

Studying the Protective Influence of a Therapeutic Childcare Center on School Readiness and
Academic Success for Maltreated Children: An Exploratory Investigation

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Abstract

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Child welfare research indicates high rates of social-emotional and academic difficulties in children who have been maltreated. The present study was an exploratory investigation examining early social-emotional development and academic success in a sample of 155 5-to-6 year-old children. The sample included former clients of Childhaven, a therapeutic care facility serving children ages one month to five years old. The current study used analysis of variance to examine the effect of length of enrollment and number of referral reasons on children's academic and social-emotional success. Results for the full analysis sample indicate that children with more referral reasons may require longer periods of enrollment for more positive outcomes. Results for a subsample of 37 children indicate that length of enrollment appears to have a

positive impact on outcomes related to school readiness and success. Interpretations of these findings, future directions for research, and limitations of the study are discussed.

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Chapter I: Introduction

The term “child maltreatment” broadly encompasses child abuse and neglect (Daro & McCurdy, 2007). In the United States, inclusive of all states, U.S. territories, and Washington DC, use the definition of child abuse and neglect based on the Child Abuse Prevention and Treatment Act (CAPTA) (U.S. Department of Health and Human Services (DHHS), 2013). CAPTA defines child abuse and neglect as, at a minimum, “any recent act or failure to act on the part of a parent or caretaker which results in death, serious physical or emotional harm, sexual abuse or exploitation; or an act or failure to act, which presents an imminent risk of serious harm” (p. vii). There are four major types of maltreatment—physical abuse, sexual abuse, psychological maltreatment/emotional abuse, and neglect (DHHS, 2013).

In the United States in 2012, there were an estimated 3.4 million reports of suspected child maltreatment (DHHS, 2013). Roughly 42 percent of these reports were screened in and investigated by Child Protective Services. These investigations led to an estimated 678,810 children being identified as victims of substantiated maltreatment. Roughly 78 percent of these children experienced neglect, 18 percent experienced physical abuse, and 9 percent experienced sexual abuse. Approximately 63 percent of these children were 8 years old or younger and 13 percent of the victims were reported as having a disability (DHHS, 2013).

Research shows that maltreatment detrimentally affects children in early childhood (ages birth to 8 years old) at the point of disclosure and beyond (T. Herrenkohl, 2011; Trickett & McBride-Chang, 1995). Specifically, children who have been maltreated have been found to receive lower standardized test scores, have lower grades, and are more likely to be retained (Eckenrode, Laird, & Dorris, 1993; Rouse & Fantuzzo, 2008). Children who have been maltreated also are at risk for increased externalizing and internalizing behaviors, such as

aggression, anxiety, depression, and sexualized behaviors (Fantuzzo, DeiGaudio Weiss, Atkins, Meyers, & Noone, 1998; Shonk & Cicchetti, 2001; Wodarski, Kurtz, Gaudin, & Howing, 1990). In addition, research has shown negative relationships between social competence, social skills, and child maltreatment (Cicchetti, Lynch, Shonk, & Todd Manly, 1992; Rouse & Fantuzzo, 2008).

There are numerous risk factors, operating at different levels, that increase the likelihood of a child being maltreated (Coulton, Korbin, Korbin, Su, & Chow, 1995; Stith et al., 2009; DHHS, 2013). Individual child factors include young age, having a disability, and behavior problems (Sobsey, 2002; DHHS, 2013). Parental characteristics include having a history of being abused as a child, mental illness, younger age, low self-esteem, low social support, and chronic stress (Black, Heyman, & Smith Slep, 2001a; Stith et al., 2009; Thornberry, Knight, & Lovegrove, 2012). Families characterized by domestic violence, low SES, unemployment, single-parent households, large number of children per adult in households, and negative parent-child interactions also have been found to be at increased risk for child maltreatment (Appel & Holden, 1998; Stith et al., 2009). In addition, children in impoverished communities have been found to be at heightened risk for victimization (Coulton, Korbin, Su, & Chow, 1995).

While there are numerous risk factors for child maltreatment, these risk factors are not deterministic. There are many protective factors that operate against the risk factors to reduce the chance for maltreatment and/or buffer the negative effects of maltreatment (Afifi & MacMillan, 2011). Individual child factors include ego overcontrol (control impulses), ego resilience (adaptability), positive self-esteem, and adaptive daily living skills (Afifi & MacMillan, 2011). Parent and family factors include nurturing parenting skills, stable presence of a caregiver, household rules, parental employment, adequate housing, and access to health care and social

services (Afifi & MacMillan, 2011; Centers for Disease Control and Prevention (CDC), 2012). Community factors include supportive climates that work to prevent maltreatment and provide support to parents (CDC, 2012).

Many early intervention programs have been created to target risk factors for maltreatment and strengthen protective factors (Daro & McCurdy, 2007). Early intervention programs include home visiting, parent training, cognitive behavioral therapy, child assault prevention programs, and therapeutic childcare (Daro & McCurdy, 2007; Moore, Armsden, & Gogerty, 1998). While some of these programs have demonstrated reductions in child maltreatment and/or related risk factors, other programs, such as therapeutic childcare, require a stronger research base (Geeraert, Van den Noortgate, Grietens, & Onghena, 2004). Therapeutic childcare has some research documenting its effect on long-term outcomes for children, but has no data on its effect on outcomes in early childhood (e.g., behavior, pre-academic readiness) (Moore et al., 1998).

The purpose of the study was to provide information on service outcomes at Childhaven, a therapeutic childcare center in the Pacific Northwest. Specifically, this study investigated children's social-emotional and academic development in relation to the number of risk factors (factors that increase the likelihood of an undesired outcome) they experienced and the length of enrollment in a therapeutic childcare center. This study evaluated the social skills and behaviors of 155 Childhaven clients entering kindergarten during the 2012–2013 school year. Analyses also examined a subsample of 37 children following their entry into kindergarten to document whether and how their social skills, behaviors, social-emotional competence, and academic competence changed over time. This study investigated whether social-emotional and academic differences exist within the subsample according to the number of risk factors reflected in a

child's referral to Childhaven and the child's length of enrollment in the program. Results from this study provide important information for staff at Childhaven and for researchers and practitioners in other therapeutic childcare centers.

Chapter II: Literature Review

The Effects of Early Child Maltreatment on Academic Performance and Social and Emotional Functioning in Early Childhood

Academic achievement. Before the 1990s, there was little research on the effects of maltreatment on children's school performance (Leiter, 2007). The research that did exist contained flaws including small sample sizes, retrospective designs, and no adequate control groups. It was not until the 1990s that five teams of researchers, using adequate sample sizes, prospective designs, and matched or randomly selected control groups, demonstrated that maltreatment was associated with poor school performance (Eckenrode et al., 1993; Egeland, 1997; Kurtz, Gaudin, Wodarski, & Howing, 1993; Leiter & Johnson, 1994; Perez & Widom, 1994).

Studies have shown that children who have been maltreated performed worse than their non-maltreated peers on standardized tests (Eckenrode et al., 1993; Egeland, 1997; Kurtz et al., 1993; Leiter & Johnson, 1994; Rouse & Fantuzzo, 2008). However, most of these studies included wide age ranges that spanned multiple developmental periods (e.g., subjects in Eckenrode's study were in kindergarten through twelfth grade), which makes it difficult to generalize to early childhood. One study that specifically evaluated academic achievement in 10,349 younger children found that second grade students who had been maltreated evidenced the highest odds ratios for low academic achievement scores compared with other educational risk factors (e.g., homelessness and poverty) (Rouse & Fantuzzo, 2008). Interestingly, another study that involved 10,738 third grade students found that while child maltreatment still evidenced significant odds ratios for low academic achievement, other risk factors (e.g., low maternal education) evidenced higher odds (Rouse, Fantuzzo, & LeBoeuf, 2011).

Researchers also have found that children who have been maltreated receive lower grades and are at increased risk of repeating a grade compared with their peers (Eckenrode et al., 1993; Kurtz et al., 1993; Leiter & Johnson, 1994; Rowe & Eckenrode, 1999). For example, Leiter and Johnson (1994) compared 1,846 maltreated children's academic performance with 387 controls and 280 children who received social services and found that maltreated children had significantly lower grades and were more likely to be retained than the other two groups. However, these studies involved wide age ranges, which makes the results difficult to generalize to early childhood.

Limited research has focused on the relationship between maltreatment and academic competence, a construct that includes academic performance, motivation, and general cognitive functioning (Gresham & Elliott, 2008a). Milling Kinard (2001b) found that children who had been neglected rated themselves as having lower academic competence than children who had been physically or sexually abused. However, these maltreatment groups were not homogeneous (e.g., children who experienced sexual abuse and physical abuse or neglect were placed in the sexual abuse group) and the age range spanned from 6 to 12 years old, making it difficult to generalize to younger children (Milling Kinard, 2001b). In another study, focusing on early childhood, teachers rated foster children in kindergarten and first grade as having less academic competence than their non-maltreated peers (Pears, Fisher, Bruce, Kim, & Yoerger, 2010).

Maltreatment and academics. The previous section discussed results from studies that examined undifferentiated maltreatment's effect on academics. In other words, those studies did not differentiate between the effects of abuse and neglect in their studies. However, other studies have examined the effects of specific types of maltreatment in relation to academics. There is a fairly consistent finding throughout the literature that children who experienced neglect perform

more poorly on academic measures than children who experienced other forms of maltreatment (Eckenrode et al., 1993; Egeland, 1997; Fantuzzo, Perlman, & Dobbins, 2011; Kurtz et al., 1993). In a study of 840 students in kindergarten through 12th grade, Eckenrode et al. (1993) found that when maltreatment was broken down by type, children who had been neglected or neglected and sexually abused scored significantly lower in both reading and math than children who had not been maltreated. Whereas, the other types and combinations of maltreatment did not differ from the non-maltreated group (Eckenrode et al., 1993).

Early maltreatment. Some research has shown that undifferentiated maltreatment that occurs earlier in life is related to poorer academic performance in children than if maltreatment happens later in life (Fantuzzo et al., 2011; Milling Kinard, 2001a). For instance, Leiter and Johnsen (1997) examined the relationship between grade point average and age of onset with 967 children ages 5 to 23 years old and found that earlier onset of maltreatment was associated with greater grade retention than maltreatment that occurred at later ages.

Within two of these studies, there have been conflicting findings on whether early onset of specific types of maltreatment have differing effects (Fantuzzo et al., 2011; Milling Kinard, 2001a). In a study that examined 10,349 second-grade students across a county, Fantuzzo and colleagues (2011) found that children who were neglected prior to kindergarten were more likely to perform poorly on standardized reading, mathematics, and science tests in second grade compared with their peers. Pre-kindergarten and kindergarten reports of physical abuse were not associated with poorer academic outcomes in second grade (Fantuzzo et al., 2011). In the other study that examined academics of 6 to 12 year olds, researchers found age at first instance of physical abuse to be related academics (Milling Kinard, 2001a). Physical abuse that occurred at younger ages was related to lower standardized reading and mathematics scores, but the same

correlation did not exist with sexual abuse or neglect (Milling Kinard, 2001a). It is important to note that this study had heterogeneous groups, which may have affected the results. For example, children who were physically abused and neglected were placed in the physical abuse group, making it difficult to understand the contributions of neglect on these children's academic performance.

Behavior

Externalizing behavior. Several studies have found that in addition to academic deficits, children who have experienced undifferentiated maltreated have higher levels of externalizing behaviors (i.e., outward behaviors that can be seen by others) than their non-maltreated peers (Kim & Cicchetti, 2004; Shonk & Cicchetti, 2001; Todd Manly, Kim, Rogosch, & Cicchetti, 2001). For example, Shonk and Cicchetti (2001), who examined 229 children's behaviors at school and camp, found that both counselors and teachers rated children who have been maltreated as having higher levels of externalizing behaviors than their non-maltreated peers. While these studies found differences in behaviors between the two groups, their samples had wide age ranges that spanned multiple periods of child development (e.g., ages 5 to 12 years old). Interestingly, another study that only included only preschoolers did not find a difference in externalizing behaviors between children who had been maltreated and those who had not (Fantuzzo et al., 1998).

Studies also have linked undifferentiated maltreatment to increased aggression, a specific type of externalizing behavior (Downey & Walker, 1989; R. Herrenkohl & Herrenkohl, 1981; Todd Manly et al., 2001). For example, as part of their longitudinal study of 328 children and parents, R. Herrenkohl and Herrenkohl (1981) found that during free play, maltreated preschool-aged children exhibited higher levels of aggression in response to difficult tasks or their peers'

behaviors compared with children who had not been maltreated. Cicchetti et al. (1992) did not find that children who had been maltreated had higher levels of aggression, but their results from multiple studies showed that maltreated children were more hostile in the camp setting than their peers (Cicchetti et al., 1992). In addition, Thompson and Tabone (2010) studied behavioral trajectories of early alleged maltreatment (before age four) in a sample of 242 children and found that early maltreatment significantly predicted anxiety and attention problems but not aggression.

Maltreatment and externalizing behaviors. Another focus of research has been to examine how different types of maltreatment (e.g., physical abuse, sexual abuse, and neglect) affect externalizing problems (Einbender & Friedrich, 1989; Milling Kinard, 1995; Shonk & Cicchetti, 2001). Currently, the findings regarding the connection between each type of maltreatment and externalizing behaviors are mixed (Fantuzzo et al., 1998; Kim & Cicchetti, 2004).

Two studies that examined externalizing behaviors in sexually abused girls found mixed results (Einbender & Friedrich, 1989; Mian, Marton, & LeBaron, 1996). Einbender and Friedrich investigated the psychological functioning of 6- to 14-year-old females (46 sexually abused and 46 matched controls) and found that sexually abused females exhibited higher levels of externalizing behavior. However, another study involving 70 sexually abused 3-to 5-year-old girls and 42 non-maltreated female peers found that while sexually abused girls demonstrated significantly higher sexualized behavior and internalizing behavior, their externalizing behavior was not significantly different than their peers (Mian et al., 1996)

Other studies have examined physical abuse and also compared physical abuse with neglect and sexual abuse (English et al., 2005; Trickett, 1993; Wodarski et al., 1990). Trickett (1993) compared parent's behavior ratings for 29 physically abused children ages 4 to 11 years

old with 29 children who had not been maltreated. Trickett (1993) found that parents rated physically abused children as having higher levels of externalizing behaviors than their non-maltreated peers. English et al. (2005) evaluated outcome data at age 8 for 203 children who had been sexually abused, physically abused, or neglected and found that caregivers reported significantly higher externalizing behaviors for neglected children compared to children in the other two groups. Wodarski et al. (1990) examined the effects of physical abuse and neglect on externalizing behaviors on 139 children and adolescents. In their study, they found that parents rated young abused boys ages 8 to 11 years old as having higher externalizing problems than young boys who had been neglected or not maltreated. Teachers rated young abused girls as having higher externalizing problems than young girls who had been neglected or not maltreated (Wodarski et al., 1990).

Several studies also have investigated whether specific types of maltreatment lead to higher levels of aggression (English et al., 2005; Hoffman-Plotkin & Twentyman, 1984; Trickett, Aber, Carlson, & Cicchetti, 1991). Studies that specifically examined physically abused children compared with non-maltreated children found that physical abuse was related to higher levels of aggression than in their non-maltreated peers (English et al., 2005; Johnsona et al., 2002; Trickett et al., 1991; Vandenberg & Marsh, 2009; Wodarski et al., 1990). Studies that have compared different types of maltreatment with each other have found mixed results as to whether one type of maltreatment leads to higher levels of aggression than the others (Hoffman-Plotkin & Twentyman, 1984; Kotch et al., 2008; Toth, Manly, & Cicchetti, 1992; Wodarski et al., 1990). For example, in a study of 42 preschoolers, Hoffman-Plotkin and Twentyman (1984) found that 3- to 6-year-olds who had been abused were more aggressive than neglected or non-maltreated peers. Wodarski et al. also found similar results, but with 8- to 16-year-olds; therefore their

results need to be cautiously interpreted for early childhood. In contrast, Kotch et al. (2008) found that early neglect (before age 2) was related to aggression in a sample of 1318 children, but early and later abuse and later neglect did not predict aggression. Lastly, Toth, Todd Manly, and Cicchetti (1992) examined 153 children ages 7 to 12 years old and found that children who had been abused or neglected did not differ from the control group on levels of aggression.

Sexualized behaviors. Another type of behavior that has been studied in relation to maltreatment is sexualized behavior (e.g., provocative behavior, public or compulsive masturbation, age-inappropriate sexual knowledge) (Goldston, Turnquist, & Knutson, 1989; Mian et al., 1996). Most studies have examined only the relationship between sexual abuse and sexualized behaviors (Einbender & Friedrich, 1989; Goldston et al., 1989). These studies indicate that young children who have been sexually abused exhibit more sexualized behaviors than their non-maltreated peers (Deblinger, McLeer, Atkins, Ralphe, & Foa, 1989; Einbender & Friedrich, 1989; Goldston et al., 1989; Mian et al., 1996). Deblinger et al. (1989) also investigated the behavior of children who had been physically abused ($n = 29$) and found that sexually abused children ($n = 29$) exhibited higher levels of sexualized behaviors than physically abused children. Some drawbacks to the generalizability of these findings are that two of the studies examined primarily females, three of the studies included only children in psychiatric facilities, and three of the studies included children from multiple developmental periods (e.g., 3 to 13 years old).

One other study investigated whether 690 children who had been neglected, physically abused, or emotionally abused also showed increased sexually behaviors compared with their non-maltreated peers (Merrick, Litrownik, Everson, & Cox, 2008). Merrick et al. (2008) used caregiver ratings completed when the child was eight years old and examined the relationship

between the onset and type of maltreatment to sexualized behaviors. The researchers found that physical abuse and emotional abuse (after the age of four) were associated with higher levels of sexualized behaviors than neglect (Merrick et al., 2008).

Internalizing behavior. In addition to externalizing behaviors, several studies also have found that children who experienced undifferentiated maltreated exhibit higher levels of internalizing behaviors (behaviors that are directed inward, such as anxiety and depression) than their non-maltreated peers (Burack et al., 2006; Fantuzzo et al., 1998; Kim & Cicchetti, 2004; Shonk & Cicchetti, 2001; Todd Manly et al., 2001). For example, Kim and Cicchetti (2004) conducted a two-year longitudinal study with 345 school-aged children and found that camp counselors rated maltreated children as exhibiting higher levels of internalizing behaviors than non-maltreated children at both time points. Fantuzzo et al. (1998) studied a younger age group of maltreated preschool-aged children ($n = 108$) and found that while they did not display higher levels of externalizing behaviors, they did display higher levels of internalizing behaviors than their non-maltreated peers. Another study found that while maltreated boys were more likely to be rated as having clinically significant internalizing problems than non-maltreated boys, the same difference was not present between maltreated and non-maltreated girls (Milling Kinard, 1995).

Some studies have examined how specific types of internalizing behaviors, such as anxiety and depression, are related to undifferentiated maltreatment in younger children (Mian et al., 1996; Thompson & Tabone, 2010). For their behavior ratings, several studies used the Achenbach's *Child Behavior Checklist (CBCL)*, which combines anxiety and depression into one subscale (Thomas Achenbach, 2013), thus making the differing effects of anxiety and depression unclear.

There appears to be limited research on how undifferentiated maltreatment, affects anxiety and depression in early childhood. One study that has focused on this topic examined behavioral trajectories of early alleged maltreatment (Thompson & Tabone, 2010). Thompson and Tabone found that children who had been maltreated before the age of four years old were rated by their caregivers as having higher levels of anxiety/depression than children who had been maltreated after the age of four. In a study of 327 children in elementary school, Milling Kinard (1995) found that while mothers rated young maltreated boys as having higher levels of anxiety than their non-maltreated peers, the same difference did not exist between maternal ratings of anxiety in maltreated and non-maltreated girls.

Maltreatment and internalizing behaviors. Similar to these studies of externalizing behaviors, researchers have examined how different types of maltreatment affect internalizing behaviors (Einbender & Friedrich, 1989; Mian et al., 1996; Trickett, 1993; Wodarski et al., 1990). Some studies have shown that children who have experienced sexual abuse have high rates of internalizing behaviors (Einbender & Friedrich, 1989; Mian et al., 1996). Other studies have focused on physical abuse and have come up with mixed findings (Trickett, 1993; Wodarski et al., 1990). In a study of 58 children, ages 4 to 11 years old, Trickett (1993) found that caregivers rated physically abused children as having higher levels of internalizing behaviors than children who had not been maltreated. In another study, Wodarski et al. (1990) found that parents rated physically abused boys as having higher levels of internalizing problems than neglected or non-maltreated boys, but did not find the same difference between physically abused girls and their neglected and non-maltreated peers. The opposite was true for teacher ratings—teachers rated physically abused girls as having higher levels of internalizing behaviors than their neglected and non-maltreated peers. Teachers did not rate physically abused boys as having more severe

internalizing behaviors than their neglected and non-maltreated peers (Wodarski et al., 1990). English and colleagues (2005) compared sexual abuse, physical abuse, and neglect with each other and found that eight-year-old children who had been neglected experienced higher levels of internalizing behaviors than children who had experienced the other two forms of maltreatment.

Researchers also have examined how specific types of maltreatment impact children's anxiety and depression (English et al., 2005; Goldston et al., 1989; Johnsona et al., 2002). In a study of 167 8-year-old children, Johnsona and colleagues (2002) compared the relationship of anxiety and depression for those who had been physically abused versus those who had not. The authors reported that while physical abuse was related to higher levels depression, it was not related to higher levels of anxiety (Johnsona et al., 2002). Several other studies also have found that children who were physically abused had higher levels of depression than children who had not been maltreated (English et al., 2005; Toth et al., 1992; Trickett et al., 1991). Two of these studies found no relationship between children who had been sexually abused or neglected and higher rates of depression (English et al., 2005; Toth et al., 1992). However, two other studies that focused on sexual abuse found that sexual abuse was related to increased levels of depression in young children (Goldston et al., 1989; Mian et al., 1996). In Mian's study, sexually abused children also had higher levels of anxiety than their non-maltreated peers.

Social competence. Social competence is the “ability to form relationships and to interact constructively in the pursuit of personal or interdependent goals” and involves skills such as cooperation, sharing, perspective-taking, and handling conflict (Shonk & Cicchetti, 2001, p. 4). Several studies have demonstrated that undifferentiated maltreatment is related to lower levels of social competency in school-aged children (Cicchetti et al., 1992; Kim & Cicchetti, 2004; Levendosky, Okun, & Parker, 1995; Pears et al., 2010; Rogosch, Cicchetti, & Aber, 1995;

Shonk & Cicchetti, 2001). However, one study that included only preschoolers found that teachers, guardians, and peers did not rate maltreated children as having lower levels of social competence than their peers (Vondra, Barnett, & Cicchetti, 1990).

One study also evaluated if and how specific types of maltreatment are related to social competence (Mian et al., 1996). In a study of 112 girls, ages 3 to 5 years old, that examined the effects of sexual abuse, Mian et al. (1996) found that girls who had been sexually abused by a family member showed lower rates of social competence than girls who had been sexually abused by someone outside of their family and girls who had not been abused.

