOVA, the three variables of Attentional Focusing, Impulsivity, and Inhibitory Control were used as predictors of Closeness from the Child-Parent Relationship Scale (see Table 19). Attentional Focusing (p<.93), Impulsivity (p<.49), and Inhibitory Control (p<.49) were not significant predictors for Child-Parent Relationship Closeness, R^2 =.014. When analyzing the relationship between self-regulation and child-parent relationship on the Conflict scale, Attentional Focusing (p<.00) and Inhibitory Control (p<.04) were both found to be significant predictors. Impulsivity (p<.74) was found to not be a significant predictor. The R^2 for this relationship was also moderate (R^2 =.24).

Table 34

Self-Regulation Components and Closeness in the Child-Parent Relationship

Variable	Closeness		
	B	*t-statistic*	*p*
Constant	27.03	6.14	.00
Attentional Focusing	.06	.09	.93
Inhibitory Control	.43	.69	.49
Impulsivity	.48	.69	.49
R^2	.01		
F	.37		

Notes. *Significance at the p<.05 level.

Table 35

Self-Regulation Components and Conflict in the Child-Parent Relationship

Variable	Conflict		
	B	*t-statistic*	*p*
Constant	16.16	3.81	.00
Attentional Focusing	2.21	3.24	.00*
Inhibitory Control	1.27	2.13	.04*
Impulsivity	-.22	-.33	.74
R^2	.24		
F	8.83		

Notes. *Significance at the p<.05 level.

Effect of Child-Parent Relationship Status

As with teacher child relationship, it was of interest to determine if child-parent relationships status predicts problem behaviors or social skills. It was hypothesized that child with better parent-child relationships would have fewer problem behaviors and higher social skills. Using ANOVA, the Closeness and Conflict Scales of the CPRS showed that the Conflict scale was a significant predictor for Problem Behavior (p<.00), but Closeness was not a significant predictor of Problem Behavior (p=.51). Conflict on the CPRS also was found to be a significant predictor of PKBS Social Skills (p<.00), but Closeness was not a significant predictor (p<.51).

Table 36

Child-Parent Relationship and Problem Behavior

Variable	Problem Behavior		
	B	*t-statistic*	*p*
Constant	141.57	15.17	.00
Closeness	-.16	-.67	.51
Conflict	-1.28	-5.79	.00*
R^2	.31		
F	18.54		

Notes. *Significance at the p<.05 level.

Table 37

Child-Parent Relationship and Social Skills

Variable	Social Skills		
	B	*t-statistic*	*p*
Constant	65.89	6.95	.00
Closeness	.16	.66	.51
Conflict	1.02	4.54	.00*
R^2	.22		
F	11.63		

Notes. *Significance at the p<.05 level.

CHAPTER V

SUMMARY AND CONCLUSIONS

The purpose of the study was to further explore the social-emotional functioning of young children who are low-income and at-risk for developing academic and social difficulties later in their childhood. This period of time is critical for identifying delays and implementing interventions in both the home and school setting. Additionally, students in rural settings do not have as much access to resources and services that children in urban and suburban settings have. Previous research has identified and studies these important factors that contribute to development of healthy children including self-regulation skills, social competence, close and comforting relationships with caregivers, and pre-academic aptitude. By measuring a population of rural and suburban early childhood students, these factors were explored with a population that is largely under-represented in educational research (Keys, 2015).

This study examined the relationship between a child's ability to self-regulate, problem behaviors, social skills, pre-academic skills, and relations with their parents and teachers. Based on previous research conducted (Cadima et al., 2015; Hamre & Pianta, 2001; Martí, Bonillo, Jané, Fisher, & Duch, 2016; Silva et al., 2011) it was hypothesized that relationships between the variables would be significant. The model designed to explore these relationships was tested in a suburban and rural Head Start population, an understudied population that has demonstrated need of intervention (Neidell & Waldfogel, 2009).

Self-Regulation

Based on the existing research (Gestsdottir et al., 2015; Helle et al., 2013), it was hypothesized that self-regulation was a key factor in child development. That attention focusing

and inhibitory control were significant predictors of both problem behaviors and social skills for this sample results with this sample are consistent with the existing research. In addition, the relation between attention focusing and inhibitory control in predicting teacher-student relationships was consistent with extant literature (Choi & Dobbs-Oates, 2016). In contrast, although others have reported a positive relation between impulsivity and both problem behaviors (Degol & Bachman, 2015) and social skills (Merrell, 2002; Merrell & Wolfe, 1998), this was not supported with the sample. Similarly, while others have found the impulsivity was predictive of teacher-student relationship status (Rudasill & Rimm-Kaufman, 2009), when considered in terms of closeness and conflict, impulsivity did not contribute to the variance in this sample. Finally, self-regulation was found not to be a significant predictor of the parent-child relationship. This is not consistent with existing research (Owen et al., 2012). Some of the reasons for divergent findings may include sample characteristics, as well as differences in the measures used.

The relationship between self-regulation and problem behaviors indicated that there was not a significant overall relationship. Results indicated that Impulsivity was found to not be a significant predictor, while Attentional Focusing and Inhibitory Control were found to be significant predictors. When considering the relationship between self-regulation and social skills, no significant overall relationship was found. Again, Impulsivity was found to not be a significant predictor of the relationship. The overall relationship between self-regulation and social competence was not found to be significant. This may indicate that this measure of self-regulation may not be appropriate for measuring this construct in an early childhood population, as these findings are inconsistent with previous research (Hamre & Pianta, 2001).

Teacher-Child Relationship

Based on existing research (Silva et al., 2011), it was hypothesized that children displaying better self-regulatory skills would have a better relationship with their teacher and children with a more positive teacher-child relationship would have fewer problem behaviors and higher social skills than those displaying poor self-regulatory skills. We hypothesized that teacher-child relationships would explain the relationship between self-regulation and social competence, with this relationship will stronger for males than females. It was hypothesized that age will have no impact on the strength of this relationship, but children living in less densely populated areas and English Language Learners would have a stronger relationship.

Overall, self-regulation was not found to have a significant relationship with teacher-child relationships on the Closeness or Conflict scales. The teacher-child relationship on both the Closeness and Conflict scales were also found not to be a significant predictor of social skills or problem behaviors of children. These results were surprising and few studies have been conducted that support these findings. This may suggest that for this sample, teacher-child relationship measures may not be a good measure of the child's overall functioning within the classroom. Other measures of the child's social and emotional functioning may be more beneficial. Due to the lack of significance in this sample, the extent to which teacher-child relationships mediate the relationship between self-regulation and social competence could not be explored.

When differing demographic variables were considered in relation to teacher-student relationships, some interesting results were obtained. In particular, closeness in the teacher-child relationship emerged as a significant predictor of population density, with rural students indicating a stronger relationship with their teachers than suburban students. Very little research

has been conducted in the area of rural teacher-child relationships, however research has found that improving the teacher-child relationship greatly improves behavioral outcomes (Morrison & Bratton, 2010).

Parent-Child Relationship

Based on existing research (Vernon-Feagans, Willoughby, & Garrett-Peters, 2016), it was hypothesized parent-child relationships would explain the relationship between self-regulation and social competence (as described by problem behaviors and social skills). We hypothesized that this relationship would not be impacted by age. Additionally, we hypothesized that this relationship would be stronger for children living in less densely populated areas and English Language Learners.

Conflict in the parent-child relationship was found to be a significant predictor of problem behavior and social skills. Difficult parent-child relationships have been documented to be associated with the child's social and emotional functioning (Sanders & Mazzucchelli, 2013; Williams, 2017). In this study, parent-child closeness was not found to significantly predict social skills or social skills. These results were surprising considering how social skills plays an important role in relationship building with adults and peers (Caughy et al., 2012). Conflict may play a more important role in the relationship between a parent and child (Choi & Dobbs-Oates, 2016).

Developmental Status

The Speed DIAL-4 is used as an indicator of developmental level. Previous studies have suggested that teacher-child relationship (Cadima et al., 2015), self-regulation (Drake et al., 2014), social skills (Montroy, Bowles, Skibbe, & Foster, 2014), or problem behaviors (Montroy, Bowles, Skibbe, & Foster, 2014; Raver et al., 2009) can account for the variance in

developmental level. For this sample, none of these factors emerged as significant predictors of Speed DIAL-4. This also may be a function of differences in sample, as well as differences in the way the constructs were measured in this study. It also may be a function of the context of the study (i.e., Head Start) and their classroom approach.