Social skills. Social skills are another aspect of children's social-emotional well-being that has been evaluated in relation to undifferentiated maltreatment (Fantuzzo et al., 1998; Fantuzzo et al., 2011; Rouse & Fantuzzo, 2008). Fewer studies have focused on social skills than behaviors and within those studies, there have been mixed results (Fantuzzo et al., 1998; Fantuzzo et al., 2011). One study that evaluated the effects of maltreatment on the social competencies of preschool-aged children at Head Start found that children who had been maltreated had lower social skills than their non-maltreated peers (Fantuzzo et al., 1998). In addition, Rouse and Fantuzzo (2008) performed a population-based study with second-grade students that examined threats to early school success. They found that maltreatment demonstrated the greatest unique risk for poor social skills when compared with other educational risk factors, including poverty, homelessness, low-maternal education, and biological birth risks (Rouse & Fantuzzo, 2008). Fantuzzo et al. (2011) performed further analyses on the same second-grade population to better understand the effects of the type and timing of maltreatment. They found that neglect, regardless of whether it occurred before or after kindergarten, was related to lower social skills, whereas physical abuse that occurred before or

after kindergarten was not (Fantuzzo et al., 2011). Milling Kinard (1995) also found that maltreatment was predictive of clinically significant social problems in boys but not in girls.

Maltreatment and special education. In addition to the above consequences of maltreatment, children who have been maltreated also are more likely to have a disability and/or to receive special education services than the general population of children (Lightfoot, Hill, & LaLiberte, 2011; Ringeisen, Casanueva, Cross, & Urato, 2009; Scarborough & McCrae, 2008; Sullivan & Knutson, 2000). Sullivan and Knutson (2000) examined special education rates in a population of over 50,000 children, ages birth to 21 years old. They found that around 31 percent of children receiving special education services had a confirmed history of child maltreatment, which was about 3.4 times higher than the maltreatment rate for children not eligible for services (Sullivan & Knutson, 2000). In a study of 2,000 infants that specifically investigated maltreatment in infancy and its relationship to special education found that 31 percent of infants who were maltreated qualified for Individual Family Service Plans (IFSPs) compared with roughly 2.2 percent of infants and toddlers nationwide who qualified (Illinois Department of Human Services, 2010; Scarborough & McCrae, 2008). Twenty percent of these infants later qualified for special education services (Scarborough & McCrae, 2008).

Defined areas of disability. There appears to be limited and varied information as to what types of disability categories are most common with children who have been maltreated (Jonson-Reid, Drake, Kim, Porterfield, & Han, 2004; Ringeisen et al., 2009; Sullivan & Knutson, 2000). One study found that within a population of maltreated students ages 0 to 21 years old, 37.4 percent had behavior disorders, 25.3 percent had intellectual disabilities, 16.4 percent had learning disabilities, 11.2 percent had health-related disabilities, 6.5 percent had communication disabilities, and 0.1 percent had autism (Sullivan & Knutson, 2000). Another study that

examined disability rates in 7,940 school-aged children also found that learning disabilities, intellectual disabilities, and behavior disorders were the most prevalent forms of disabilities among maltreated youth (Jonson-Reid et al., 2004). Ringeisen et al. (2009) examined the prevalence of different types of disabilities with 5- to 6-year-olds who had been maltreated as infants and found that 65.4 percent had speech impairments, 26.1 percent had developmental disabilities, 24.3 percent had a learning disability, 21.6 percent had behavior disorders, 17.8 percent had autism, 14.6 percent had an intellectual disability, and 14 percent had a health-related disability.

Summary of the early effects of child maltreatment. The research surrounding the relationship between academic success and maltreatment indicates that maltreatment negatively impacts a child's ability to succeed academically in school (Eckenrode et al., 1993; Fantuzzo et al., 2011; Rouse & Fantuzzo, 2008). Specifically, children who have been maltreated have been found to receive lower standardized test scores, have lower grades, and are more likely to be retained (Eckenrode et al., 1993; Rouse & Fantuzzo, 2008). In addition, children who have been neglected appear to be most at risk for low academic performance as compared with children who have experienced other types of maltreatment (Eckenrode et al., 1993; Fantuzzo et al., 2011).

Children who have been maltreated also are at risk for increased externalizing and internalizing behaviors (Fantuzzo et al., 1998; Shonk & Cicchetti, 2001; Wodarski et al., 1990). Within these broad domains, maltreated children also have been found to be at increased risk for aggression, sexualized behaviors, depression, and anxiety. However, there are mixed findings as to how specific types of maltreatment are correlated to overall externalizing and internalizing behaviors, as well as the specific types of these behaviors (e.g., aggression).

In addition to academic performance and behaviors, research has shown negative relationships between social competence, social skills, and child maltreatment (Cicchetti et al., 1992; Rouse & Fantuzzo, 2008). Several studies have linked child maltreatment to lower levels of social competence, but there are mixed findings as to whether children who have been maltreated demonstrate lower social skills than their peers who have not been maltreated.

Children who have been maltreated also are more likely to receive special education than the general public (Lightfoot et al., 2011; Sullivan & Knutson, 2000). However, the connection between maltreatment and specific types of disabilities is less clear.

Risk Factors For Child Maltreatment

To prevent children from being victimized and suffering long-term consequences from being maltreated, it is important to understand the risk factors and protective factors for maltreatment. The application of Bronfenbrenner's ecological model to child maltreatment has provided researchers with a better understanding of how various factors operating at different levels increase a child's risk for maltreatment (Belsky, 1993; Bronfenbrenner, 1996). Belsky (1980, 1993) proposed that there are many pathways that include many risk factors that lead to maltreatment. These pathways include multiple risk factors. The following section will present and organize research findings on risk factors within the child, parent, family, and community.

Child risk factors.

Age. Current national statistics indicate that younger children are most vulnerable to maltreatment (Goldman, Salus, Wolcott, & Kennedy, 2003; DHHS, 2013). This vulnerability may be due to their small size, early developmental status, and dependence on caregivers (Goldman et al., 2003). In 2011, children under the age of three represented the largest percentage of maltreatment victims (27.1 percent) and children under the age of one had the

highest rate of victimization (21.2 per 1,000 children) and rate of death due to maltreatment (16.8 per 1,000 children) (DHHS, 2013). In 2011, children under the age of two represented the largest percentage of neglect and physical abuse victims and teenagers between the ages of 12 to 14 years old represented the largest percentage of child victims who were sexually abused (DHHS, 2013).

Disabilities. There are numerous studies that show children with disabilities are at an increased risk for being maltreated (Stalker & McArthur, 2012; Westcott & Jones, 1999). In one study, Sullivan and Knutson (2000) surveyed records of over 50,000 students (ages 0 to 21 years old) and found a 9 percent prevalence rate of maltreatment among non-disabled children and a 31 percent rate of maltreatment among children with disabilities. The researchers concluded that children who had a disability were 3.4 times as likely to be maltreated than those without a disability (Sullivan & Knutson, 2000).

While it is apparent that children with disabilities are at an increased risk for maltreatment, studies have not definitively explained why (Kendall-Tackett, Lyon, Taliaferro, & Little, 2005). One hypothesis is that disabilities cause maltreatment (Sobsey, 2002). Another hypothesis is that there is a third variable that increases the likelihood of both maltreatment and disabilities (Kendall-Tackett et al., 2005; Sobsey, 2002). More research needs to be done in this area to better understand the connection.

Behavior. Some studies show that children who have behavior difficulties are at an increased risk for maltreatment (Black et al., 2001a; Black, Heyman, & Smith Slep, 2001b; Stith et al., 2009). However, several of these studies are retrospective and, thus, the temporal ordering of variables cannot be determined. In other words, retrospective analyses of the behavior make it difficult to determine whether the behavior was present before the maltreatment occurred or was

a result of the maltreatment (Stith et al., 2009). Stith et al. (2009) conducted a meta-analysis of 155 studies and found that child social competence, externalizing behaviors, and internalizing behaviors were the only three child factors that were significantly related to physical abuse and/or neglect. However, it is important to note that several of the studies in this meta-analysis assessed the level of behavior after maltreatment had occurred (Kinard, 1999; Reyome, 1993; Williamson, Borduin, & Howe, 1991).

A potential explanation for why child behavior problems and maltreatment are mutually reinforcing comes from the coercion model, a social interaction theory (Granic & Patterson, 2006; Patterson, 1982). The coercion model hypothesizes that there is an increased risk for child behavior problems when parent-child interactions are hostile. One pathway to hostile parent-child interactions begins with children who have difficult temperaments and are emotionally reactive. Difficult child behavior may then reinforce parents using negative and harsh discipline strategies, which consequently amplifies children's externalizing behavior (Patterson, 1982; Scaramella & Leve, 2004).

Parent or caregiver risk factors.

Parental histories of maltreatment. One parental risk factor that has been widely studied is prior history of maltreatment as a child (Ertem, Leventhal, & Dobbs, 2000). Some research suggests that parents' previous experiences of being maltreated increase their chances of maltreating their children (Ertem et al., 2000). From a social learning perspective, this may be because children who experience violence in their family learn that aggressive behavior is acceptable (Bandura, 1973; Thornberry et al., 2012; Widom, 1989b).

Most studies report an association between a parent's history of maltreatment and child maltreatment (Thornberry et al., 2012). However, two reviews of the literature state that many

studies on intergenerational violence have methodological weaknesses, indicating the need for more rigorous designs (Ertem et al., 2000; Thornberry et al., 2012).

Both Ertem et al. (2000) and Thornberry et al. (2012) report that Widom (1989a) and Egeland (1979) had two of the strongest methodological studies on the intergenerational transmission of abuse. Widom's study met 6 of Ertem and colleagues' criteria and 10 of Thornberry and colleagues' criteria. Widom's study followed a sample of 908 children who had been maltreated into adulthood and compared their rates of perpetration with a control group of 667 children who had no history of maltreatment. Using arrest records for maltreatment as the outcome variable, Widom concluded that there was no relationship between parent maltreatment as a child and future perpetration as an adult. However, because Widom's study measures child maltreatment at both ends (i.e., the parent being abused as a child and the parent abusing his or her child) using official records, the study underestimates child maltreatment occurrence in both generations. It is important to note that alternative measures for maltreatment rates do show support for intergeneration maltreatment (Thornberry et al., 2012).

Egeland and colleagues' study (1979; 1988) fulfilled all of Ertem and colleagues' criteria and six of Thornberry and colleagues' criteria. This study followed a high-risk subsample of 275 women with low socioeconomic status for four years and found that mothers who were physically abused as children were more likely to abuse their children than mothers who had not been abused. While this study demonstrates evidence of intergenerational violence, the study used a small nonrepresentative sample, relied on the mother's self-reports of their own childhood maltreatment, and did not adequately control for confounding variables (Thornberry et al., 2012).

A more recent prospective study by T. Herrenkohl, Kilka, Brown, Herrenkohl, and Leeb (2013) provides additional support for the cycle of violence. The researchers used data from the

Leigh Longitudinal Study, a study that followed a group of 457 preschoolers into adulthood to analyze the antecedents and consequences of maltreatment. The researchers used a subsample of 268 participants who had been children at the start of the study and now had their own children. After controlling for gender and socioeconomic status, Herrenkohl and colleagues found a predictive association between a history of being abusively disciplined as a child and being similarly abusive as an adult.

The above studies show mixed results for the intergenerational transmission of maltreatment, however Widom's study should be interpreted with caution because her outcome variable likely underestimated the actual occurrence of maltreatment. And while numerous other studies support the intergenerational transmission, several have methodological limitations (Ertem et al., 2000; Thornberry et al., 2012). Because of this, the link is less clear between a history of maltreatment victimization and later perpetration of child maltreatment. Therefore, more methodologically sound research needs to be done in this area.

Mental health disorders. Substance abuse and depression are the two main mental health disorders associated with child maltreatment (Chaffin, Kelleher, & Hollenberg, 1996). Other parental mental health disorders, such as anxiety, also have been associated with increased risk for maltreatment, but researchers hypothesize that these disorders are related in different ways. For example, anxiety may only be related to maltreatment when the caregiver also abuses substances (Chaffin et al., 1996; Swanson, Holzer, Ganju, & Jono, 1990).

Substance Abuse. One national survey found that 80 percent of frontline professionals believed substance abuse causes or contributes to maltreatment (Reid, Macchetto, & Foster, 1999) and multiple studies have shown that parental substance abuse is a risk factor for maltreatment (Chaffin et al., 1996; Jaudes, Ekwo, & Van Voorhis, 1995; Kelleher, Chaffin,

Hollenberg, & Fischer, 1994; Kelley, 1998). Reported rates of substance abuse among maltreating families vary due to methodological reasons (e.g., different definitions for substance abuse and maltreatment)(Myers et al., 2002). DHHS (2013) reported that in 2011, 9.8 percent of children who were maltreated had caregivers who abused alcohol and 18.6 percent of children who were maltreated had caregivers who abused drugs. However, most studies have found that substance abuse is a contributing factor to maltreatment for between one third and two thirds of families (DHHS, 1999).

Studies often have investigated the effect of substance abuse in extreme cases of maltreatment when children have been removed from the home. These studies have found substance abuse within families to vary from 43 to 79 percent (Besinger, Garland, Litrownik, & Landsverk, 1999; Murphy et al., 1991). However, in a community-based sample, researchers found that 40 percent of caregivers who abused their children and 56 percent of caregivers who neglected their children had substance abuse problems (Kelleher et al., 1994).

Substance abuse not only has been linked to initial reports of maltreatment, but also appears to increase the odds of re-referrals and recurrences of child maltreatment (English, Marshall, Brummel, & Orme, 1999). In addition, researchers have found that substance abuse increases the risk of maltreatment (as measured by child abuse potential) regardless of whether a parent is currently abusing substances or had previously abused substances (Ammerman, Kolko, Kirisci, & Blackson, 1999). Ammerman and colleagues (1999) found that parents who used substances in the past did not differ from current substance abusers in regard to their potential for abusing children. Other risk factors, such as mental health or SES may have increased past users risk for child maltreatment.

There are several existing hypotheses for the link between caregiver substance abuse and child maltreatment (Ammerman et al., 1999). Substance abuse may: (1) contribute to low frustration tolerance and increased anger; (2) create lower impulse control over physical and verbal aggression; (3) interfere with parental judgment; and (4) cause caregivers to focus entirely on acquisition and consumption of drugs instead of their parental duties (Ammerman et al., 1999).

Depression. Another mental health disorder associated with maltreatment is depression (Chaffin et al., 1996; Dubowitz et al., 2011). However, research groups often examine mental health prevalence rates among caregivers after they have maltreated their children (Chaffin et al., 1996), which makes it difficult to understand whether parents were depressed prior to maltreating their children, whether being identified for maltreatment increases the chances of being depressed, or whether retrospective responses are inherently biased (Chaffin et al., 1996). Therefore, more longitudinal research is needed to examine mental health correlates of the onset of child maltreatment.

Two prospective longitudinal studies have found an association with parental depression and child maltreatment (Chaffin et al., 1996; Dubowitz et al., 2011). Chaffin and colleagues used self-reported data to isolate a sample of 7,103 parents who had not maltreated their children. They followed these parents for one year and found that depression was associated with the onset of self-reported physical abuse and neglect. However, after controlling for substance abuse and demographic factors (e.g., age, race, SES), depression was only associated with physical abuse (Chaffin et al., 1996).

Dubowitz et al. (2011) followed a group of 332 low-income families with no prior history of maltreatment to better understand the onset of child maltreatment (as measured by CPS

reports). After ten years from the initial survey indicating that parents had not abused their children, Dubowitz and colleagues found that maternal depression was one of five risk factors (the other four risk factors were low maternal education, maternal drug use, children's development, and higher number of children in the family) associated with CPS reports. Specifically, Dubowitz and colleagues (2011) found that as mothers' reported increased symptoms of depression, the risk for maltreatment also increased.

Self-Esteem, stress, and social support. Studies have shown that levels of parental self-esteem, stress, and social support are related to child maltreatment (Stith et al., 2009). In one meta-analysis, parental stress and low self-esteem were strongly related to neglect and moderately related to physical abuse. In addition, low social support was minimally but statistically significant to both forms of maltreatment. It is important to note that this meta-analysis did not evaluate how these risk factors influenced each other. Therefore it is unclear as to whether other risk factors, such as SES, may have influenced these risk factor's strength of association with maltreatment (Stith et al., 2009).

While research has shown an association between parental low self-esteem and maltreatment, the relationship between the two remains unclear (Christensen, Brayden, Dietrich, McLaughlin, & Sherrod, 1994). Self-esteem may interact with other variables, such as mental health, making the relationship between self-esteem and maltreatment less direct (Christensen et al., 1994).

There are some hypotheses for how stress and social support are related to maltreatment. Stressful life events, such as financial hardships or housing problems, may make it difficult for parents to meet basic needs of their children (DePanfilis, 2006). It also often is the case that parents who maltreat their children are located in under-resourced communities in which support

networks (e.g., agencies, family, friends) are lacking (Coulton, Korbin, Korbin, et al., 1995). Lacking social support may make it difficult for parents to receive the support they need to care for their children (DePanfilis, 2006). In addition, parents living in poverty may have increased stress in relation to this, which increases their chances of maltreating their children (Conger et al., 1992; Gutman, McLoyd, & Tokoyawa, 2005).

Caretaker age and low maternal education. Teen parenting is considered a risk for child maltreatment, but research findings are inconsistent (National Research Council, 1993; Schumacher, Smith Slep, & Heyman, 2001). Some studies have found that young mothers maltreat their children at a higher rate than older mothers, while other studies have found no difference in maltreatment rates for mothers of different ages (Black et al., 2001a; Chaffin et al., 1996; Mersky, Berger, Reynolds, & Gromoske, 2009).

These inconsistent findings may be due to methodological issues in studies, such as how researchers define a caregiver's age (e.g., age at birth of child versus age at maltreatment report) (Kinard & Klerman, 1980). In addition, some studies may not take into account other risk factors that teenage parents may experience, such as less social support and lower maternal education that also are considered risk factors for maltreatment (Buchholz & Korn-Bursztyn, 1993; Budd, Heilman, & Kane, 2000).

Budd and colleagues (2000) conducted a study with 75 adolescent mothers that examine the correlates to child abuse potential. The researchers found that adolescent mothers who self-reported a higher child abuse potential also reported higher emotional distress, lower social support satisfaction and lower academic achievement (Budd et al., 2000).

Low maternal education also appears to be related to child maltreatment (Dubowitz et al., 2011; Kotch et al., 1995; Stith et al., 2009). Dubowitz and colleagues found that children were

1.55 more times as likely to have a CPS report if their mothers had not completed high school. The researchers hypothesize that mothers who have less education may also lack financial resources and struggle to provide adequate care and protection for their children (Dubowitz et al., 2011).

Other parent characteristics. In addition to the parent risk factors listed above, some other research indicates that parents who perceive their children negatively (i.e., view them as “problems”) and parental anger/hyper-reactivity are risk factors for maltreatment (Stith et al., 2009). Hostile attribution bias may best explain the relationship between these factors (Crick & Dodge, 1994). The hostile attribution bias posits that people misinterpret other people’s ambiguous behaviors as hostile, which then may lead to aggression (Crick & Dodge, 1994). When applied to maltreatment, this means that parents may misinterpret their children’s behavior as hostile and consequently behave aggressively toward their children. More research needs to be done to better understand whether parental hostile attributions toward their children lead to maltreatment.

Family risk factors.

Domestic violence. There is strong evidence that child maltreatment and domestic violence co-occur (Appel & Holden, 1998; Fantuzzo, Boruch, Beriama, Atkins, & Marcus, 1997; T. Herrenkohl, Sousa, Tajima, Herrenkohl, & Moylan, 2008). Appel and Holden conducted a review of 31 studies that investigated the co-occurrence of domestic violence and child maltreatment and found that there was a 40 percent co-occurrence in clinical samples of mothers or children who had been physically abused and a 6 percent co-occurrence in community samples. However, Appel and Holden reported that methodological inconsistencies in the studies

(e.g., physical abuse was defined differently in 15 studies) made it difficult to estimate how often child maltreatment and domestic violence co-occur.

The co-occurrence of maltreatment and domestic violence indicates that children in households in which domestic violence occurs are more likely to be maltreated (Moffitt & Caspi, 2003). Several studies report various degrees of risk for maltreatment in households in which domestic violence occurs. According to the National Family Violence Survey in 1985, there is a 150 percent increase in risk for child abuse in households where fathers abuse mothers and a 120 percent increase in risk for child maltreatment by mothers in households where mothers abuse fathers (Straus, Gelles, & Smith, 1990). Osofsky (1995) reported that children in homes with domestic violence are maltreated at a rate 15 times higher than the national average, while Moffitt and Caspi (2003) reported that statistics from several studies indicate that children are 3 to 9 times more likely to be abused in households where domestic violence is present.

Researchers have postulated whether this “double whammy” effect, in which children witness domestic violence and experience maltreatment, increases children’s chances for negative outcomes in life (Hughes, 1989). In a cross sectional study of preschoolers, Graham-Bermann and Seng (2005) found that children who witnessed domestic violence and experienced abuse were at high risk of having more health problems. Edwards, Holden, Felitti, and Anda (2003) examined the effects of maltreatment and domestic violence in childhood on adult’s mental health. They found that mental health scores decreased as the number of abuse types experienced increased (Edwards et al., 2003).

Domestic violence and maltreatment are both influenced by stressors in and outside the home (T. Herrenkohl et al., 2008). These stressors include low SES, substance abuse, mental health disorders, crime, lower parent education, financial or family stress, and neighborhood

poverty (Dong et al., 2004; Hartley, 2002; T. Herrenkohl et al., 2008; Margolin & Gordis, 2003). Environmental stressors may be increase the risk for both maltreatment and domestic violence (Margolin & Gordis, 2003).

Family structure. While studies have found relationships between single parenthood, increased family size and maltreatment, these relationships may have moderating variables (Sedlak & Broadhurst, 1996; Stith et al., 2009). In a national incidence study of maltreatment, Sedlak and Broadhurst found that children who lived with a single biological parent and a co-habiting partner were most likely to be maltreated and were eight times as likely to be maltreated than children living with both biological parents. In a meta-analysis of risk factors for maltreatment, researchers found a small, but significant relationship between single-parent households and maltreatment (Stith et al., 2009). However, neither of these studies controlled for other variables that may have co-occurred and influenced these statistics.

In their national study, Sedlak et al. (2010) found a nonlinear trend for the relationship between family size and maltreatment. Households with the largest number of children (four or more) had the highest likelihood for maltreatment, followed by households with one child, households with three children, and households with two children. Stith et al. (2009) found that family size was moderately associated with neglect and minimally associated with physical abuse. Again, these results need to be interpreted with caution because they did not control for other potentially co-occurring factors.

Parent-child interactions. The relationship between the parent and the child is another family characteristic that is associated with maltreatment. One meta-analysis found that the parent-child relationship was strongly related to neglect and moderately related to physical abuse (Stith et al., 2009). Children who have been maltreated have been found to have insecure

relationships with their parents (Baer & Martinez, 2006). Within the parent-child relationship, mothers who maltreat their children have been found to be less likely to provide support to their children and understand their children's emotional expression, while their children have been found to expect to receive less maternal support (Shipman & Zeman, 2001). Also, parents who are physically abusive toward their children are more likely to use harsh parenting strategies than positive ones (Black et al., 2001a).

The coercion model, which helps explain child behavior as a risk factor for maltreatment, also may explain why parent-child interactions and maltreatment are mutually reinforcing (Scaramella & Leve, 2004). Through a pattern of reinforcement, parent behavior may amplify children's negative behavior and children's difficult behavior may then intensify parent's behavior (Scarborough & McCrae, 2008).

Community risk factors.

Neighborhood unemployment and poverty. Unemployment is a community risk factor that has been identified as being predictive of maltreatment (Sedlak et al., 2010). Sedlak and colleagues found that children living with parents who were not in the labor force (i.e., not looking for employment) or were unemployed (i.e., not employed, but actively searching for a job) were two to three times as likely to be maltreated, however this study did not examine the link between unemployment, SES, and parental age. In addition, in a meta-analysis of risk factors for maltreatment, unemployment was minimally and moderately related to physical abuse and neglect, respectively (Stith et al., 2009).

Living in impoverished neighborhoods and families is another risk factor for child maltreatment. Using census and administrative agency data, Coulton, Korbin, Su, et al. (1995) found that poverty, when combined with high numbers of children per adult, population turn

over, and concentration of female-headed households places the highest risk on children. Drake and Pandey (1996) also analyzed census and administrative data and found neighborhood poverty to be related to all forms of maltreatment, with neglect being the most common form of maltreatment in the most impoverished neighborhoods. In one national incidence study, Sedlak et al. (2010) found that children in low socioeconomic households (less than \$15,000 annual income) were at the highest risk for maltreatment. These children were approximately three times more likely to be abused and seven times more likely to be neglected than children from other income brackets.

One of the leading theories of the connection between poverty and maltreatment is that living in poverty increases parental stress which then leads to maltreatment (Gutman et al., 2005). For example, studies have shown that parents in poverty and who are under stress are more punitive toward their children (Conger et al., 1992; Dodge, Pettit, & Bates, 1994). Gutman and colleagues also found that parents with low incomes who reported greater financial stress and parental distress had more negative relationships (as measured by level of conflict) with their children.

A second theory is that parents living in poverty either are socially isolated or the effects of social support on parenting are not as potent, which increases the risk for maltreatment (Ceballo & McLoyd, 2002; Hashima & Amato, 1994; Stith et al., 2009). Hashima and Amato (1994) found that in low-income families, parental report of punitive behavior was associated with low perceived social support. Ceballo and McLoyd (2002) also found that poverty, in the family and neighborhood, weakened the effects of instrumental (e.g., access to resources) and emotional social support on positive parenting.

While it is unclear which theory underlies the relationship between poverty and maltreatment, poverty remains one of the strongest predictors of whether a child experiences adversity, such as maltreatment (Odgers & Jaffee, 2013). Poverty creates an environment within which families are affected by numerous stressors that vary in severity. These stressors most likely interact and form a complex web that increases the chances of maltreatment.

Summary of risk factors. There are numerous factors, operating at different levels that increase the chance of a child being maltreated. Individual child factors include age, disability, and behavior (Sobsey, 2002; DHHS, 2013). Parental characteristics include history of being abused as a child, mental health, age, self-esteem, social support, and stress (Black et al., 2001a; Stith et al., 2009; Thornberry et al., 2012). Families characterized by domestic violence, low SES, unemployment, single-parent households, large number of children per adult in households, and negative parent-child interactions have also been found to be at increased risk for child maltreatment (Appel & Holden, 1998; Stith et al., 2009). In addition, children in impoverished communities have been found to be at heightened risk for victimization (Coulton, Korbin, Su, et al., 1995).

Adverse Childhood Experiences and/or Polyvictimization

This literature review thus far has discussed the consequences of maltreatment on children's academics and social-emotional well-being as well as the risk factors for maltreatment. While it is important to understand the individual consequences and risk factors for child maltreatment, it is equally important to understand the cumulative effects of maltreatment and its risk factors on children's academic and social-emotional well-being (Anda et al., 2002; Edwards et al., 2003).

Much of the research evaluating the effects of experiencing multiple types of maltreatment has been with adults and adolescents (Higgins & McCabe, 2001). This research indicates that adults and adolescents who experience more than one form of maltreatment have worse outcomes than those who experience one or no type of maltreatment (Arata, Langhinrichsen-Rohling, Bowers, & O'Brien, 2007; Arata, Langhinrichsen-Rohling, Bowers, & O'Farrill-Swails, 2005; Higgins & McCabe, 2001). For example, in a 2001 literature review on long-term correlates of multiple types of child maltreatment among adults, Higgins and McCabe concluded that adults who experienced multiple forms of maltreatment had greater adjustment problems (e.g., mental illness, low self-esteem, suicide) than adults who experienced only one form of maltreatment. In addition, another group of researchers found that in a sample of 1,452 middle and high school students, greater symptoms of negative affect and externalizing behavior were associated with three versus two, and two versus one type of maltreatment (Arata et al., 2007).

Researchers also have examined the effects on adults of experiencing one or more types of maltreatment and other risk factors that increase the likelihood of an undesired outcome or problem (Centers for Disease Control and Prevention (CDC), 2013). The Adverse Childhood Experiences (ACE) study is an example of research that is trying to understand the cumulative effects of maltreatment and its risk factors on later health and emotional well-being (CDC, 2013). The ACE study separates adverse childhood experiences into three domains—abuse (emotional, physical, and sexual), neglect (emotional and physical), and household dysfunction (mother treated violently, household substance abuse, household mental illness, parental separation or divorce, and incarcerated household member). There are 17,337 participants in this study, with ages ranging from 19 to over 60 years old (CDC, 2013).

One study using ACE data on 8,667 adults examined the relationship between the combination of ACEs and adult mental health (Edwards et al., 2003). The researchers found that poorer mental health scores were associated with higher number of abuse categories. Specifically, mental health scores worsened as number of abuse types increased. In addition, an emotionally abusive family environment further exacerbated the mental health outcomes of adults who had experienced abuse (Edwards et al., 2003).

Another study using ACE data examined the relationship between adverse childhood experiences and the risk of depression and alcoholism in adulthood (Anda et al., 2002). The study had 9,346 adults who reported how many of the nine adverse childhood experiences they had experienced. The risk of having all nine adverse experiences was greatest among the adults who reported having parents who abused alcohol. In addition, adults had a higher likelihood of being depressed or abusing alcohol as their number of reported adverse childhood experiences increased (Anda et al., 2002).

While research has shown negative long-term outcomes from adverse childhood experiences, there appears to be limited research on the more immediate effects of adverse childhood experiences on children. One group of researchers performed a study with 167 students, ages 7 to 18 in the United States and concluded that experiencing multiple forms of maltreatment was more detrimental to enjoyment of living and hopes for the future than experiencing a single form of maltreatment (Ney, Fung, & Wickett, 1994). However, their study only evaluated children in psychiatric settings and did not use standard measures, which limits the generalizability of the findings (Ney et al., 1994). Another study examined the effect of exposure to multiple forms of victimization (e.g., being abuse, witnessing violence) on 2,030 children, ages 2 to 17 years old, who lived in the United States (Finkelhor, Ormrod, & Turner,

2007). These researchers found that when polyvictimization (i.e., experiencing multiple types of victimization) was taken into account, it greatly reduced the impact of single forms of victimization on levels of trauma symptoms (Finkelhor et al., 2007).

It is evident that more research needs to be done to examine the additive effect of experiencing multiple types of maltreatment and other adverse childhood experiences. Specifically, research needs to examine these additive effects on children's early academic and social-emotional development. Additional research in this area will help inform intervention and prevention programs on whether children with more adverse childhood experiences need more extensive support than those who experienced only one such experience to achieve optimal child academic and social-emotional development.

Early Childhood Prevention Programs for Maltreatment

As outlined in this paper, research shows that child maltreatment of various forms (physical, sexual, and emotional abuse as well as neglect) can detrimentally affect children at the point of disclosure and well beyond (T. Herrenkohl, 2011; Trickett & McBride-Chang, 1995). In addition, research points to a number of risk factors for child maltreatment (Stith et al., 2009). Therefore, it is of utmost importance to provide early intervention services that target maltreatment risk factors to help prevent first and repeated instances of child maltreatment from occurring.

Early Home Visitation Programs

Early home visitation is a service-delivery model that has been around since the late 1880s (Daro & McCurdy, 2007). Professionals (e.g., nurses) or paraprofessionals visit the home and provide support and education surrounding four common objectives—to prevent maltreatment, to improve child health, to optimize child functioning and development, and to

increase positive parenting practices. The home visitor tries to fulfill these objectives through modeling positive parent-child interactions, educating parents about infant health and development, providing social support, and helping parents connect with other service providers or institutions (e.g., education) (Daro & McCurdy, 2007). Home visitation can occur as early as prenatally and typically continues until children are five years old (Hahn et al., 2003). Home visitation programs vary in length, populations served (e.g., low income families, teen parents), and who (e.g., nurses, paraprofessionals) provides the in-home services (Hahn et al., 2003).

While home-visiting programs are considered strategies for preventing maltreatment, few programs use child abuse and neglect as an outcome measure (Howard & Brooks-Gunn, 2009). Multiple meta-analyses and systematic reviews have evaluated home visitation programs' impact on reducing maltreatment and there have been mixed conclusions (Hahn et al., 2003; Howard & Brooks-Gunn, 2009; Mikton & Butchart, 2009; Sweet & Appelbaum, 2004). Two reviews conclude that home visiting programs reduce child and family risk factors associated with child maltreatment (e.g., parenting practices), but it is unclear as to whether home visitation reduces maltreatment itself (Howard & Brooks-Gunn, 2009; Mikton & Butchart, 2009). A meta-analysis of 60 programs reported similar conclusions—there was a significant reduction in potential abuse and neglect, but the effect of home visitation on reported or suspected maltreatment was nonsignificant (Sweet & Appelbaum, 2004). However, another meta-analysis of 26 studies determined that home visiting programs had a 39 percent median reduction in child maltreatment, as measured by child protective services reports, parent reports, visitor reports, and clinic reports (Hahn et al., 2003).

Nurse-Family Partnership. One of the most well-known home visiting program in the United States is the Nurse-Family Partnership (NFP) (Howard & Brooks-Gunn, 2009) and it is

considered by multiple organizations to be effective in reducing maltreatment (The California Evidence-Based Clearinghouse for Child Welfare, 2013; University of Colorado Boulder, 2012–2013). NFP is a home-visiting program in which registered nurses work with low-income, first-time mothers prior to and after their child's birth until the child is two years old. Nurses visit with mothers weekly for the first six weeks following birth, every other week until the child is 20 months old, and then vary depending on the needs of the mother and child. The nurses have three main goals during these sessions: improve pregnancy outcomes; improve child health, development and safety through competent caregiving; and enhance parent development by promoting employment, education attainment, and pregnancy planning (NFP, 2011a).

NFP has been heavily researched on its impact in reducing maltreatment and its associated risk factors, such as maternal unemployment and harsh disciplining practices (NFP, 2011b). One study found that during the first two years of life, mothers considered at highest risk for inappropriate caregiving (i.e., poor, teenage mothers) who were visited by nurses, engaged in significantly less restriction and punishment, provided significantly more appropriate play materials, and their children were seen significantly less frequently in emergency rooms during their first two years of life (Olds, Henderson Jr, Chamberlin, & Tatelbaum, 1986). In a 15-year follow up of the same sample of mother-child pairs, the researchers found that mothers who were visited by nurses were significantly less likely to be identified as perpetrators of child maltreatment (Olds et al., 1997). The difference between groups was especially apparent with women who were unmarried and came from low socioeconomic backgrounds. In addition, mothers in NFP had fewer subsequent births, had longer durations between first and second births, engaged in less substance abuse, and had fewer arrests (Olds et al., 1997).

Healthy Families America. Another widely implemented home-visiting program is Healthy Families America (HFA), which was modeled after the Hawaii Healthy Start project (Howard & Brooks-Gunn, 2009). HFA is designed for families who are at-risk for maltreating their children (DuMont et al., 2008). HFA does not require women to be first-time parents, so some of the women in HFA already may be perpetrators of child maltreatment. Because of this, HFA is considered a secondary prevention program (Howard & Brooks-Gunn, 2009). HFA begins either when a woman is pregnant or has just given birth and is offered until the child turns 5 years old (Prevent Child Abuse America, 2013). During home visits, a paraprofessional meets with a mother to provide support around positive parenting skills, optimal child development, preventing child maltreatment, and improving maternal self-efficacy (Howard & Brooks-Gunn, 2009).

Numerous studies have examined the HFA's efficacy in reducing adverse childhood experiences (Harding, Galano, Martin, Huntington, & Schellenbach, 2007). Some reviews indicate that HFA is effective in reducing child maltreatment (Harding et al., 2007). However, neither the California Clearinghouse of Evidence-Based Practice or Blueprints for Healthy Youth Development name HFA as an effective program because there are studies that indicate HFA does not reduce maltreatment (The California Evidence-Based Clearinghouse for Child Welfare, 2013; University of Colorado Boulder, 2012–2013).

Several studies also have evaluated HFA's impact on risk factors associated with child maltreatment and have found mixed results (Harding et al., 2007). Studies have found that mothers enrolled in HFA while they were pregnant had fewer birth complications and lower rates of low birth rates than control groups. Research also has found mixed results on whether parents enrolled in HFA go to more well-baby visits, have fewer subsequent births, engage in more

education and employment, receive more social support, and have lower rates of domestic violence and substance abuse than control groups (Harding et al., 2007)

Even though one of HFA's goals is to promote optimal child development (Prevent Child Abuse America, 2013), there appears to be little research that has examined children's academic, behavioral, and social development. Cullen, Ownbey, and Ownbey (2010) examined the frequency of children who graduated from the program to be at-risk for social and emotional concerns in relation to the norming sample for a questionnaire. The researchers found that at the end of the program, children in HFA had higher levels of competencies than the norming sample, as measured by the frequency with which their behaviors were considered at-risk (i.e., all children in HFA had normal levels of social and emotional competencies) (Cullen et al., 2010).

Project SafeCare. Project SafeCare, originally known as Project 12-Ways, is a structured, 12- to 18-week behavioral intervention that targets positive and effective parenting interactions, home safety (i.e., maintaining hazard free homes), and child health (i.e., treating illnesses and maximizing health safety) (The California Evidence-Based Clearinghouse for Child Welfare, 2013). Project SafeCare targets caregivers who are at-risk for maltreating their children and/or have a history of child maltreatment. The program can be used with children ages birth to five years old (The California Evidence-Based Clearinghouse for Child Welfare, 2013).

Project SafeCare has been shown to be an effective secondary prevention program for reducing child maltreatment (Chaffin, Hecht, Bard, Silovsky, & Beasley, 2012; Gershater-Molko, Lutzker, & Wesch, 2002). Gershater-Molko et al. (2002) compared maltreatment recidivism rates of parents enrolled in Project SafeCare with parents enrolled in Family Preservation, a nationwide program that is time limited, family centered, home based, and crisis oriented. The researchers found that Project SafeCare was more successful than the Family Preservation

Program in preventing maltreatment with parents who had high rates of maltreatment prior to the intervention. However, both programs had less success with families who had low rates of maltreatment prior to the intervention (Gershater-Molko et al., 2002). Chaffin et al. (2012) compared Project SafeCare with other home-based services in a statewide implementation study and found that Project SafeCare demonstrated significant reductions in child maltreatment reports, while the other home-based services produced smaller and occasionally significant effects in maltreatment recidivism.

Research also has examined the effects of Project SafeCare on risk factors for maltreatment, such as positive parenting behavior (Gershater-Molko, Lutzker, & Wesch, 2003; Metchikian, Mink, Bigelow, Lutzker, & Doctor, 1999). Project SafeCare has been shown to increase parents' knowledge of hazardous items for children and commitment to keeping the hazardous items inaccessible to children (Gershater-Molko et al., 2003; Metchikian et al., 1999). In addition, in a study of 80 families, Gershater-Molko et al. (2003) found that parents who had previously maltreated their children or were deemed at-risk for engaging in maltreatment had increased levels of knowledge in child health following program completion. Parents in the maltreatment group also evidenced significantly more positive parenting behaviors at the completion of the program (Gershater-Molko et al., 2002).

Parent Training

Parent training is a service delivery model in which parent and child risk factors associated with maltreatment, such as parent-child interactions and child problem behavior, are targeted (Daro & McCurdy, 2007). Parent training involves teaching parenting practices that increase positive interactions between parents and children, increase child compliance, and decrease child defiance (Lundahl, Risser, & Lovejoy, 2006). Two meta-analyses show that

parent training is effective in improving parent-child interactions (Lundahl et al., 2006; Serketich & Dumas, 1996); however children and parents from disadvantaged families benefitted the least from the programs (Lundahl et al., 2006). There is limited but growing research on the impact of parent education and support groups on maltreatment rates (Daro & McCurdy, 2007).

The Incredible Years. The Incredible Years (Webster-Stratton, 2000) is a series of three separate curricula that are 14 to 30 weeks long and are for parents, children, and teachers (The California Evidence-Based Clearinghouse for Child Welfare, 2013). The main goals of the program are to promote emotional and social competence, and to prevent, reduce, and treat behavior and emotional problems in young children, ages four to eight years old. In the parent group, parents learn how to do child-directed play, provide praise and incentives, set limits, handle misbehavior, and be a social, emotional, and academic coach for their children. The children are taught curricula around four main areas—emotional management, social skills, problem solving, and classroom behavior (The California Evidence-Based Clearinghouse for Child Welfare, 2013). Teachers are trained in classroom management strategies that promote social and academic competence (Webster-Stratton, Reid, & Hammond, 2001).

To date, there appear to be no studies that have evaluated whether the Incredible Years reduces maltreatment rates; however, research results have shown that enrollment in the Incredible Years is connected to reductions in risk factors associated with child maltreatment with preschool-aged children (Daro & McCurdy, 2007). In one randomized control trial of 394 mother-child dyads, Webster-Stratton (1998) found that parents who were enrolled in the Incredible Years used less harsh discipline and more positive parenting compared with parents in the control group. Children in the intervention group were observed to exhibit fewer conduct problems and more positive affect at home, but did not differ from the control group in social

competence. At school, children in the Incredible Years had higher social competence than control children, but did not differ in externalizing behaviors. All these results were maintained one year post intervention and children in the program exhibited fewer externalizing behaviors one year after the conclusion of the program than the control group (Webster-Stratton, 1998).

Another repeated, randomized trial of mother-child dyads ($n = 272$) showed that parents enrolled in the Incredible Years had significantly lower negative parenting and higher positive parenting scores than parents in the control group (Webster-Stratton et al., 2001). In addition, children in the program had significantly fewer conduct problems at school, and those whose parents attended six or more intervention sessions had significantly reduced conduct problems at home. One year following the intervention, parents who attended nine or more sessions in year one plus year-two booster sessions had significantly lower negative parenting and higher positive parenting (Webster-Stratton et al., 2001).

Parent-Child Interaction Therapy

Parent-Child Interaction Therapy (PCIT) was originally created for families who had children ages 3 to 6 years old with significantly high externalizing behaviors (Thomas & Zimmer-Gembeck, 2011). However, the program has been adapted for parents who are physically abusive toward their 4- to 12-year-old children (The California Evidence-Based Clearinghouse for Child Welfare, 2013). The program has two main goals—improve the parent-child relationship (e.g., increasing parent's ability to praise, describe and reflect child's behavior and emotions) and increase the parent's parenting skills (e.g., maintain consistent limits, ignore minor disruptive behaviors, and use effective time-out strategies). Typically, parents attend 10 to 20 weekly sessions (The California Evidence-Based Clearinghouse for Child Welfare, 2013).

There is limited research as to whether caregiver involvement in PCIT reduces maltreatment rates (Lanier, Kohl, Benz, Swinger, & Drake, 2012; Thomas & Zimmer-Gembeck, 2011; Timmer, Urquiza, Zebell, & McGrath, 2005). Both Timmer et al. (2005) and Thomas and Zimmer-Gembeck (2011) found that following program completion, child abuse potential significantly reduced compared with pretreatment potential. In addition, one study showed that parents who completed PCIT were less likely to be reported to Child Protective Services than parents who dropped out of the program (Thomas & Zimmer-Gembeck, 2011). Interestingly, Lanier et al. (2012) did not find future risk of report to be related to parent drop out. Unfortunately Lanier et al. (2012) did not have a comparison group, but a study of recidivism in the same geographic area revealed a higher rate of recidivism than was found in the study.

While few studies have measured the effects of PCIT on maltreatment rates, multiple studies have demonstrated the effectiveness of PCIT on reducing risk factors (e.g., maternal perceptions of child as a stressor, child externalizing behaviors, and poor parent-child interactions) associated with child maltreatment (Thomas & Zimmer-Gembeck, 2011; Timmer et al., 2005). Several studies showed that following program completion, parents reported less stress due to child and parent factors and reported improved child behavior (Thomas & Zimmer-Gembeck, 2011, 2012; Timmer et al., 2005). In addition, parents in the PCIT group were observed to have improved parent-child interactions (Thomas & Zimmer-Gembeck, 2011, 2012).

Triple P: Positive Parenting Program.

Triple P is a public health approach to improving parenting and reducing behavior and emotional problems in children and teenagers (Prinz, Sanders, Shapiro, Whitaker, & Lutzker, 2009; Sanders, 1999; Triple P, 2013). Triple P is based on five core principles of positive parenting—provide a safe and engaging environment, promote a positive learning environment,

use assertive discipline, maintain reasonable expectations, and take care of oneself as a parent. In addition, Triple P includes five intervention levels of increasing intensity. Level One is a universal communication strategy meant to reach all parents and destigmatize needing parenting help. Level Two involves brief consultation or parenting seminars for parents who generally are coping well but have one or two concerns about their child's behavior or development. Level Three is targeted assistance for parents with children who have mild behavior problems. Level Three may involve four to five phone consultations with primary care providers or small group sessions that target specific behavior problems. The difference between Level Two and Three is that Level Three involves active skills training. Level Four is for parents with children who have challenging behavior problems. This level may involve group meetings, individual counseling, on-line programs, or self-help programs (e.g., workbooks). Level Five provides the most intensive support to families with serious problems. Parents at this level often have other problems within the family, such as mental health issues and partner conflict and/or are considered at-risk of child maltreatment. Parents receive instruction targeting positive parenting practices (e.g., coping strategies for high stress situations and anger management) (Prinz et al., 2009; Triple P, 2013).

Two studies have evaluated the effects of Triple P on child maltreatment (Prinz et al., 2009; Sanders et al., 2004). Prinz et al. (2009) performed a population-based study in North Carolina, involving stratified random assignment of 18 counties to examine the effects of Triple P on child maltreatment prevention. Following the two-year intervention period, counties in the Triple P group had significantly lower substantiated child maltreatment cases, out-of-home placements, and child injuries resulting from maltreatment than the control counties (Prinz et al., 2009).

Sanders et al. (2004) performed a randomized control trial with 98 parents who had been referred by Child Protective Services because they were having difficulties managing their anger with their preschool-aged children. Parents were assigned to either a standard parenting training program or a standard parenting training program plus attributional retraining and anger management. After the intervention, there was a significant decrease in child abuse potential and the parents in the “standard plus” showed significant additional improvement in this area (Sanders et al., 2004).