Demographic Variables

For this sample conflict in the teacher-child relationships and closeness in the parent-child relationship were not associated with primary language. These findings did not support the hypotheses based as research with a Latino Head Start population (Marti et al., 2016). They found that the relationship between social competence and externalizing behavior was mediated by the closeness and conflict of the maternal relationship (Marti et al., 2016). This sample was only partially (51%) Latino and only (29%) did not speak English as their primary language. The difference in samples could have resulted in the divergent results.

As would be expected, sex was found to be a more significant predictor of overall problem behaviors, as well as closeness and conflict in the teacher-child relationship. Boys were found to have higher conflict with their teacher, which is supported by previous research (Choi & Dobbs-Oates, 2016).

Limitations

One limitation of the study is the sample used. This was a small sample of convenience from rural, suburban, and urban communities. When conducting research with rural populations, limited sample size is a contributing factor that can affect results (Cheung, Slavin, & Society for Research on Educational Effectiveness, 2016). With any research study, having a limited sample size affects the power of the statistic, which can impact the significance of results. A more balanced representation from rural and suburban areas, with population density as a measure

between the two groups, may have lead to differing results. The sample was diverse and, by requirements of Head Start, below the poverty level. There was limited information on the parent or caregiver; no other information about the family context was considered. These may have affected the results.

A second limitation relates to measurement issues. Impulsivity, Attentional Focusing, and Inhibitory Control were used to operationalize self-regulation. While similar to how self-regulation was measured by other researchers, these three scales may not be an accurate representation of self-regulation for this population. Using a live administration of self-regulation, such as the Head-Shoulders-Knees-Toes task may give more accurate results for an early childhood population (Montroy et al., 2016). The Head-Shoulder-Knees-Toes task is a game in which the child must do the opposite action of the examiner, measuring the child's inhibitory control, attention, and working memory (McClelland et al., 2014). The Head-Shoulders-Knees-Toes task The extent to which measurement error contributed due to differences in understanding of the scales also may have affected the results. Cultural and linguistic differences, social desirability, and motivation could have had an effect on the responses given and may have influenced the resulting data.

Implications for Research and Practice

Conflict in the teacher-child relationship was significantly correlated with problem behavior and was positively correlated with primary language. In the child-parent relationship, conflict was significantly correlated with problem behavior and social skills. Problem behaviors predicted child sex, with males have more problem behaviors than females. Closeness in the teacher-child relationship was higher in the rural population, while closeness in the parent-child relationship predicted primary language. Social skills were positively correlated with primary

language. Based on observations, the relationship a child has with their parent and teacher was not highly influenced by self-regulation or social competence.

Further research is needed to examine how teacher-child and parent-child relationships may be related to social-emotional outcomes. Due to the limited support for the link between teacher-child relationships and social-emotional outcomes, further research on the parent-child relationship may be a better indicator of functioning due to more significant relationships between conflict and social difficulties as measured by problem behavior and social skills (Sharkins, Leger, & Ernest, 2017). Data collected from other information sources such as classroom observation data, observations of parent-child interactions, and live assessment may be more informative for rural populations. The influence of language on social competence may also be factor to consider in parent-child relationships (White & Greenfield, 2017). Additionally, measuring other aspects of the rural communities may contribute to our understanding of the associative factors affecting early childhood development (Bender et al., 2011).

Conclusions

Social-behavioral development, including self-regulation, social competence, and cooperative relationships with teachers and parents, are essential components of healthy child development. Studies have focused on how to prevent impediments from arising in the aforementioned areas. The purpose of this study was to elucidate the connections between these relationships and gather information that might lead to identifying risk-factors. Head Start students are a significant population within the United States and more research is needed to study their social-emotional functioning in order to develop appropriate programming. A portion of these students is understudied due to difficulties of collecting data in rural areas. Gathering more data regarding risk factors for negative behaviors that impact academic success can lead to

development of preventative social programs that foster resiliency in rural families and their communities. Self-regulation and overall executive functioning measures may assist in documenting early signs of distress in students. Difficulties in teacher relationships with male students may be a potential link and risk factor to examine when conducting future research in this area (Choi & Dobbs-Oates, 2016). While the results of the study did not support a mediation model for teacher-child relationships and parent-child relationships in relation to self-regulation and social competence, these areas are critical for early childhood development and for the implementation of interventions.

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