Research also shows that Triple P reduces risk factors associated with maltreatment, such as child behavior problems, harsh parenting strategies, and parental high stress (Nowak & Heinrichs, 2008; Sanders et al., 2004). Nowak and Heinrich performed a meta-analysis on 55 studies that evaluated the Triple P program. The researchers found that Triple P improves parenting skills, child problem behaviors, and parental well-being. The largest effects for parenting and child measures were in Levels Four and Five. In addition, Triple P appears to be more effective for younger children and has its largest effects on parents in the more intensive formats (Nowak & Heinrichs, 2008).

Trauma-Focused Cognitive Behavioral Therapy

Trauma-Focused Cognitive Behavioral Therapy (TF-CBT) is a tertiary prevention program for dealing with the effects of experiencing a traumatic event. TF-CBT is one of the most widely disseminated mental health interventions for children ages 3 to 18 years old (Cary & McMillen, 2012; The California Evidence-Based Clearinghouse for Child Welfare, 2013). TF-CBT was originally designed to treat psychological trauma resulting from child sexual abuse, but has since been used for other traumas as well (e.g., witnessing domestic violence) (Substance Abuse and Mental Health Services Administration, 2013). TF-CBT is a highly structured

conjoint parent/child intervention that includes the following eight elements—psychoeducation and parenting skills, relaxation, affective expression and regulation, cognitive coping, trauma narrative development and processing, in vivo gradual exposure, conjoint parent/child sessions, and enhancing safety/future development (Cary & McMillen, 2012). TF-CBT usually is delivered in 12 to 16 sessions, each lasting approximately 90 minutes (Cary & McMillen, 2012; Cohen, 2003).

Multiple studies have evaluated the effects of TF-CBT on posttraumatic symptoms of children who have been sexually abused (Cohen & Mannarino, 1996, 1997; Deblinger, Mannarino, Cohen, & Steer, 2006; Deblinger, Steer, & Lippmann, 1999). Researchers have found that children who received TF-CBT have fewer symptoms of PTSD following treatment, as well as reductions in sexualized behaviors, depression, and anxiety (Cohen, Mannarino, & Knudsen, 2005; Deblinger et al., 2006; Deblinger et al., 1999). In addition, parents and caregivers reported decreased emotional distress following treatment (Deblinger et al., 2006)

Two studies specifically examined the program's effectiveness with preschool-aged children (Cohen & Mannarino, 1996, 1997). Cohen and Mannarino found that children who received TF-CBT (at that time named cognitive-behavioral therapy adapted for sexually abused preschool children or CBT-SAP) had significantly lower parent rating scores in sexualized behaviors, internalizing behaviors, and problematic behaviors compared with children in the nondirective supportive therapy (NST). In addition, a higher percentage of preschool children receiving TF-CBT had significant behavior problems reductions from pre-treatment when measured at post treatment (12 to 16 weeks later) (Cohen & Mannarino, 1996). In a one-year follow-up, children who had received TF-CBT continued to show maintenance or improvement in sexualized behaviors and problematic behaviors, while the children in the NST group did not

improve across the follow-up period. In addition, fewer children in the TF-CBT group were experiencing clinically significant behavior problems in the follow-up period than children in the NST group (Cohen & Mannarino, 1997).

Child Assault Prevention Programs

In contrast to many of the other interventions for preventing maltreatment, child assault prevention programs specifically are geared toward the potential victim (versus the potential perpetrator) (Daro & McCurdy, 2007). Child assault prevention programs are universal interventions that provide all children with information on sexual and physical abuse, how to avoid unsafe situations, and what to do if they are abused. The programs are implemented in schools, as well as other child programs (e.g., after-school programs and Boy Scouts) (Daro & McCurdy, 2007). The programs vary in length, ranging from less than 90 minutes to over 320 minutes over multiple weeks (Zwi et al., 2008).

Multiple meta-analyses have shown that child assault prevention programs are effective in increasing children's knowledge and skillset in this area (Daro & McCurdy, 2007; Rispens, Aleman, & Goudena, 1997; Zwi et al., 2008). Research examining long-term impact shows that children retained knowledge for at least two to three months and up to one year following the intervention (Zwi et al., 2008); however, younger children and children from low socioeconomic families appeared to lose their knowledge over time (one to six months following program completion) (Rispens et al., 1997). It also appears that younger children (5.5 years old or younger) benefit more from the programs than older children; however, as previously mentioned, the effect disappears over time. Furthermore, while harm to children was not extensively studied, some researchers found negative impacts on children's stress levels after completing the prevention program (Zwi et al., 2008). In addition, due to poor data collection in studies, Zwi et

al. were not able to conclude whether there were more disclosures of abuse following program completion.

Talking About Touching. Talking About Touching is a school-based sexual abuse curriculum for preschool through third grade (Committee for Children, 2012). The curriculum is designed to increase children's knowledge and adherence to safety rules, increase their assertiveness, and increase their understanding of unsafe/safe and unwanted/wanted touches. The program is 14 weeks long and varies from 10 to 30 minutes per session. Teachers lead the discussions, which include the use of books, videos, and photo cards. Talking About Touching has limited but promising research; studies indicate that children increased their knowledge related to sexual abuse after completing the curriculum (Committee for Children, 2012; Madak & Berg, 1992).

Therapeutic Childcare

Therapeutic childcare (TCC) is an early intervention and prevention program for children, ages one month to five years old who are at-risk for child maltreatment and also may be experiencing mental health and/or behavioral problems (County of Napa, 2009; Department of Early Learning (DEL), 2010). The main goal of TCC is to break the cycle of abuse and neglect through supporting child health and development, strengthening parent-child relationships, and providing family support (County of Napa, 2009; Moore et al., 1998). While TCC appears to be implemented in multiple states (County of Napa, 2009; Dailey, 2013; Department of Early Learning (DEL), 2010), limited research evaluating this type of program exists in the literature (Moore et al., 1998; Oates, Gray, Schweitzer, Kempe, & Harmon, 1995).

Purpose of the Study

The purpose of the study is to provide information on service outcomes at Childhaven. Childhaven, a therapeutic childcare center in the Pacific Northwest is an early childhood program that enrolls children who have been maltreated or are considered at-risk for maltreatment (Department of Early Learning (DEL), 2010). Childhaven provides therapeutic childcare (TCC) to children ages one month to five years, at three centers in Washington State (Department of Early Learning (DEL), 2010). Children are referred to Childhaven because they have been maltreated or are considered at-risk for maltreatment. Childhaven's main goals are to mitigate the long-term effects of maltreatment, and reduce the rate of recidivism (Moore et al., 1998). Childhaven's TCC services include strength-based assessments, diagnosis, and comprehensive child- and family-focused treatments that teach pro-social skills and reinforce positive interactions. Children receiving TCC spend at least four hours a day, five days a week in a therapeutic classroom with a high teacher-to-child ratio (1:3 – 1:5). Each child has an Individual Treatment Plan that includes goals based on the assessment, diagnosis, classroom interests, daily classroom routine, and relationships the child has with others (e.g., teacher, peers). Childhaven also offers evidence-based parent education (e.g., Parent-Child Interaction Therapy and Promoting First Relationships) to strengthen the relationship between the child and caregiver (Department of Early Learning (DEL), 2010).

To date, there has been only one published study on the effects of Childhaven on children's behavioral functioning (Moore et al., 1998). In the original unpublished study, 61 children between the ages of 1 and 24 months were assigned to either the Childhaven program (therapeutic childcare) or to standard Child Protective Services (CPS). Twelve years later, researchers located 69 percent of the original sample and did a follow-up study. Results from the

data collection showed that on average, children who had been at Childhaven had homes that offered significantly more support for child development than the control group. In terms of behaviors, significantly more children in the control group were rated in the clinically significant range for overall internalizing behaviors, anxiety/depression, and social problems than children who received Childhaven's services. There were no differences between the Childhaven group and control group on grade point averages or special education placement (Moore et al., 1998).

While this earlier research has shown that therapeutic services provided at Childhaven may reduce certain longer-term outcomes associated with child maltreatment, little is known about how services received at the agency relate to early childhood development and early school success (Moore et al., 1998). Early school success is an important predictor of later educational and developmental goals and, thus, a topic of utmost importance to prevention and intervention researchers.

This study focused specifically on two program outcomes— early social-emotional development and early academic success. The first aim of this study is to examine social skills and behavior in a sample of children who attended Childhaven, and investigate whether differences exist between these children depending on number of reasons for referral (e.g., neglect, physical abuse, parental substance abuse) and length of enrollment at Childhaven. Length of enrollment was used to better understand the impact of number of risk factors on children's social-emotional and academic outcomes. The second aim of this study was to track a subsample of children through their kindergarten year and evaluate whether they are academically and behaviorally ready for kindergarten and whether differences exist among those served by the agency according to the number of reported risk factors for referral and length of enrollment at Childhaven. Specifically, this part of the study examined children's academic

readiness prior to kindergarten entry, children's social skills and problem behaviors prior to kindergarten entry and at two time points during kindergarten, and children's academic and social-emotional competence at two time points during their kindergarten year.

The number of reasons for referral was chosen as an independent variable for two reasons. The first is that research shows an additive effect of adverse childhood experiences on outcomes in adulthood (Anda et al., 2002; Edwards et al., 2003), but there appears to be limited information on the differential effects of single versus multiple adverse childhood experiences on developmental outcomes in early childhood. The second reason is that a better understanding of whether differences exist between children with one adverse experience versus more than one can inform Childhaven practices. To the extent that children with more than one reason for referral have more negative academic and social-emotional outcomes, an agency may choose to provide more intensive support to children who enroll in the program with more than one referral reason.

The length of enrollment at Childhaven was chosen as the other independent variable for two reasons. The first reason is that there does not appear to be research on the effects of length of enrollment on social-emotional development and academics in early prevention and intervention programs. The second reason is to explore whether an interaction effect exists between the number of reasons for referral and length of enrollment. Specifically, I was interested in whether the additive effect of having multiple reasons for referral was mitigated by the length of time enrolled at Childhaven. The relationship between these two variables may have implications for the program when thinking about how to best serve this population. However, it is important to note the limitations of this variable. A child may attend Childhaven for a shorter amount of time for several reasons including being adopted, losing outside funding,

moving out of the catchment area (living too far away for Childhaven to transport child to the center), having a case manager decide that the child no longer needs therapeutic services, and having a parent choose to stop services. These factors make it difficult to understand the impact of length of enrollment on children's social-emotional and academic development because length of enrollment does not necessarily correlate to need for services. For example, a shorter enrollment, in some cases, reflects positive changes that further reduce previously assessed reasons for referral and thus does not point to a premature termination of services for some children who attend Childhaven.

This study investigated the following questions with the entire sample:

- I. What is the relationship between number of reasons for referral (e.g., neglect, sexual abuse, physical abuse, emotional abuse, in-utero drug exposure, parental substance abuse, parental mental health, parental developmental delay) (1 vs. >1) and length of enrollment (< 2 years vs. \geq 2 years) at Childhaven on case manager ratings of current child behavior?
- II. What is the relationship between number of reasons for referral and length of enrollment at Childhaven on case manager ratings of current child social skills?

The following are the hypotheses for the research questions regarding the entire sample of children:

- I. Children who have one referral reason will have better behavior ratings than children with more than referral reason. Children who were enrolled at Childhaven for two or more years will have better behavior ratings than children who were enrolled for fewer than two years.
- II. Children who have one referral reason will have better social skills ratings than children with more than referral reason. Children who were enrolled at Childhaven for two or more years will have better social skills ratings than children who were enrolled for fewer than two years.

The study will investigate the following questions with the subsample of children ($n = 29$):

- I. What is the relationship between the number of reasons for referral (1 vs. >1) and length of enrollment (< 2 years vs. ≥ 2 years) at Childhaven on social-emotional development over time?
 - a. What is the relationship between the number of reasons for referral and length of enrollment on guardian ratings of social skills over three time points (summer, fall, spring)?
 - b. What is the relationship between the number of reasons for referral for referral and length of enrollment on guardian ratings of problem behaviors over three time points (summer, fall, spring)?
 - c. What is the relationship between the number of reasons for referral for referrals and length of enrollment on guardian ratings of social-emotional competence over two time points (fall and spring)?
 - d. What is the relationship between the number of reasons for referral for referral and length of enrollment on teacher ratings of social skills over three time points (summer, fall, spring)?
 - e. What is the relationship between the number of reasons for referral and length of enrollment on teacher ratings of problem behaviors over three time points (summer, fall, spring)?
 - f. What is the relationship between the number of reasons for referral for referral and length of enrollment on kindergarten teacher ratings of social-emotional competence over two time points (fall and spring)?

- II. What is the relationship between the number of reasons for referral and length of enrollment on academic progress over time?
- a. What is the relationship between the number of reasons for referral and length of enrollment on children's kindergarten readiness test scores?
 - b. What is the relationship between the reported number of reasons for referral and length of enrollment on kindergarten teacher ratings of academic competence over two time points (fall and spring)?

The following are the hypotheses for the research questions regarding the subsample of children:

- I. Children who have one reported reason for referral will have better social-emotional development than children with multiple reasons for referral. Children who were enrolled for two or more years will have better social-emotional development than children who were enrolled for fewer than two years.
 - a. Guardians will rate children who had one reported reason for referral as having higher social skills than children who had multiple reasons for referral. Guardians will rate children who were enrolled for two or more years as having higher social skills than children who were enrolled for fewer than two years.
 - b. Guardians will rate children who had one reason for referral as having fewer problem behaviors than children who had multiple reasons for referral. Guardians will rate children who were enrolled for two or more years as having fewer problem behaviors than children who were enrolled for fewer than two years.
 - c. Guardians will rate children who had one reason for referral as having higher social-emotional competence than children who had multiple reasons for referral.

Guardians will rate children who were enrolled for two or more years as having higher social-emotional competence than children who were enrolled for fewer than two years.

- d. Teachers will rate children who had one reason for referral as having higher social skills than children who had multiple reasons for referral. Teachers will rate children who were enrolled for two or more years as having higher social skills than children who were enrolled for fewer than two years.
 - e. Teachers will rate children who had one reason for referral as having fewer problem behaviors than children who had multiple reasons for referral. Teachers will rate children who were enrolled for two or more years as having fewer problem behaviors than children who were enrolled for fewer than two years.
 - f. Teachers will rate children who had one reason for referral as having higher social-emotional competence than children who had multiple reasons for referral. Teachers will rate children who were enrolled for two or more years as having higher social-emotional competence than children who were enrolled for fewer than two years.
- II. Children with one reported reason for referral (e.g., neglect, sexual abuse, physical abuse, emotional abuse, in-utero drug exposure, parental substance abuse, parental mental health, parental developmental delay) will have better academic progress than children who had multiple reasons for referral. Children who were enrolled at Childhaven for two or more years will have better academic progress than children who were enrolled for fewer than two years.

- a. Children who had one reason for referral will have higher kindergarten readiness test scores than children who had multiple reasons for referral. Children who were enrolled at Childhaven for two or more years will have higher kindergarten readiness scores than children who were enrolled for fewer than two years.
- b. Kindergarten teachers will rate children who had one reason for referral as having higher academic competence than children who had multiple reasons for referral. Kindergarten teachers will rate children who were enrolled at Childhaven for two or more years as having higher academic competence than children who were enrolled for fewer than two years.

Chapter III: Methods

Participants

Children who at some point received services from Childhaven and were entering kindergarten in Fall 2012 were eligible to participate in the study. Children were excluded from the study if they had attended Childhaven for fewer than two months. In addition, three children were excluded because their caregivers did not speak English and therefore would not be able to complete the questionnaires. There were 155 subjects after these exclusions.

Subsample. In order to obtain a subsample of children for more data collection, Childhaven case managers (social workers) contacted caregivers (or State Case Workers if the child was a ward of the state) to ask if they would be willing to participate in the study. Of the 155 potential participants, 40 children had caregivers who agreed to participate in the more intensive investigation of academic and social-emotional development prior to and during the kindergarten year. The following is a breakdown of why the other 115 potential participants did not participate: 2 children were not entering kindergarten for the 2012–2013 school year, 20 caregivers/Case State Workers declined to participate; 10 caregivers were not contacted due to bad-ending relationships with Childhaven staff; 15 caregivers were not contacted because their children had been adopted and moved out of state or their children had been placed in alternative households; 38 caregivers had outdated contact information; 25 caregivers were not able to be reached via telephone or email; and 7 caregivers were not contacted by case managers for unspecified reasons.

Of the 40 caregivers who initially agreed to participate, 3 caregivers declined to continue participating. Demographic information for the entire sample ($n = 155$) and subsample ($n = 37$) is in Table 1.

Procedures

The current study is an exploratory analysis of data collected on former Childhaven clients. Data collection began in August 2012 and was completed in June 2013. Data were collected from Childhaven therapeutic childcare workers, kindergarten teachers, guardians, and former Childhaven clients who were entering kindergarten in the fall of 2012. Data collection procedures were approved by the Institutional Review Board at the University of Washington.

The variables used in this study were collected in three ways. Childhaven provided agency data on demographics and case manager ratings on items regarding parent and child functioning. The researcher tested the children on their kindergarten readiness. The researcher also provided questionnaires, in person or mailed, for therapeutic childcare workers, kindergarten teachers, and guardians to complete.

Individual Testing. The researcher and another graduate student administered the **Bracken Basic Concept Scale—Third Edition: Receptive (BBCS-3:R)** to children in August through September 2012. Children were given the test at a Childhaven branch, at their homes, or at a public library. Children were read aloud the questions. Specifics about the test are provided in the measures section.

Questionnaires. In August 2012, therapeutic childcare workers and guardians completed two questionnaires regarding their child's behaviors and social skills. In November and April 2013, Kindergarten teachers and guardians completed two questionnaires that assessed children's behaviors, social skills, and academic competence. Questionnaires either were mailed or directly given to the workers and guardians to fill out. Specifics about the questionnaires are provided in the measures section.

Measures

Case Manager Ratings. Childhaven case managers rated children and biological parents on numerous items regarding their functioning. Child functioning includes health, hygiene, emotional well-being, social skills with adults and peers, behavior, and overall development. Parent functioning includes social skills/social interaction; self-esteem, self-worth, and self-confidence; and knowledge of and ability to meet child's needs. The items that comprise these ratings are scored on a four-point Likert scale (Poor, fair, good, very good). The following items were taken from the case manager ratings:

1. **Current Child Behavior:** This current score is based on the average overall child behavior scores from the previous eight weeks of enrollment. Problem behaviors considered for this rating include: Extreme or frequent aggression, destructive behavior, injury risk-taking behavior, extreme opposition, deliberate negative behavior, bullying, inappropriate sexual behavior, self-injurious behavior. Test-retest reliability for this scale is .88 and inter-rater agreement is 78 percent (Armsden, 2013). Scores on this scale are significantly correlated with the following scores on the BASC-2: Hyperactivity, Attention Problems, Externalizing Problems, and Adaptability (negatively) (Armsden, 2013).
2. **Current Child Social Skills:** This current score is based on the average social skill scores from the previous eight weeks of enrollment. Social skills considered for this ratings include: Cooperation, self-control, empathy, ability to appropriately participate in group activity with peers, ability to appropriately get needs met, and understands social problem solving. Test-retest reliability for this scale is .82 and inter-rater reliability is 79 percent.

Risk factors for referral. Children are referred to Childhaven if they have been physically abused, emotionally abused, sexually abused, neglected, and/or were exposed to drugs in-utero. Children also are referred to Childhaven if their parents abuse substances, have mental health issues, and/or have developmental delays. An additional factor coded as “at-risk” is used for a child whose family is receiving assistance (e.g., Temporary Assistance for Needy Families (TANF)); is a younger sibling of a child who was maltreated; has older siblings who had been removed from parents care in past; has behavior problems or is developmentally delayed and has a parent who has poor parenting/behavior management skills; has a parent involved in gang activity; or is homeless. Children are coded as “0” if they have one risk factor for referral and “1” if they have multiple risk factors for referral.

Length of time enrolled at Childhaven. The length of time enrolled at Childhaven is measured by a categorical variable based on the number of years enrolled at Childhaven. Children who attended Childhaven for fewer than two years are coded as a “0” and children who attended Childhaven for more than two years are coded as a “1.” Two years was chosen as a cutoff point for two reasons. First, the two-year cutoff splits the subsample into two approximately even groups. The other reason is that Childhaven previously has found trends in which children who attend Childhaven for 15 to 18 months appear to have better outcomes when they withdraw from the program than children who were enrolled for shorter periods of time (Carter, 2011). These trends were not always statistically significant and also involved one-tailed t-tests (Carter, 2011), therefore, it is hypothesized that the impact of length of enrollment on outcomes may occur later than 15 to 18 months.

Bracken Basic Concept Scale—Third Edition: Receptive (BBCS-3:R). The BBCS-3:R is a norm-referenced, individually administered assessment that evaluates basic concept

development (Bracken, 2006). Children were administered the School Readiness Composite (SRC) from BBCS-3:R at Childhaven or their home in the summer prior to entering kindergarten. The SRC is designed to assess concepts that children need to know to be prepared for early formal education. The SRC is composed of five subtests—colors, letters, numbers/counting, sizes/comparisons, and shapes. The SRC is reported as a standard score, with a mean of 100 and standard deviation of 15.

Normative data for the BBCS-3:R is based on a sample of 640 children, ages 3 years to 6 years 11 months old, from the United States (Bracken, 2006). The average internal consistency reliability for the SRC was .95 and the test-retest reliability for the SRC was .84. Validity indicators (content, construct, and criterion) for the BBCS-3:R are adequate (Bracken, 2006).

Devereux Early Student Strengths Assessment (DESSA). Guardians and kindergarten teachers completed the DESSA in the fall and spring of kindergarten. The DESSA is a norm-referenced behavior rating scale that measures social-emotional competencies that serve as protective factors in children (LeBuffe, Shapiro, & Naglieri, 2009). The authors define overall social-emotional competency as a child's ability to "successfully interact with other children and adults in a way that demonstrates an awareness of, and ability to manage emotions in an age- and context-appropriate manner" (LeBuffe et al., 2009, p. 5). The DESSA consists of eight social-emotional competency subscales that comprise the overall Social-Emotional Composite. The eight subscales are self-awareness (child's realistic understanding of strengths and limitations), social-awareness (ability to interact with others in a way that shows respect, understanding of his/her impact on others, and uses cooperation), self-management (ability to control his/her emotions to complete task), goal-directed behavior (initiation of, and persistence in, completing tasks), relationship skills (ability to use socially acceptable actions that promote positive

connections with others), personal responsibility (ability to be careful and reliable in his/her actions), decision making (approach to problem solving), and optimistic thinking (attitude of confidence, hopefulness, and positive thinking regarding him/herself and his/her life situations).

Guardians and teachers rate the frequency of individual behaviors on a 5- point Likert scale (never, rarely, occasionally, frequently, and very frequently). The Social-Emotional Composite and subscales are displayed as T-scores, with a mean of 50 and a standard deviation of 10.

Normative data for the DESSA is based on a sample of 2,494 students from the United States who were in kindergarten through eighth grade (492 were in kindergarten) (LeBuffe et al., 2009). The internal consistency reliabilities range from .82 to .98 (guardians) and .89 to .99 (teachers), depending on the scale. The test-retest reliabilities range .79 to .90 (guardians) and .86. to .94, depending on the scale. Inter-rater reliabilities range from .63 to .80 (guardians) and .69 to .84 (teachers), depending on the scales. Validity indicators are adequate (LeBuffe et al., 2009).

Social Skills Improvement System (SSiS). Guardians and Childhaven TCCW's completed the SSiS prior to children entering kindergarten and guardians and kindergarten teachers completed the SSiS in the fall and spring of kindergarten. The SSiS is a norm-referenced behavior rating scale that measures three domains—social skills, problem behaviors, and academic competence (Gresham & Elliott, 2008b). The Social Skills composite evaluates a child's level of learned behaviors that promote positive interactions. There are seven subscales that represent the overall social skills composite—communication, cooperation, assertion (initiating behaviors), responsibility, empathy (showing concern and respect for others), engagement (joining activities, inviting others to join, initiating conversations, interacting well

with others), and self-control (responding appropriately to conflict). The Problem Behaviors composite measures the degree to which a child exhibits behaviors that interfere with displaying or learning social skills. The composite consists of five subdomains—externalizing behaviors, bullying, hyperactivity/inattention, internalizing behaviors, and Autism Spectrum (behaviors typically associated with Autism Spectrum Disorder). The Academic Competence Scale evaluates a child's performance in math and reading performance, motivation, parental support, and general cognitive functioning.

Guardians and teachers rate the frequency of a child's behavior on a four-point Likert scale (never, seldom, often, almost always). Overall subscale ratings are displayed as Below Average, Average, and Above Average. The Social Skills and Problem Behaviors Composites, as well as the Academic Competence Scale are displayed as standard scores, with a mean of 100 and standard deviation of 15.

Normative data for the SSiS is based on a sample of 4,700 children and adolescents, ages 3 to 18 years old in the United States. The internal consistency reliabilities for children ages 3 to 5 years old range from .76 to .96 (guardians) and from .75 to .97 (teacher), depending on the scale. The internal reliabilities for children ages 5 to 12 years old range from .74 to .95 (guardians) and .78 to .97 (teachers). The test-retest reliabilities range .70 to .92 (guardians) and .74 to .93 (teachers), depending on the scale. Inter-rater reliabilities range from .35 to .70 (guardians) and .38 to .71 (teachers), depending on the scales. Validity indicators (content, construct, and criterion) are adequate (Gresham & Elliott, 2008b).

Data Analyses

In order to address the research questions, two types of analyses were used, both using SPSS 19.0. Basic descriptive statistics including means, standard deviations, and ranges were

calculated for each measure, by length of stay and number of risk factors. For the entire sample, a two-factor analysis of variance (ANOVA) was used to analyze the main effects and interactions of the number of reported risk factors for referral and length of enrollment at Childhaven on children's mean social skills and behavior scores.

Independent variables for entire sample. There were two binary independent variables. The first independent variable was number of risk factors for referral. Risk factors were grouped into two levels— one risk factor and multiple risk factors. The second independent variable was length of enrollment at Childhaven. Length of enrollment was grouped into two levels— enrolled for fewer than two years and enrolled for two or more years.

Dependent variables for entire sample. The dependent variables were case manager ratings of current child behavior and social skills.

For the subsample of children, a two-factor (ANOVA) was used to analyze the main effects and interactions of the number of reported risk factors for referral and length of enrollment on the mean pre-academic testing scores. In addition, a two-factor repeated measures analysis of variance (ANOVA) was used to analyze the main effects and interactions of the number of risk factors for referral and length of enrollment on the mean scores of academic competence, social-emotional competence, social skills and problem behaviors.

Independent variables for subsample. There were two binary independent variables. The first independent variable was number of risk factors for referral. Risk factors were grouped into two levels— one risk factor and multiple risk factors. The second independent variable was length of enrollment at Childhaven. Length of enrollment was grouped into two levels— enrolled for fewer than two years and enrolled for two or more years.

Dependent variable #1 for subsample. The dependent variable was pre-academic readiness, as measured by the BBCS-3:R School Readiness Composite.

Dependent variables #2 for subsample. There were two dependent variables measured across two time points (fall and spring) and across two raters (teachers and guardians). The first dependent variable was academic competence, as measured by the SSiS Academic Competence composite in the fall and spring. The second dependent variable was social-emotional competence, as measured by the DESSA Social-Emotional Competence composite in the fall and spring. There were two additional dependent variables that were measured across three time points (summer, fall, and spring) and across two raters (teachers and guardians). One dependent variable was social skills, as measured by the SSiS Social Skills composite in the summer, fall, and spring. The other dependent variable was problem behaviors, as measured by the SSiS Problem Behaviors Scale in the summer, fall, and spring.

Chapter IV: Results

Participants

The entire sample had 155 children and the subsample had 37 children. The number of therapeutic childcare workers/teachers and guardians who completed the questionnaires for each time point is displayed in Table 4.1. Thirty-four children completed the Bracken School Readiness testing.

Research Question #1: What is the relationship between number of reasons for referral (e.g., neglect, sexual abuse, physical abuse, emotional abuse, in-utero drug exposure, parental substance abuse, parental mental health, parental developmental delay) and length of enrollment at Childhaven on case manager ratings of current child behavior?

The data were analyzed first with Levene's test for homogeneity of variances and then the Kolmogorov-Smirnov to test for normality. The Levene's test was not significant, indicating homogeneity of variances, however the Kolmogorov-Smirnov revealed that the assumption of normality was violated for number of reasons for referral and length of enrollment. However, ANOVA is considered a robust statistic and, therefore, not susceptible to slight violations of normality (Huck, 2012). A two-factor between subjects ANOVA was then conducted to explore the impact of number of reasons for referral and length of stay on case manager ratings of current child behavior. Children were divided into two groups according to their number of reasons for referral (one referral reason, more than one referral reason) and length of enrollment (fewer than two years, two years or more). Bonferonni adjusted p-values were used to compensate for increased Type I error rate due to multiple comparisons. The analysis revealed no main effects of number of reasons for referral or length of enrollment. In addition, although there was no significant interaction between number of reasons for referral and length of enrollment, the

interaction effect between the two variables was marginally significant when predicting current child behavior, $F(1, 151) = 2.12, p < .07$.

Specifically, as shown in Figure 4.1, children who had one reason for referral and were enrolled at Childhaven for fewer than two years had fewer problem behaviors than children who had one reason for referral and were enrolled for longer periods of time. Conversely, children who had more than one referral reason and attended Childhaven for two or more years had fewer problem behaviors than children with more than referral reason who were enrolled for a shorter period.

Research Question #2: What is the relationship between number of reasons for referral and length of enrollment at Childhaven on case manager ratings of current child social skills?

In order to test assumptions, the data were analyzed with Levene's test for homogeneity of variances and then the Kolmogorov-Smirnov to test for normality. The Levene's test was not significant, indicating homogeneity of variances, however the Kolmogorov-Smirnov revealed that the assumption of normality was violated for number of reasons for referral and length of enrollment. Again, given that ANOVA is not affected by mild violations of normality, data were not transformed to compensate for the violation. A two-factor between subjects ANOVA was conducted to explore the impact of number of reasons for referral and length of stay on case manager ratings of current child social skills. Similar to the first question, children were divided into two groups according to their number of reasons for referral (one referral reason, more than one referral reason) and length of enrollment (less than one year, one year or more). There was a significant interaction between number of reasons for referral and length of enrollment when

predicting social skills, even with a Bonferroni adjustment, $F(1, 151) = 6.94, p < .01$. The analysis revealed no main effects of number of reasons for referral or length of enrollment.

Specifically, as seen in Figure 4.2, children who had one reason for referral and were enrolled at Childhaven for fewer than two years had higher social skill ratings than children with one referral reason who were enrolled for longer. Conversely, children who had more than one referral reason and were enrolled at Childhaven for two or more years had higher social skills ratings than children with more than one referral reason who stayed at Childhaven for a shorter time period.

Research Question #3: What is the relationship between the number of reasons for referral (e.g., neglect, sexual abuse, physical abuse, emotional abuse, in-utero drug exposure, parental substance abuse, parental mental health, parental developmental delay) and length of enrollment at Childhaven on social-emotional development over time?

Several two-factor repeated measures ANOVAs were conducted to explore the impact of number of reasons for referral and length of stay on social emotional development over time. Similarly to the research questions for the entire sample, children were divided into two groups according to their number of reasons for referral (one referral reason, more than one referral reason) and length of enrollment (less than one year, one year or more). Normality was violated, however data were not transformed because ANOVA is able to handle mild violations to normality (Huck, 2012).

Research Question #3A: What is the relationship between the number of reasons for referral (1 vs. >1) and length of enrollment (< 2 years vs. \geq 2 years) on guardian ratings of social skills over three time points (summer, fall, spring)?

A two-way repeated measures ANOVA was performed to explore the impact of length of enrollment and number of reasons for referral on guardian ratings of children's social skills over three time points. The analysis revealed no statistically significant main effects for length of enrollment or number of referral reasons and no statistically significant interaction effect. Given the small sample size and relatively weak power to detect significant effects, the graphical depictions of the data were examined to determine whether there were any notable trends in the data.

The graphs for these data (Figures 4.3 through 4.5) revealed two interesting trends that are worth noting. First, as depicted in Figure 4.4 and 4.5, children who attended Childhaven for two or more years consistently were rated as having higher social skills than children who attended Childhaven for fewer than two years, regardless of how many reasons for referral they had. Second, of the children who attended Childhaven for two or more years, children who had more than one reason for referral were rated as having the highest social skills across all time points (summer, winter, and spring).

Research Question #3B: What is the relationship between the number of reasons for referral (1 vs. >1) and length of enrollment (< 2 years vs. \geq 2 years) on guardian ratings of problem behaviors over three time points (summer, fall, spring)?

A two-way repeated measures ANOVA was performed to explore the impact of length of enrollment and number of reasons for referral on guardian ratings of children's problem behaviors over three time points. The analysis revealed no statistically significant main effects for length of enrollment or number of referral reasons and no statistically significant interaction.

Examinations of Figures 4.6 through 4.8 revealed three trends that are worthy of interpretation. The first trend, which is depicted in Figure 4.6, shows that children who entered

Childhaven with more than one reason for referral had consistently higher rated problem behaviors over time than children who had one reason for referral. The second trend, depicted in Figure 4.7, illustrates that children who attended Childhaven for two or more years had lower guardian rated problem behaviors than children who attended Childhaven for fewer than two years. The third trend, shown in Figure 4.8, is that guardian ratings of problem behaviors increased over time, with the exception of children who had more than one referral reason and were enrolled for fewer than two years.

Research Question Three, Part C: What is the relationship between the number of reasons for referral (1 vs. >1) and length of enrollment (< 2 years vs. ≥ 2 years) on guardian ratings of social-emotional competence over two time points (fall and spring)? A two-way repeated measures ANOVA was performed to explore the impact of length of enrollment and number of reasons for referral on guardian ratings of children's social-emotional competence over two time points. The analysis revealed no statistically significant main effects for length of enrollment or number of referral reasons and no statistically significant interaction.

Figures 4.9 through 4.11 revealed two interesting trends for this question. First, Figure 4.9 shows that children with one reason for referral had higher rated social-emotional competence than their counterparts at both time points. Second, Figure 4.11 shows that children who attended Childhaven for two or more years consistently were rated as having higher social-emotional competence, regardless of their number of reasons for referral.

Research Question Three, Part D: What is the relationship between the number of reasons for referral (1 vs. >1) and length of enrollment (< 2 years vs. ≥ 2 years) on teacher ratings of social skills over three time points (summer, fall, spring)?

A two-way repeated measures ANOVA was performed to explore the impact of length of enrollment and number of reasons for referral on teacher ratings of children's social skills over three time points. The analysis revealed no statistically significant main effects for length of enrollment or number of reasons for referral and there was no statistically significant interaction.

Examinations of Figures 4.12 through 4.14 revealed that teacher ratings of social skills decreased from the summer to the spring. Only children in the group who attended Childhaven for fewer than two years and had one reason for referral showed an increase in social skills, according to the teacher ratings.

Research Question #3E: What is the relationship between the number of reasons for referral (1 vs. >1) and length of enrollment (< 2 years vs. ≥ 2 years) on teacher ratings of problem behaviors over three time points (summer, fall, spring)?

A two-way repeated measures ANOVA was performed to explore the impact of length of enrollment and number of reasons for referral on teacher ratings of children's problem behaviors over three time points. The analysis revealed no statistically significant main effects for length of enrollment or number of reasons for referral and there was no statistically significant interaction.

Examinations of Figures 4.15 through 4.17 revealed two noteworthy trends. First, as shown in Figure 4.15, teachers rated children with one referral reason as having fairly stable problem behaviors over all three time points, while ratings of children with more than one referral reason visibly increased from the fall to the spring. Second, Figure 4.16 demonstrates that children who attended Childhaven for more than two years had higher problem behavior ratings across all time points and the difference between their problem behaviors and their counterparts was most apparent in the spring.

Research Question #3F: What is the relationship between the number of reported reasons for referral (1 vs. >1) and length of enrollment (< 2 years vs. ≥ 2 years) on kindergarten teacher ratings of social-emotional competence over two time points (fall and spring)?

A two-way repeated measures ANOVA was performed to explore the impact of length of enrollment and number of reasons for referral on teacher ratings of children's social-emotional competence over two time points. The analysis revealed no statistically significant main effects for length of enrollment or number of referral reasons. The interaction between the two was trending toward significance, $F(1,10) = 3.29, p < .10$.

The graphs for this data (Figures 4.18 through 4.20) revealed two interesting trends. First, Figure 4.18 illustrates that children with more than one reason for referral were rated as having higher levels of social-emotional competence across both time points than their counterparts. Second, Figure 4.19 depicts that children who attended Childhaven for fewer than two years had higher rated social-emotional competence at both time points than children who attended Childhaven for longer.

Research Question #4: What is the relationship between the number of reported reasons for referral (1 vs. >1) and length of enrollment (< 2 years vs. ≥ 2 years) on academic progress over time?

Two types of two-factor ANOVAs were conducted to explore the impact of number of reasons for referral and length of stay on academic progress over time over time. Similarly to the previous research questions, children were divided into two groups according to their number of reasons for referral (one referral reason, more than one referral reason) and length of enrollment (less than one year, one year or more).

Research Question #4A: What is the relationship between the number of reported reasons for referral (1 vs. >1) and length of enrollment (< 2 years vs. ≥ 2 years) on children's kindergarten readiness test scores?

The data were analyzed first with Levene's test for homogeneity of variances and then the Kolmogorov-Smirnov to test for normality. The Levene's test was significant, indicating a violation of homogeneity of variances. The Kolmogorov-Smirnov was significant for the group of children who had more than one reason for referral.

A two-factor between subjects ANOVA then was conducted to explore the impact of number of reasons for referral and length of stay on children's Bracken School Readiness Composite scores. Children were divided into two groups according to their number of reasons for referral (one referral reason, more than one referral reason) and length of enrollment (less than one year, one year or more). The analysis revealed an initial significant main effect of number of reasons for referral, but this effect was non-significant after the Bonferroni adjustment. Specifically, children with more than one referral reason scored roughly nine points higher on the Bracken than children with one referral reason. There was no significant main effect for length of enrollment and no significant interaction between number of reasons for referral and length of enrollment.

Research Question #4B: What is the relationship between the reported number of reported reasons for referral (1 vs. >1) and length of enrollment (< 2 years vs. ≥ 2 years) on kindergarten teacher ratings of academic competence over two time points (fall and spring)?

A two-way repeated measures ANOVA was performed to explore the impact of length of enrollment and number of reasons for referral on teacher ratings of children's academic

competence over two time points. The analysis indicates that the main effect of length of enrollment, $F(1, 11) = 3.26, p < .10$, and the interaction between length of enrollment and number of reasons for referral were trending toward significance, $F(1, 11) = 3.26, p < .10$. There was no statistically significant main effect for number of referral reasons.

Chapter 5: Discussion

The overall purpose of this study was to examine early social-emotional development and academic success in a sample of kindergarten children who attended Childhaven, a therapeutic childcare facility in Seattle, Washington. Specifically, data on children's problem behaviors, social skills, social-emotional competence, academic competence, and kindergarten readiness scores were examined to determine the relationship between these variables and length of enrollment and number of referral reasons. This discussion section will focus on three main themes of the analysis, as well as highlight the difficulties in conducting research with a maltreated population.

Theme 1: Length of Enrollment

The first research question from the study is related to length of time enrolled in Childhaven. Results showed that children who had one reason for referral (e.g., were maltreated; were deemed "at-risk," or had parents who abused substances, had mental health difficulties, or were developmentally delayed) and were enrolled at Childhaven for fewer than two years received higher (i.e., better) ratings on social skills than children with one referral reason who were enrolled for longer, according to their case managers. Children who had more than one referral reason and were enrolled at Childhaven for two or more years received higher case manager ratings on social skills than similar peers who were enrolled for shorter time periods. Similarly, behaviors trended in the same direction as social skills; that is, children who had more than one referral reason and were enrolled at Childhaven for two or more years received higher case manager ratings on behaviors.

Currently, there does not appear to be much research looking at the interaction between length of enrollment (i.e., dosage) at an agency and number of referral reasons/risk factors on

social-emotional outcomes in early childhood. There has been some research examining the relationship of length of enrollment on academic outcomes, however these studies did not investigate the impact of risk factors on social-emotional outcomes (Domitrovich et al., 2013; Lee, 2011). One possible explanation is that children with more than one referral reason may be at more risk and thus require longer periods of time at Childhaven to make social-emotional gains, compared to children with one referral reason who may require shorter stays. A second explanation may be the baseline differences at time of enrollment in terms of skill level between the two groups. Finally, the case manager-child relationship may also play a role in the differences.

Of interest in this line of questioning was to determine if the number of referral reasons captures levels of risk or exposure to adversity at the start of service enrollment. The findings from this study seem to support this notion although are not conclusive. Children who have experienced more adversity may require more intervention for longer periods of time than children who have experienced less adversity. Thus, it would be expected that children entering Childhaven with more adversity would be enrolled for longer periods because they would likely need more services. However, it is unknown whether the number of referrals represented in this study are, in fact, a reflection of the severity of adversity. Future research should examine severity level when comparing children who have experienced different numbers of risk factors. For example, it may be important to know that one child who experienced 5 risk factors, experienced them only to a moderate degree (i.e., did not have a significant impact on his quality of life), while another child who only experienced neglect was severely affected. Therefore, number of risk factors may not be directly correlated to level of severity. In addition, it may be

helpful for agencies, such as Childhaven, to identify a way in which they account for the severity of the risk factors experienced by a child rather than a numerical count of risk factors.

Theme 2: Guardian and Teacher Ratings

The second theme from the study is related to the difference in raters' perceptions of children's social-emotional functioning. Within the subsample, the results showed that guardians rated their children who attended Childhaven for two years or longer as having higher social skills, higher social-emotional competence, and lower problem behaviors than guardians of children who attended Childhaven for less than two years. However, teacher ratings were in the opposite direction, with children who attended Childhaven for less time as having higher social skills, social-emotional competence, and problem behaviors.

These findings are consistent with other research on behavior rating scales that indicate weak to moderate agreement between cross-informants' ratings of children's behaviors (T. Achenbach, McConaughy, & Howell, 1987; Gresham, Elliott, Cook, Vance, & Kettler, 2010). One commonly cited meta-analysis indicated a weak association between parent and teacher ratings of children's social, emotional, and behavioral problems (T. Achenbach et al., 1987). In addition, one study on the Social Skills Improvement System (the rating scale used in this study to determine social skills, problem behaviors, and academic competence) (Gresham et al., 2010) found only moderate associations between parent and teacher ratings of children's social skills and problem behaviors.

Results from the above-mentioned studies have led researchers to posit that children can behave differently depending on the context or environment (De Los Reyes & Kazdin, 2005; Gresham et al., 2010). Therefore, the environment in which guardians and teachers observe the child may heavily influence their ratings or the behaviors that they see. For example, one child

may behave very positively in the school setting, but behave poorly at home. If the guardian and teacher only observe the child in one setting, then their ratings of the child's social skills and problem behaviors may differ and sometimes contradict each other. Another explanation may be that guardians perceive their children as having higher social skills and behaviors because they were enrolled at Childhaven (i.e., the guardians expect to see improvements in these areas due to being enrolled at a therapeutic childcare center). Future research should examine behaviors across multiple settings and across multiple raters, as well as whether length of enrollment at Childhaven influences how a guardian perceives his or her child's social-emotional development.

Theme 3: Academic Success

Two trends emerged in terms of academic success. The first trend was that on the kindergarten readiness assessment measure that was administered prior to kindergarten entry, children who had more than one referral reason had higher scores than children who had only one referral reason. This trend is contradictory to Rouse and Fantuzzo's (2007) findings in which each additional early childhood risk factor was significantly related to increased chance of poor academic achievement. Rouse and Fantuzzo's findings are supported by other research studies that indicate that more risk is associated with poorer academic and well-being outcomes (Felitti et al., 1998; Gutman, Sameroff, & Cole, 2003). Given several important research studies have reported the opposite of what this study found, suggests further research be conducted to better understand the relationship between number of referral reasons and academic success with Childhaven clients.

The other trend that emerged in relation to academic success is that children who attended Childhaven for fewer than two years had higher teacher rated academic competence during their kindergarten year than children who attended Childhaven for more than two years.

This is contradictory to the initial hypothesis that children who attended Childhaven for longer would have higher academic achievement. This trend also contradicts the findings from larger studies with Head Start populations that compared children who attended Head Start for two years versus children who attended for only one year and found higher academic achievement with the group who attended Head Start for longer (Domitrovich et al., 2013; Lee, 2011). For example, Domitrovich et al. (2013) found that children who attended Head Start for two years had higher receptive vocabulary, literacy, and numeracy skills in kindergarten than children who attended Head Start for one year. It is important to note that these studies measured only “academic achievement,” while “academic competence” is a cumulative measurement of academic achievement, child’s motivation to learn, child’s general cognitive ability, and parental support. In addition, the subjects in these studies were children enrolled at Head Start versus children enrolled at Childhaven, which may lead to differences between the two populations. The differences between “academic achievement” and “academic competence,” as well as the potential unaccounted for differences between the two populations possibly could lead to different findings.

In terms of academic achievement, more research is needed to clarify both of these trends. In this study, one limitation of examining academic outcomes was that no direct measures of academic success were collected during the kindergarten school year. Unfortunately, this limitation prohibits a true examination of academic achievement. Furthermore, due to inconsistent data collection in different school districts (i.e., districts measured academic progress using different types of measures making it difficult to compare children’s academic progress from different districts) this comparison is further complicated. Thus, only academic competence scores were used to interpret academic success throughout the school year. While

academic competence is a useful measure to use as a cumulative score of academic behavior (e.g., motivation to learn) and performance, it does not directly assess academic performance. It may be beneficial for future research to have an academic assessment completed with the children during the kindergarten year in order to better analyze children's academic scores, in addition to their academic competence, over the course of the year.

Difficulties with Studying a Maltreated Population

While not a theme, per se, the difficulties encountered while conducting this study need to be highlighted, given the impact they had in collecting information on children who attended Childhaven. The first issue with this study was the inability to recruit a large number of children for the more extensive portion of this study (research questions 3 and 4). Of the 155 potential subjects, 10 caregivers were not contacted due to bad-ending relationships with Childhaven staff; 15 caregivers were not contacted because their children had been adopted and moved out of state or their children had been placed in alternative households; 38 caregivers had outdated contact information; 25 caregivers were not able to be reached via telephone or email; and 7 caregivers were not contacted by case managers for unspecified reasons. These clients made up more than 60 percent of the children eligible to participate in the study.

The second difficulty encountered in this study was the issue of guardianship. Some of the children in the study were wards of the state and therefore had caseworkers who technically were their legal guardians. Because of this, caseworkers had to sign consent for the children to participate in the study and then the adults who the children were living with were contacted to participate in the study. In addition, other children in the study still had parents who were their legal guardians but the children were living with other adults (e.g., relatives of their parents). This situation then led to the question of who should fill out the questionnaires. Of the 37

children in the subsample, 13 were living with adults who were not their legal guardians and 4 children needed initial consent from case workers.

The third major difficulty encountered with this study was the mobility of the subsample. Specifically, 8 guardians moved, 7 guardians changed their phone numbers (3 more than once), and 2 children moved to different elementary schools. This high mobility made it difficult to contact guardians to complete questionnaires and made it difficult to retain children in the study.

The last major difficulty was attrition. Of the 40 children who began in the study, 13 guardians and 16 teachers dropped out (either verbally declined or stopped filling out questionnaires) at some point in the course of the study. This attrition led to having only 12 children who had both teachers and guardians who provided information for the study. The attrition also led to missing data. Because of this, the ability to obtain significant results from this study was severely impacted by the small amount of data collected.

The difficulties encountered in this study highlight the complexities that can be encountered when trying to research populations of maltreated and/or at-risk children. Future research that continues to examine the difficulties inherent in working with this population and identifies strategies that increase the likelihood of high recruitment and retention will be incredibly beneficial to the field.

Future Directions

Results from this study are important from a local and state-level (and possibly national). This was the first study to examine early outcomes for children being treated at Childhaven. Three main themes emerged from this study and are avenues to explore in future research. The first theme indicates that children may require different doses of the intervention depending on the number of referral reasons they had at the outset of treatment. However, it still is unclear as

to whether number of referral reasons provides a valid proxy to severity level of adversity. The second theme indicates that raters may have different perceptions of children's social-emotional development. This was illustrated by the weak agreement between teachers and guardians. The third theme showed that differences existed between which group scored highest depending on whether academic competence or academic readiness was measured. Lastly, while not a theme, the difficulties that emerged when trying to study a maltreated and/or at-risk population were highlighted.

Moving forward, future research should address the three themes and the inherent difficulties that emerged from this study with larger sample sizes to have enough power to detect meaningful differences. Specifically, additional research with larger sample sizes needs to include a comparison group of at-risk and maltreated youth and peers who have not experienced maltreatment or related risk factors. This type of research will help facilitate a better understanding of the effectiveness of Childhaven or other like agencies, on early social-emotional and academic outcomes of children who have been maltreated or considered at-risk. In addition, this type of research also will help explain how these children compare with children who do not have a history of maltreatment.

Additional research also should examine the impact of referral reasons on social emotional and academic success. This study indicated that children who enter Childhaven or other like agencies with more referral reasons may need to attend Childhaven for longer periods of time in order to benefit from the program, whereas children with one referral reason may be able to benefit from shorter periods of time enrolled in the program. However, this study was not able to establish whether the number of referrals represented in this study were a reflection of adversity. It will be important for future research to better determine whether children with more

referral reasons require longer enrollments in order to benefit from the treatment. In addition, it will be important for future research to tease apart the issue of number of risk factors versus severity of risk factors.

In addition, future research can examine whether there is an impact of the number of referral reasons and length of enrollment on rater's perceptions of children's social-emotional development and academic success. Specifically, do guardians and teachers perceive different subsets of children the same way or do differences continue to exist depending on the number of referral reasons and length of enrollment?

Another area in which future research can expand based on this study is by directly assessing academic success during the school year. Because of difficulties finding a consistent academic measure that was used in all school districts, in this study, academic success was indirectly measured through academic competence. This comparison had numerous flaws, and thus future research should examine the complex relationship between academic competence and standard academic achievement.

It also will be important for future research to continue to document the difficulties inherent in studying maltreated and/or at-risk for maltreatment populations. This study highlighted several ways in which research was hampered due to difficulties in contacting, receiving consent, and retaining subjects in the study. Future research can also examine how to mitigate these factors. It is imperative to be able to successfully study this population in order for the maltreatment field to best understand what treatments lead to successful outcomes for children.

Finally, while it is important for future research to continue to be focused on social-emotional and academic outcomes of children who attended Childhaven, it also is recommended

that similar studies be performed with other comparable early intervention agencies. Research indicates the positive impact that high quality early childcare can have on child outcomes, such as early learning, cognitive and language development, and social and emotional development (National Research Council and Institute of Medicine, 2000). Research also documents the devastating effects early childhood maltreatment can have on child and adult outcomes (Edwards et al., 2003; Fantuzzo et al., 2011; Trickett & McBride-Chang, 1995). Therefore it is important to conduct research on early childhood intervention programs that target maltreated populations to better understand their effectiveness on helping to produce positive social-emotional and academic outcomes in children.

General Limitations of Study

This study had several limitations. There are three main limitations in terms of the study design. First, the subsample of the study was small, which limited the statistical power to detect differences between groups. Second, the study did not include comparison groups, which makes it difficult to understand how these children performed in kindergarten compared to other children (e.g., children who had been maltreated and did not attend Childhaven and children who had not been maltreated). Third, the independent variables may not have been as pure as initially thought. For example, length of stay may have been impacted by variables other than no longer needed services, such as moving, loss of custody, and adoption. In addition, referral reasons did not take into account the severity of each referral reason. Small sample size lead to different statistical analyses as well.

There are three main limitations in terms of generalization. First, there may have been a self-selection bias in that caregivers who elected to participate in the subsample may have been different than caregivers who dropped out of the study, declined, were not contacted to

participate, or were unable to be contacted. Thus, the subsample of guardians may not be representative of the sample as a whole. Second, this study involved one cohort of Childhaven clients, which limits the generalizability of the findings to children who attended Childhaven during other periods of time. Finally, the differences between genders were not addressed, which limits the ability to generalize the findings specifically to males and females.

Finally, there are two main limitations in terms of measurement and statistical power. First, this study involved a small sample size, which severely limited the statistical power to detect significant differences between groups. Second, within the small sample size, this study also had missing data that may have affected the overall findings.

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doi: 10.1002/ebch.264

Tables

Table 3.1

Descriptive Statistics of Sample

Characteristics	Sub Sample		Full Sample	
	<i>n</i> = 37		<i>n</i> = 155	
	<i>N</i>	%	<i>N</i>	%
Gender				
Male	23	62.16%	92	59.35%
Female	14	37.83%	63	40.65%
Ethnicity				
Caucasian	11	29.73%	42	27.10%
Black or African American	8	21.62%	33	21.29%
Asian	1	2.70%	3	1.94%
American Indian or Alaska Native	0	0.00%	3	1.94%
Native Hawaiian or Pacific Islander	0	0.00%	3	1.94%
More than one race	16	43.24%	55	35.48%
Latino	1	2.70%	14	9.03%
Other	0	0.00%	2	1.29%
Risk Factors				
Physical Abuse	7	18.92%	24	15.48%
Sexual Abuse	2	5.41%	4	2.58%
Emotional Abuse	1	2.70%	2	1.29%
Neglect	16	43.24%	77	49.68%

Domestic Violence	4	10.81%	38	24.52%
Drug Affected	1	2.70%	8	5.16%
Parent Mental Health	6	16.21%	34	21.94%
Parent Delay	0	0.00%	3	1.94%
Substance Abuse	18	48.65%	65	41.94%
At-Risk	11	29.73%	31	20.00%
Multiple Risk Factors	20	54.05%	96	61.94%
Continuous Descriptors	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Age at Entry (yrs)	2.22	1.60	1.68	1.41%
Length of Stay in Program (yrs)	2.42	1.34	1.69	1.27%

Table 4.1

Number of Questionnaires Completed for Each Time Point

Participants	Summer	Fall	Spring
TCCWs/Kindergarten Teachers	28	16	20
Guardians	27	24	19

Table 4.2

Descriptive Statistics for Research Question One: Mean Child Behavior Rating Scores for Reasons for Referral

Reasons for Referral	<i>n</i>	Mean	<i>SD</i>
1 Reason	59	2.88	.11
> 1 Reason	96	2.78	.10

Table 4.3

Descriptive Statistics for Research Question One: Mean Child Behavior Rating Scores for Length of Enrollment

Length of Enrollment	<i>n</i>	Mean	<i>SD</i>
< 2 years	103	2.91	.08
≥ 2 Years	52	2.74	.11

Table 4.4

Descriptive Statistics for Research Question One: Child Behavior Ratings for Reasons for Referral and Length of Enrollment

Reasons for Referral	Length of Stay	<i>n</i>	Mean	<i>SD</i>
1 Reason	< 2 years	35	3.10	.74
	≥ 2 years	24	2.67	.70
> 1 Reason	< 2 years	68	2.74	.79
	≥ 2 years	28	2.82	.95

Table 4.5

ANOVA Summary Table for Research Question One: Child Behavior Ratings for Entire Sample

Source	<i>SS</i>	<i>df</i>	<i>MS</i>	<i>F</i>	<i>p</i>
Number of Reasons for Referral (RR)	0.32	1	0.32	0.50	0.48
Length of Enrollment (LOE)	0.92	1	0.92	1.45	0.23
RR X LOE	2.12	1	2.12	3.35	0.07

Within Groups	95.42	151	0.63
Total	1331.00	155	

Table 4.6

Descriptive Statistics for Research Question Two: Mean Child Behavior Rating Scores for Reasons for Referral

Reasons for Referral	<i>n</i>	Mean	<i>SD</i>
1 Reason	59	2.88	0.11
> 1 Reason	96	2.78	0.10

Table 4.7

Descriptive Statistics for Research Question One: Mean Child Behavior Rating Scores for Length of Enrollment

Length of Enrollment	<i>n</i>	Mean	<i>SD</i>
< 2 Years	103	2.73	0.08
≥ 2 Years	52	2.70	0.11

Table 4.8

Descriptive Statistics for Research Question Two: Social Skill Ratings for Reasons for Referral and Length of Enrollment

Reasons for Referral	Length of Stay	<i>n</i>	Mean	<i>SD</i>
1 Reason	< 2 years	35	2.96	.75
	≥ 2 years	24	2.58	.67

> 1 Reason	< 2 years	68	2.50	.77
	≥ 2 years	28	2.82	.82

Table 4.9

ANOVA Summary Table for Research Question Two: Social Skill Ratings for Entire Sample

<i>Source</i>	<i>SS</i>	<i>df</i>	<i>MS</i>	<i>F</i>	<i>p</i>
Number of Reasons for Referral (RR)	.40	1	.4	.69	.41
Length of Enrollment (LOE)	.02	1	.02	.04	.84
RR X LOE	4.01	1	4.01	6.94	.01
Within Groups	87.13	151	.58		
Total	1201.25	154			

Table 4.10

Descriptive Statistics for Research Question Three: Mean Guardian Social Skills Ratings for Number of Reasons for Referral

	Summer			Fall			Spring		
Reasons for Referral	<i>n</i>	Mean	<i>SD</i>	<i>n</i>	Mean	<i>SD</i>	<i>n</i>	Mean	<i>SD</i>
1 Reason	12	93.83	19.97	11	91.82	15.94	7	95.29	20.88
> 1 Reason	15	95.20	15.61	13	91.77	14.83	12	92.33	23.74

Table 4.11

Descriptive Statistics for Research Question Three: Mean Guardian Social Skills Ratings for Length of Enrollment

Length of Enrollment	Summer			Fall			Spring		
	<i>n</i>	Mean	<i>SD</i>	<i>n</i>	Mean	<i>SD</i>	<i>n</i>	Mean	<i>SD</i>
2 Years	12	86.75	18.46	10	84.80	15.16	8	84.00	27.55
≥ 2 years	15	100.87	13.97	14	96.79	13.22	11	100.27	15.22

Table 4.12

Descriptive Statistics for Research Question Three: Mean Guardian Social Skills Ratings for Number of Reasons for Referral and Length of Enrollment

Years (Yrs), Reasons for Referral (RR)	Summer			Fall			Spring		
	<i>n</i>	Mean	<i>SD</i>	<i>n</i>	Mean	<i>SD</i>	<i>n</i>	Mean	<i>SD</i>
< 2 Yrs, 1 RR	3	89.67	26.58	3	84.00	12.77	3	91.00	23.43
< 2 Yrs, > 1RR	4	91.75	16.34	4	79.00	20.48	4	89.25	27.04
≥ 2 Yrs, 1 RR	4	100.00	20.51	4	93.25	23.23	4	98.50	21.76
≥ 2 Yrs, > 1 RR	6	105.67	6.86	6	95.67	6.89	6	100.67	13.11

Table 4.13

Descriptive Statistics for Research Question Three: Mean Guardian Problem Behavior Ratings for Reasons for Referral

Summer	Fall	Spring
--------	------	--------

Reasons for Referral	<i>n</i>	Mean	SD	<i>n</i>	Mean	SD	<i>n</i>	Mean	SD
1 Reason	12	116.25	19.37	11	113.64	12.14	7	123.00	12.48
> 1 Reason	15	118.48	16.53	13	122.31	15.56	12	124.67	20.50

Table 4.14

Descriptive Statistics for Research Question Three: Mean Guardian Problem Behavior Ratings for Length of Enrollment

Years of Enrollment	Summer			Fall			Spring		
	<i>n</i>	Mean	SD	<i>n</i>	Mean	SD	<i>n</i>	Mean	SD
< 2 Years	12	125.17	16.47	10	125.50	15.41	8	136.25	16.63
≥ 2 Years	15	111.33	16.32	14	113.21	11.80	11	115.18	12.57

Table 4.15

Descriptive Statistics for Research Question Three: Mean Guardian Problem Behavior Ratings for Reasons for Referral and Length of Enrollment

Years of Enrollment (Yrs), Reasons for Referral (RR)	Summer			Fall			Spring		
	<i>n</i>	Mean	SD	<i>n</i>	Mean	SD	<i>n</i>	Mean	SD
< 2 yrs, 1 RR	3	116.33	10.41	3	114.32	5.51	3	118.25	14.77
< 2 yrs, > 1RR	4	125.75	12.92	4	133.25	16.01	4	112.83	13.05
≥ 2 yrs, 1 RR	4	112.5	17.56	4	115.25	19.57	4	123	12.48

≥ 2 yrs, > 1 RR 6 108 12.12 6 113 8.92 6 121.9 18.98

Table 4.16

ANOVA Summary Table for Research Question Three: Guardian Problem Behavior

Ratings for Subsample Over Time

<i>Source</i>	<i>SS</i>	<i>df</i>	<i>MS</i>	<i>F</i>	<i>p</i>
Number of Reasons for Referral (RR)	136.26	2	68.13	2.17	0.14
Length of Enrollment (LOE)	120.31	2	60.16	1.91	0.17
RR X LOE	49.95	2	24.98	0.8	0.46
Error	817.22	26	31.43		

Table 4.17

Descriptive Statistics for Research Question Three: Mean Guardian Social-Emotional

Competence Rating for Reasons for Referral

Reasons for Referral	Fall			Spring		
	<i>n</i>	Mean	SD	<i>n</i>	Mean	SD
1 Reason	11	48.55	12.31	7	46.86	14.47
> 1 Reason	13	44.08	10.33	12	44.58	10.83

Table 4.18

Descriptive Statistics for Research Question Three: Mean Guardian Social-Emotional

Competence Ratings for Length of Enrollment

	Fall	Spring
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Years of Enrollment	<i>n</i>	Mean	SD	<i>n</i>	Mean	SD
< 2 Years	10	43.10	9.67	8	41.75	13.89
≥ 2 Years	14	48.29	12.14	11	48.09	10.16

Table 4.19

Descriptive Statistics for Research Question Three: Mean Guardian Social-Emotional Ratings for Reasons for Referral and Length of Enrollment

	Fall			Spring		
Years of Enrollment (Yrs), Reasons for Referral (RR)	<i>n</i>	Mean	SD	<i>n</i>	Mean	SD
< 2yrs, 1 RR	3	45.00	10.00	3	43.67	13.50
< 2 yrs, > 1RR	4	38.25	11.27	4	43.75	16.01
≥ 2 yrs, 1 RR	4	49.50	19.33	4	49.25	16.72
≥ 2 yrs, > 1 RR	7	46.71	10.16	7	47.43	5.56

Table 4.20

ANOVA Summary Table for Research Question Three: Guardian Social-Emotional Competence Ratings for Subsample Over Time

<i>Source</i>	<i>SS</i>	<i>df</i>	<i>MS</i>	<i>F</i>	<i>p</i>
Number of Reasons for Referral (RR)	31.14	1	31.14	1.32	0.27
Length of Enrollment (LOE)	7.02	1	7.02	0.30	0.59
RR X LOE	17.64	1	17.64	0.75	0.40

Error 330.92 14 23.64

Table 4.21

Descriptive Statistics for Research Question Three: Mean Teacher Social Skills Ratings for Reasons for Referral

	Summer			Fall			Spring		
Reasons for Referral	<i>n</i>	Mean	SD	<i>n</i>	Mean	SD	<i>n</i>	Mean	SD
1 Reason	11	94.00	12.51	7	93.14	13.55	8	91.13	15.53
> 1 Reason	17	100.88	14.16	9	95.56	18.40	12	89.67	13.91

Table 4.22

Descriptive Statistics for Research Question Three: Mean Teacher Social Skills Ratings for Length of Enrollment

	Summer			Fall			Spring		
Years of Enrollment	<i>n</i>	Mean	SD	<i>n</i>	Mean	SD	<i>n</i>	Mean	SD
< 2 Years	13	98.85	12.74	8	97.13	15.82	9	93.00	13.31
≥ 2 Years	15	97.60	14.95	8	91.88	16.78	11	88.00	15.12

Table 4.23

Descriptive Statistics for Research Question Three: Mean Teacher Ratings for Reasons for Referral and Length of Enrollment

	Summer			Fall			Spring		
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Years of Enrollment (Yrs),

Reasons for Referral (RR)	<i>n</i>	Mean	SD	<i>n</i>	Mean	SD	<i>n</i>	Mean	SD
< 2yrs, 1 RR	2	105.50	12.02	2	97.50	14.85	2	101.00	1.41
< 2 yrs, > 1RR	4	97.00	12.52	4	97.25	22.49	4	91.00	15.98
≥ 2 yrs, 1 RR	1	82.00	n/a	1	76.00	n/a	1	70.00	n/a
≥ 2 yrs, > 1 RR	4	107.25	4.99	4	96.00	19.20	4	90.00	16.47

Table 4.24

Descriptive Statistics for Research Question Three: Mean Teacher Problem Behavior

Ratings for Reasons for Referral

	Summer			Fall			Spring		
Reasons for Referral	<i>n</i>	Mean	SD	<i>n</i>	Mean	SD	<i>n</i>	Mean	SD
1 Reason	11	109.27	20.02	7	110.14	22.04	8	109.63	20.88
> 1 Reason	17	111.53	17.32	9	111.33	14.16	12	116.83	14.78

Table 4.25

Descriptive Statistics for Research Question Three: Mean Teacher Problem Behavior

Rating Scores for Length of Enrollment

	Summer			Fall			Spring		
Years of Enrollment	<i>n</i>	Mean	SD	<i>n</i>	Mean	SD	<i>n</i>	Mean	SD
< 2 Years	13	108	18.93	8	107.88	15.47	9	106.00	14.94
≥ 2 Years	15	112.93	17.67	8	113.75	19.68	11	120.45	16.98

Table 4.26

Descriptive Statistics for Research Question Three: Mean Teacher Problem Behavior Rating Scores for Reasons for Referral and Length of Enrollment

	Summer			Fall			Spring		
Years of Enrollment									
(Yrs), Reasons for									
Referral (RR)	<i>n</i>	Mean	SD	<i>n</i>	Mean	SD	<i>n</i>	Mean	SD
< 2yrs, 1 RR	2	91.50	0.71	2	92.50	9.19	2	86.00	0.00
< 2 yrs, > 1RR	4	108.50	7.33	4	111.50	11.85	4	113.75	12.71
≥ 2 yrs, 1 RR	1	131.00	n/a	1	142.00	n/a	1	141.00	n/a
≥ 2 yrs, > 1 RR	4	107.50	10.97	4	112.25	19.67	4	116.25	20.04

Table 4.27

ANOVA Summary Table for Research Question Three: Teacher Problem

Behavior Ratings for Subsample Over Time

<i>Source</i>	<i>SS</i>	<i>df</i>	<i>MS</i>	<i>F</i>	<i>p</i>
Number of Reasons for Referral (RR)	49.56	2	24.78	0.25	0.79
Length of Enrollment (LOE)	91.34	2	45.97	0.46	0.64
RR X LOE	37.69	2	18.84	0.19	0.83
Error	1413.3300	14	100.95		

Table 4.28

Descriptive Statistics for Research Question Three: Mean Teacher Social-

Emotional Competence Ratings for Length of Enrollment

		Fall		Spring		
Years of Enrollment	<i>n</i>	Mean	SD	<i>n</i>	Mean	SD
< 2 Years	7	47.43	9.02	9	48.44	11.08
≥ 2 Years	8	45.38	12.19	11	42.82	8.78

Table 4.29

Descriptive Statistics for Research Question Three: Mean Teacher Social-Emotional Competence Ratings for Reasons for Referral and Length of Enrollment

		Fall		Spring			
Years of Enrollment (Yrs), Reasons for Referral (RR)		<i>n</i>	Mean	SD	<i>n</i>	Mean	SD
< 2yrs, 1 RR		2	50.50	3.54	2	46.50	3.54
< 2 yrs, > 1RR		4	46.25	12.23	4	48.50	17.48
≥ 2 yrs, 1 RR		3	40.00	13.86	3	42.00	13.12
≥ 2 yrs, > 1 RR		5	48.60	11.37	5	44.40	9.32

Table 4.30

ANOVA Summary Table for Research Question Three: Teacher Social-Emotional Competence Ratings for Subsample Over Time

<i>Source</i>	<i>SS</i>	<i>df</i>	<i>MS</i>	<i>F</i>	<i>p</i>
Number of Reasons for Referral (RR)	0.00	1	0.001	0.00	0.99

Length of Enrollment (LOE)	0.079	1	0.079	0.00	0.95
RR X LOE	60.39	1	60.39	3.29	0.10
Error	183.78	10	18.38		

Table 4.31

Descriptive Statistics for Research Question Four: Mean Bracken School Readiness

Composite for Reasons for Referral

Reasons for Referral	<i>n</i>	Mean	<i>SD</i>
1 Reason	16	89.13	16.24
> 1 Reason	18	98.11	9.00

Table 4.32

Descriptive Statistics for Research Question Four: Mean Bracken School Readiness

Composite for Length of Enrollment

Length of Enrollment	<i>n</i>	Mean	<i>SD</i>
< 2 years	13	95.31	14.94
≥ 2 Years	21	93	12.83

Table 4.33

Descriptive Statistics for Research Question Four: Mean Bracken School Readiness

Composite Scores for Reasons for Referral and Length of Enrollment

Reasons for Referral	Length of Stay	<i>n</i>	Mean	<i>SD</i>
1 Reason	< 2 years	6	87.50	16.98

	≥ 2 Years	10	90.10	16.62
> 1 Reason	< 2 years	7	102.00	9.64
	≥ 2 Years	11	95.64	8.03

Table 4.34

ANOVA Summary Table for Research Question Four: Bracken School Readiness

Composite

<i>Source</i>	<i>SS</i>	<i>df</i>	<i>MS</i>	<i>F</i>	<i>p</i>
Number of Reasons for Referral (RR)	802.23	1	802.23	4.69	0.04
Length of Enrollment (LOE)	28.31	1	28.31	0.17	0.69
RR X LOE	160.56	1	160.56	0.94	0.34
Within Groups	5130.95	30	171.03		
Total	305686.00	34			

Table 4.35

Descriptive Statistics for Research Question Four: Mean Teacher Academic Competence

Ratings for Reasons for Referral

	Fall			Spring		
Reasons for Referral	<i>n</i>	Mean	SD	<i>n</i>	Mean	SD
1 Reason	7	97.14	15.98	8	91.50	15.84
> 1 Reason	9	94.44	13.54	12	93.67	13.98

Table 4.36

Descriptive Statistics for Research Question Four: Mean Teacher Academic Competence Ratings for Length of Enrollment

		Fall		Spring		
Years of Enrollment	<i>n</i>	Mean	SD	<i>n</i>	Mean	SD
< 2 Years	8	103.25	9.04	9	101.44	11.13
≥ 2 Years	8	88.00	14.77	11	85.73	13.09

Table 4.37

Descriptive Statistics for Research Question Four: Mean Teacher Academic Competence Ratings for Reasons for Referral and Length of Enrollment

		Fall		Spring		
Years of Enrollment (Yrs), Reasons for Referral (RR)	<i>n</i>	Mean	SD	<i>n</i>	Mean	SD
< 2yrs, 1 RR	3	102.33	7.02	3	99.67	9.87
< 2 yrs, > 1RR	4	102.50	12.04	4	108.00	10.39
≥ 2 yrs, 1 RR	3	88.00	21.93	3	85.33	18.50
≥ 2 yrs, > 1 RR	5	88.00	11.87	5	84.20	10.57

Table 4.38

ANOVA Summary Table for Research Question Four: Teacher Academic Competence

Ratings for Subsample Over Time

<i>Source</i>	<i>SS</i>	<i>df</i>	<i>MS</i>	<i>F</i>	<i>p</i>
Number of Reasons for Referral (RR)	22.15	1	22.15	1.87	0.20
Length of Enrollment (LOE)	38.73	1	38.73	3.26	0.10
RR X LOE	38.73	1	38.73	3.26	0.10
Error	130.57	11	11.87		

Figures

Figure 4.1

Research Question One: Children's Behavior Ratings for Entire Sample

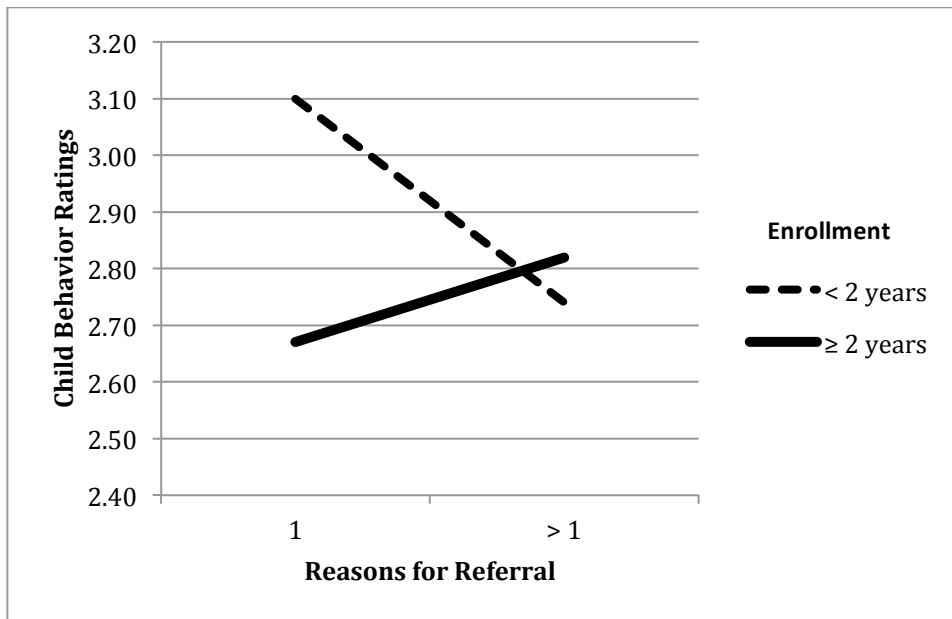


Figure 4.2

Research Question Two: Children's Social Skills Ratings for Entire Sample

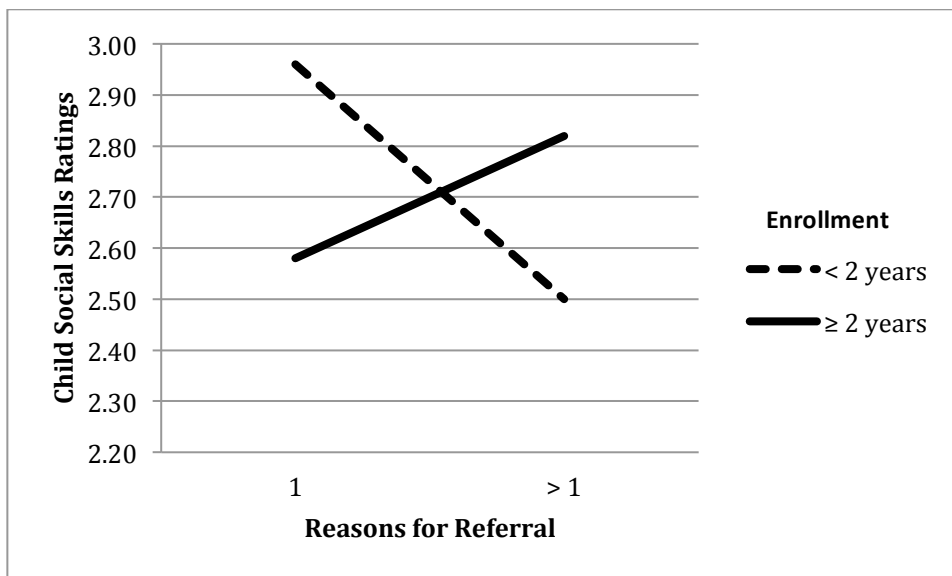


Figure 4.3

Research Question Three: Guardian Ratings of Children's Social Skills Over Time Grouped by Number of Reasons for Referral

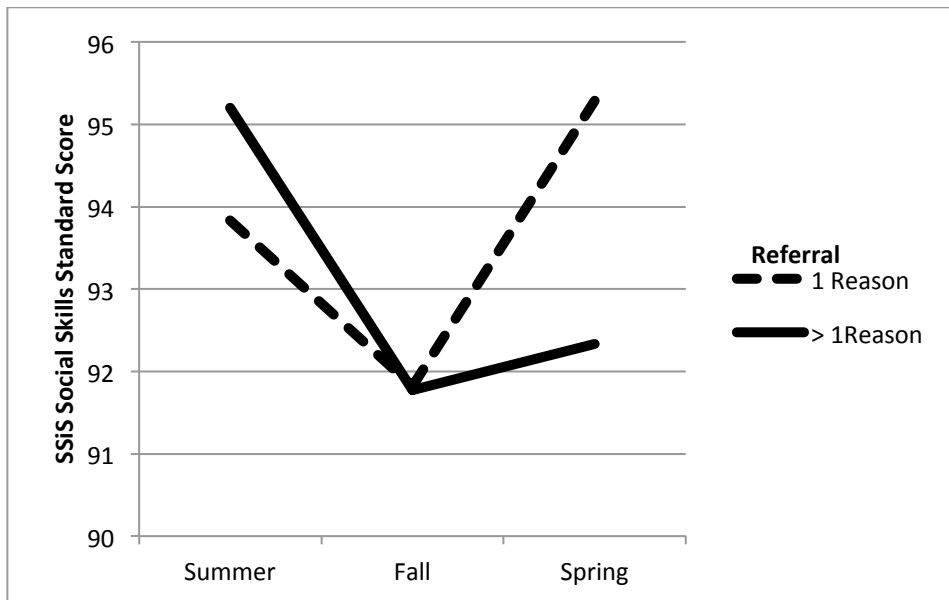


Figure 4.4

Research Question Three: Guardian Ratings of Children's Social Skills Over Time Grouped by Length of Enrollment

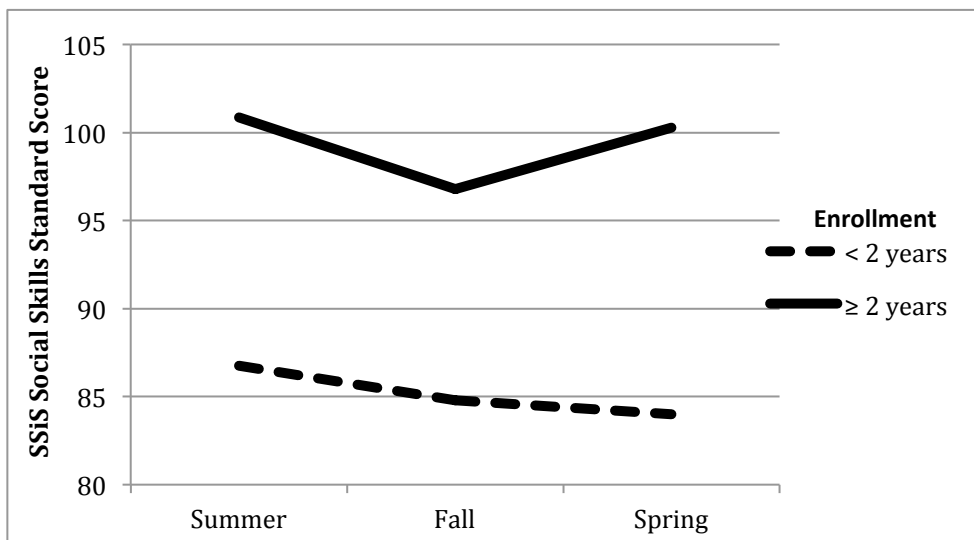


Figure 4.5

Research Question Three: Guardian Ratings of Children's Social Skills Over Time by Length of Enrollment in Years (Yrs) and Number of Reasons for Referral (RR)

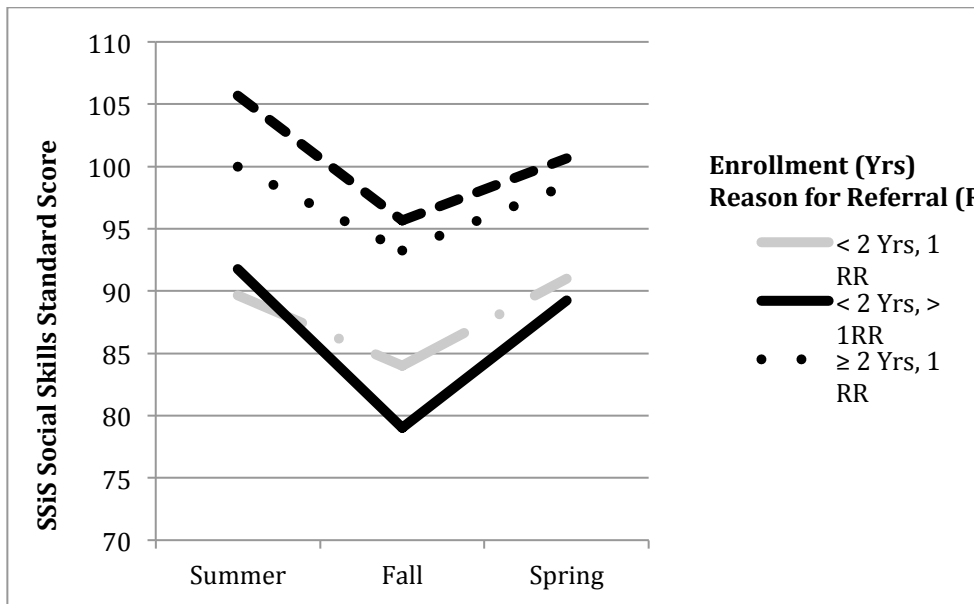


Figure 4.6

Research Question Three: Guardian Ratings of Children's Problem Behaviors Over Time Grouped by Number of Reasons for Referral

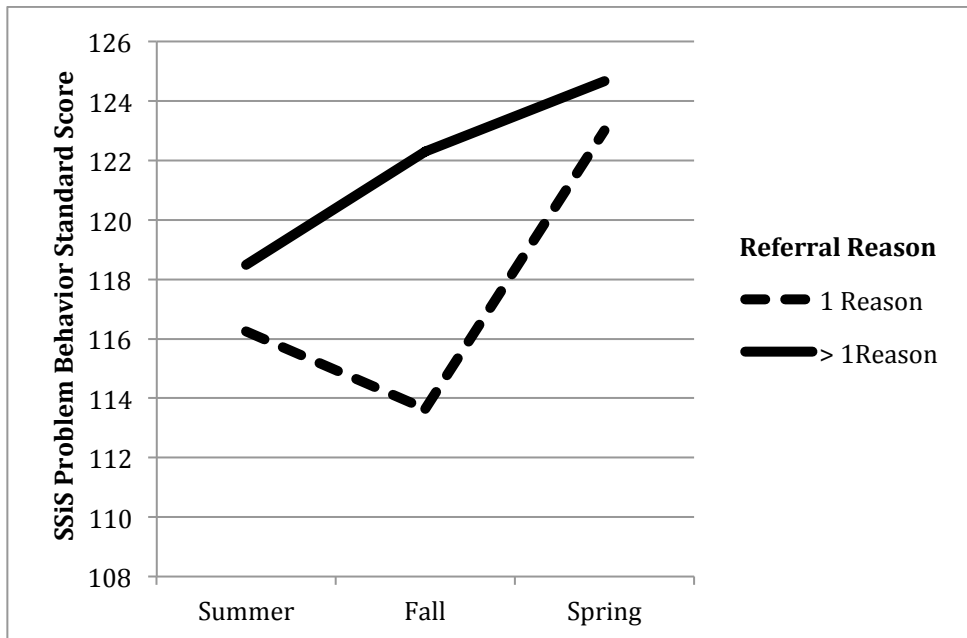


Figure 4.7

Research Question Three: Guardian Ratings of Children's Problem Behavior Over Time

Grouped by Length of Enrollment

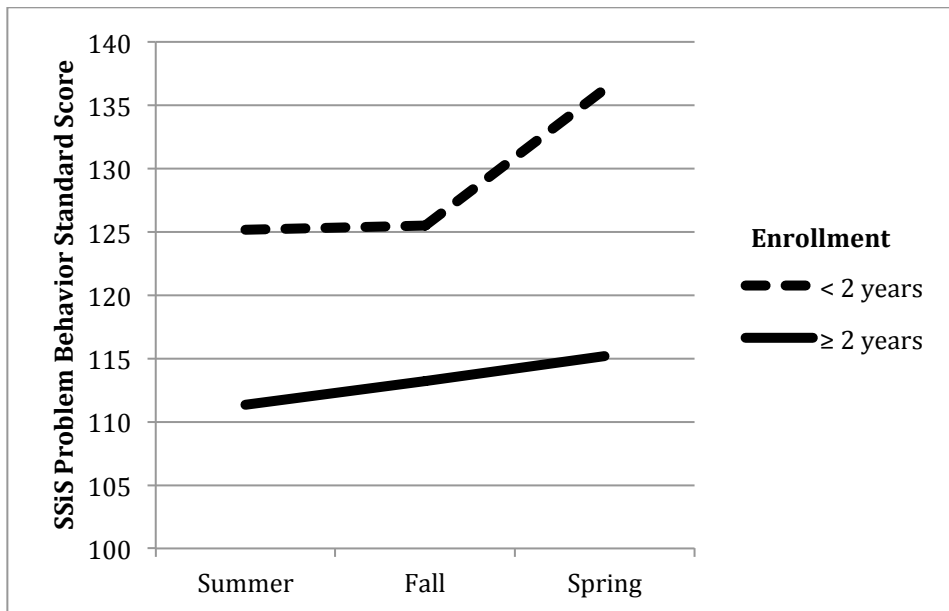


Figure 4.8

Research Question Three: Guardian Ratings of Children's Problem Behaviors Over Time by

Length of Enrollment in Years (Yrs) and Number of Reasons for Referral (RR)

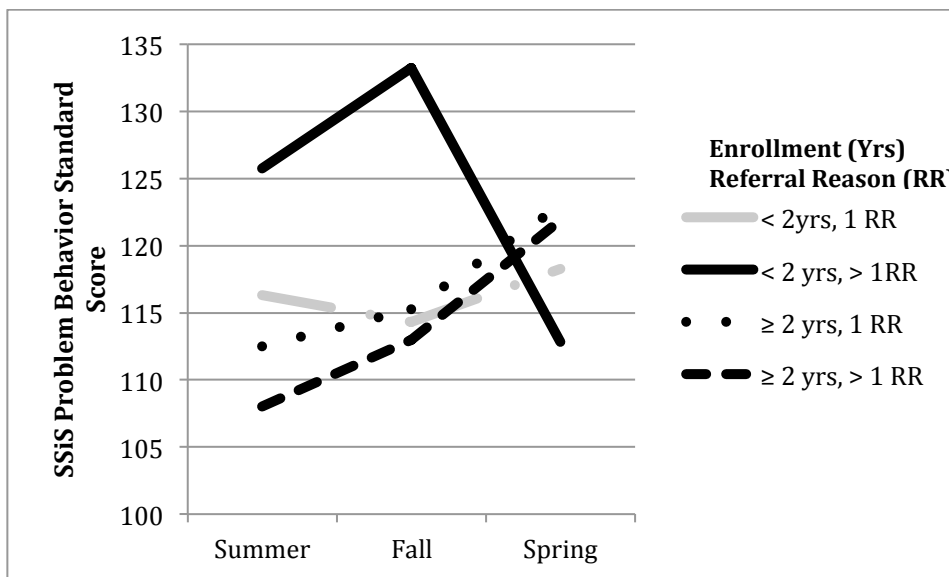


Figure 4.9

Research Question Three: Guardian Ratings of Children's Social-Emotional Competence Over Time Grouped by Number of Reasons for Referral

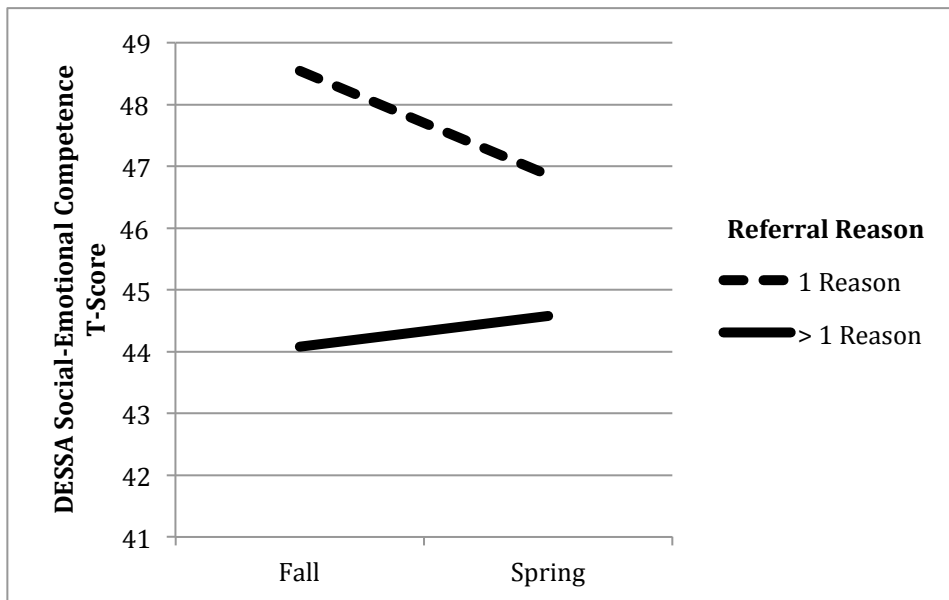


Figure 4.10

Research Question Three: Guardian Ratings of Children's Social-Emotional Competence Over Time Grouped by Length of Enrollment

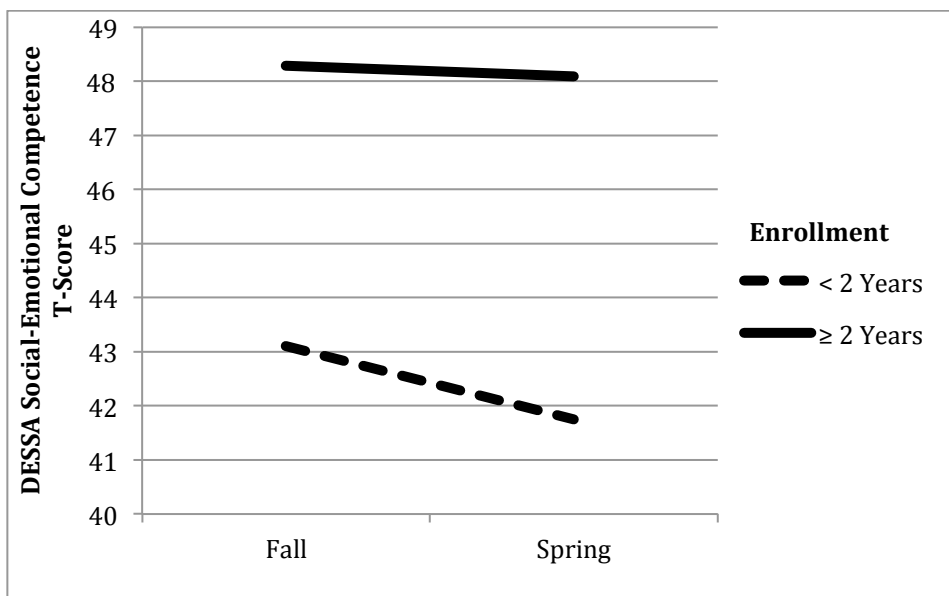


Figure 4.11

Research Question Three: Guardian Ratings of Children's Social-Emotional Competence Over Time by Length of Enrollment in Years (Yrs) and Number of Reasons for Referral (RR)

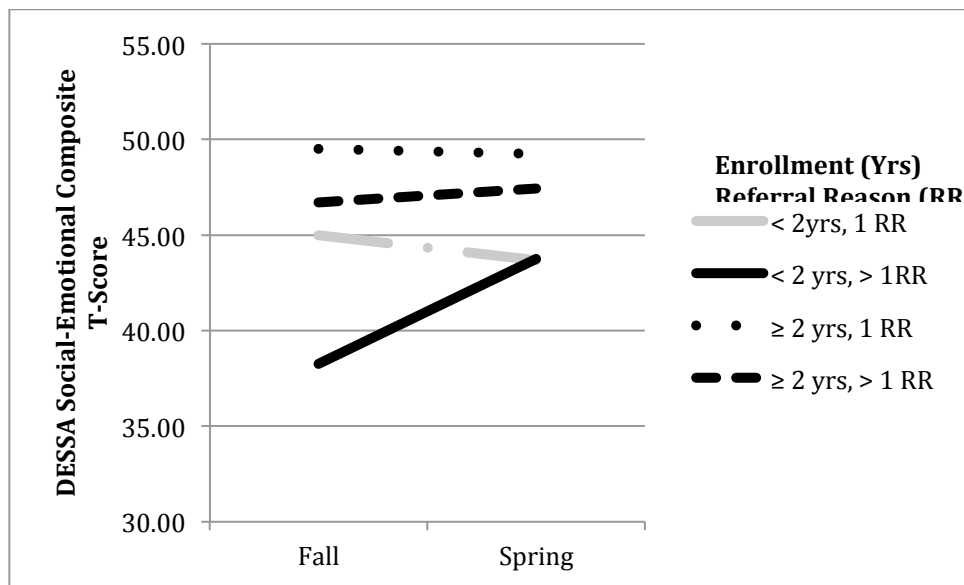


Figure 4.12

Research Question Three: Teacher Ratings of Children's Social Skills Over Time Grouped by Number of Reasons for Referral

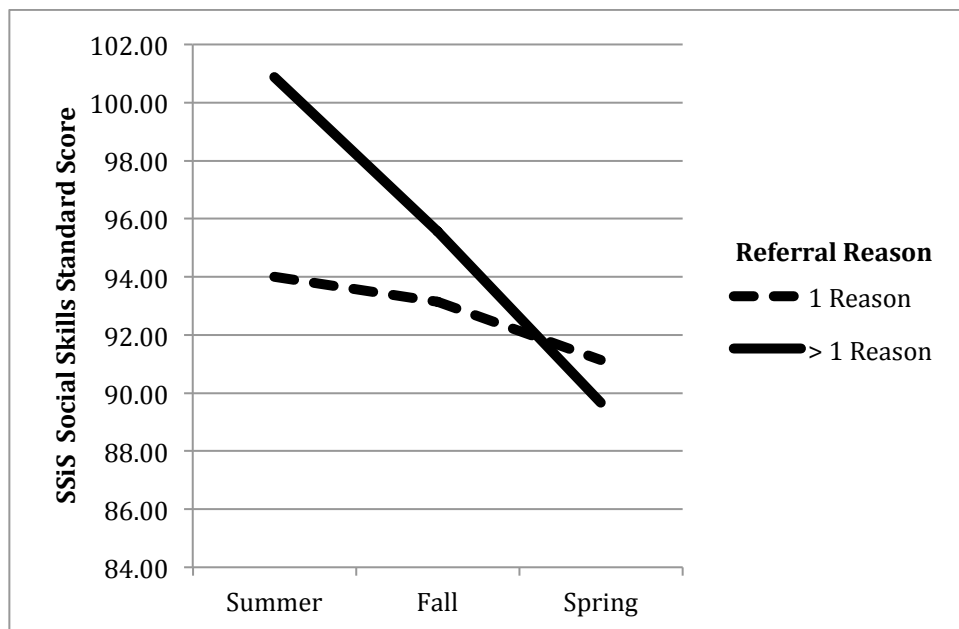


Figure 4.13

Research Question Three: Teacher Ratings of Children’s Social Skills Over Time Grouped by Length of Enrollment

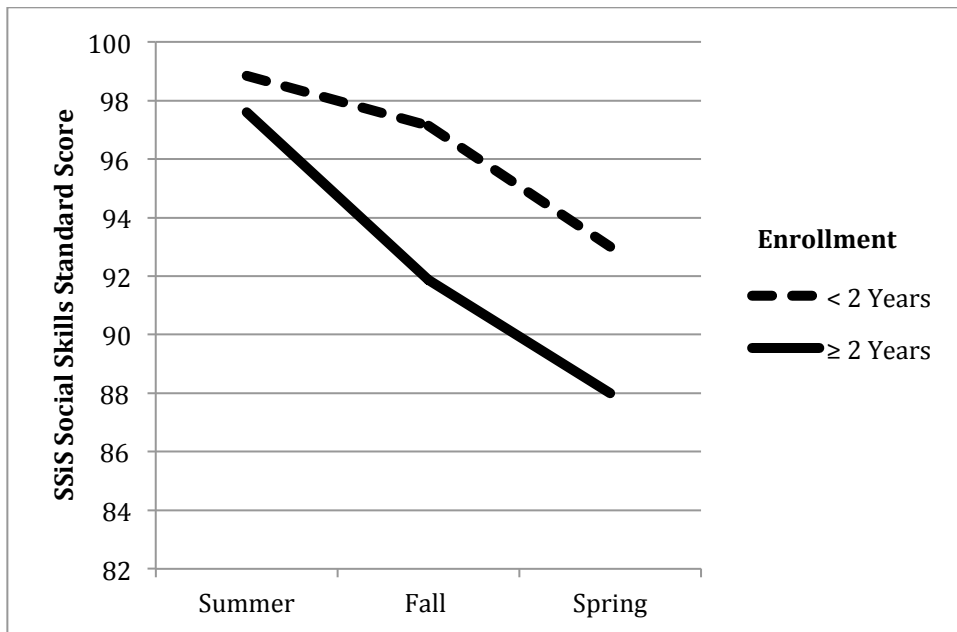


Figure 4.14

Research Question Three: Teacher Ratings of Children’s Social Skills Over Time by Length of Enrollment in Years (Yrs) and Number of Reasons for Referral (RR)

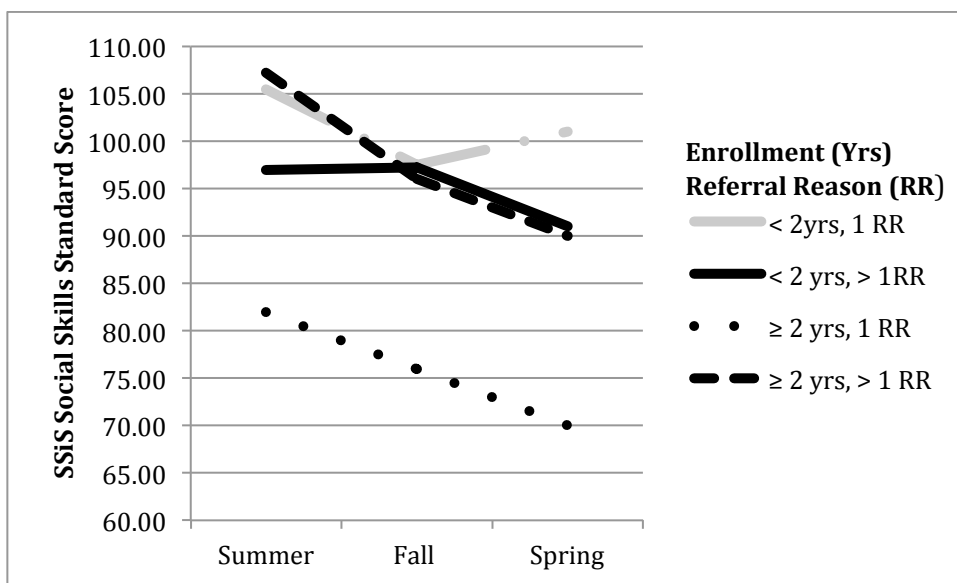


Figure 4.15

Research Question Three: Teacher Ratings of Children’s Problem Behaviors Over Time

Grouped by Number of Reasons for Referral

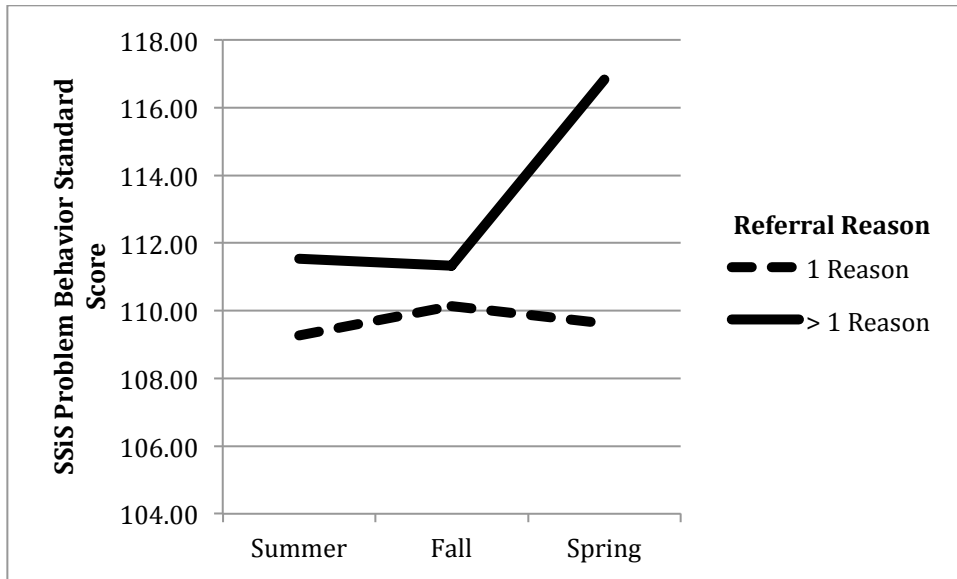


Figure 4.16

Research Question Three: Teacher Ratings of Children’s Problem Behaviors Over Time

Grouped by Length of Enrollment

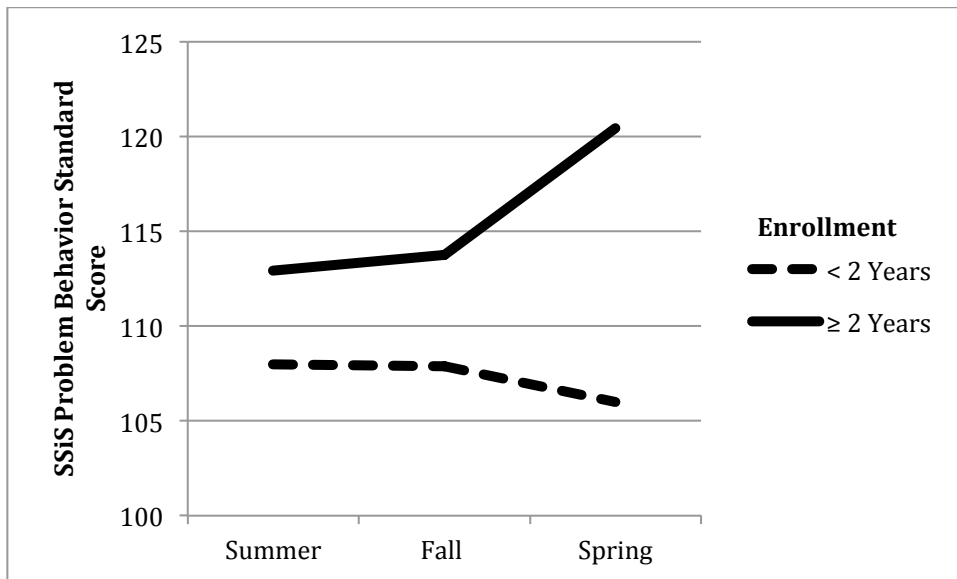


Figure 4.17

Research Question Three: Teacher Ratings of Children’s Problem Behaviors Over Time by Length of Enrollment in Years (Yrs) and Number of Reasons for Referral (RR)

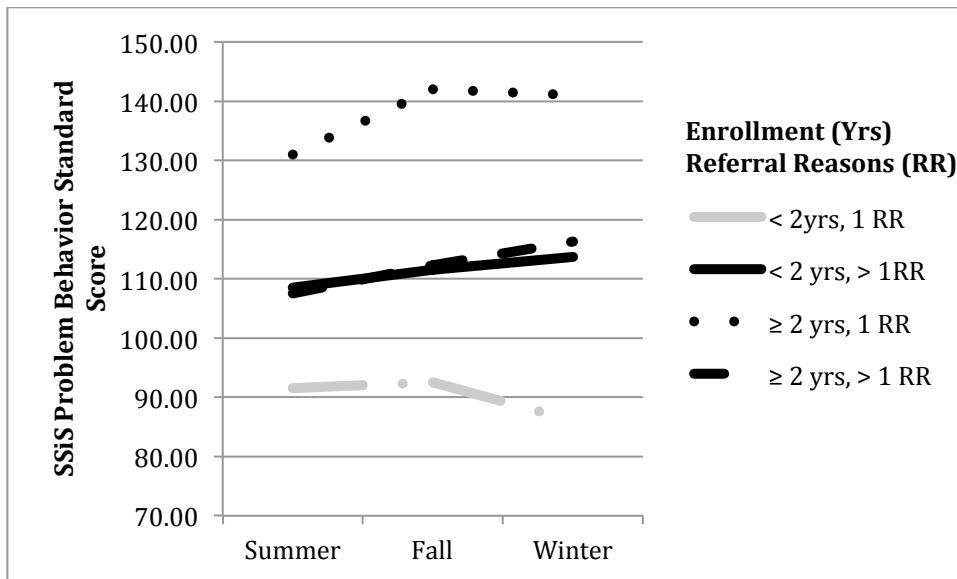


Figure 4.18

Research Question Three: Teacher Ratings of Children’s Social-Emotional Competence Over Time Grouped by Number of Reasons for Referral

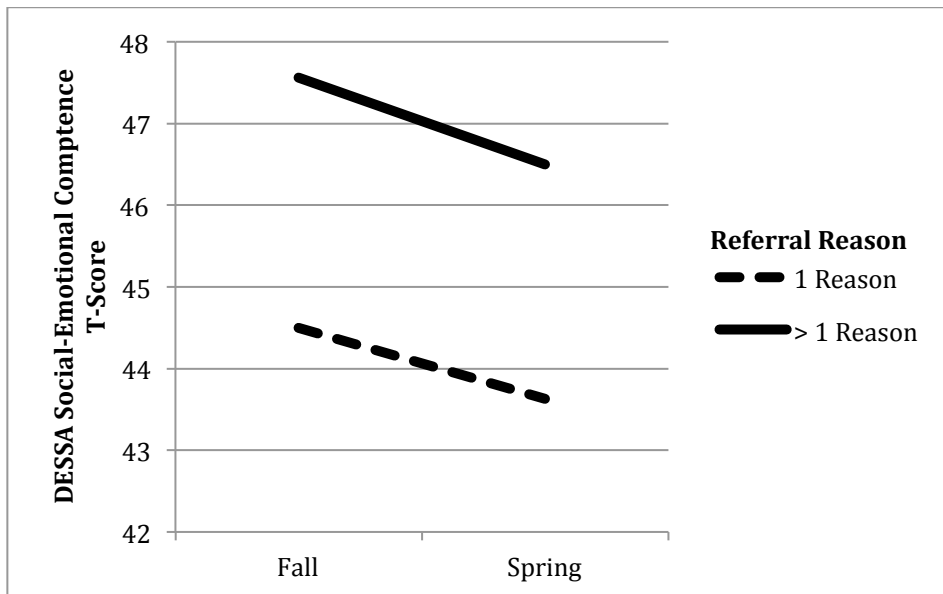


Figure 4.19

Research Question Four: Teacher Ratings of Children’s Social-Emotional Competence Over Time Grouped by Length of Enrollment

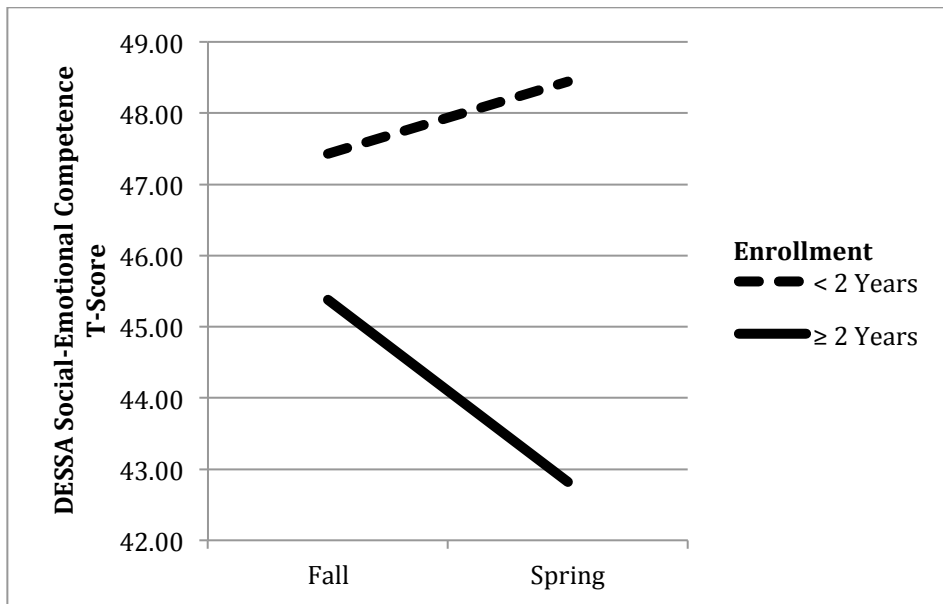


Figure 4.20

Research Question Four: Teacher Ratings of Children’s Social-Emotional Competence Over Time by Length of Enrollment in Years (Yrs) and Number of Reasons for Referral (RR)

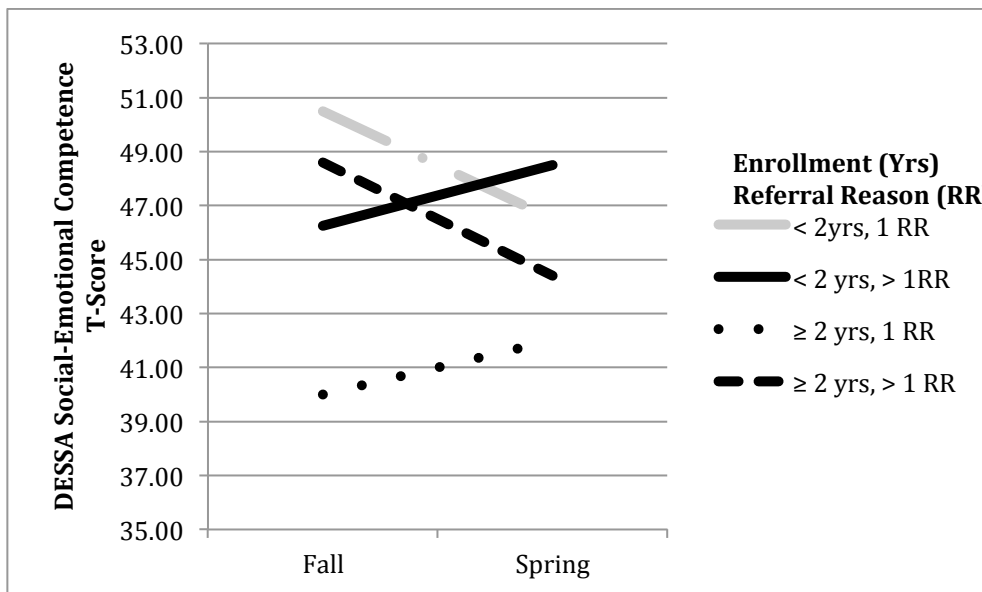


Figure 4.21

Research Question Four: Children's Scores on Bracken School Readiness

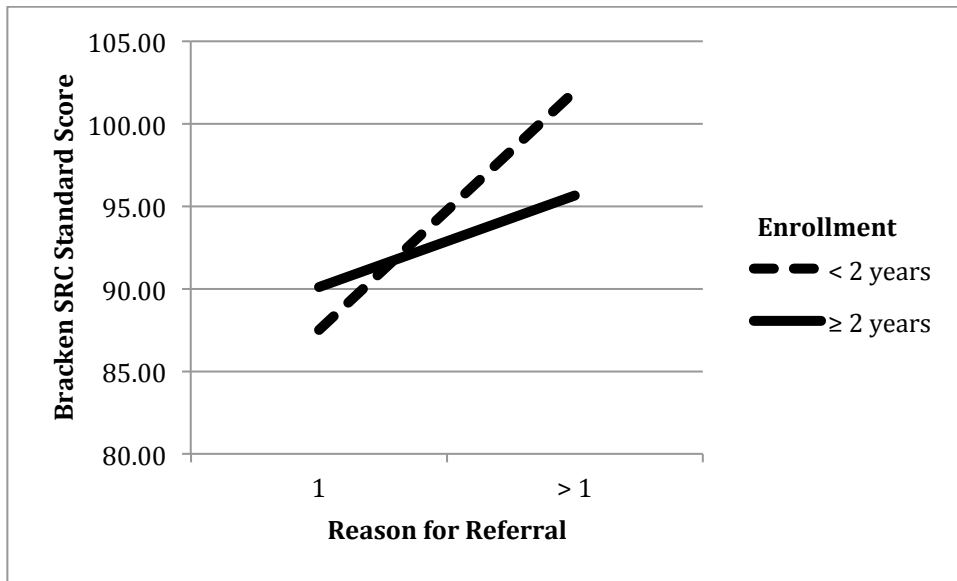


Figure 4.22

Research Question Four: Teacher Ratings of Children's Academic Competence Over Time

Grouped by Number of Reasons for Referral

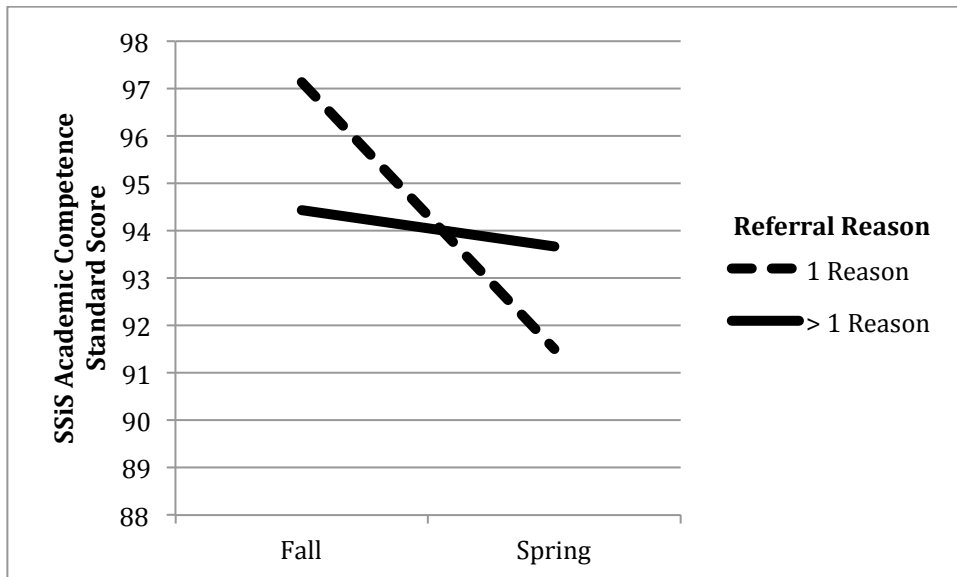


Figure 4.23

Research Question Four: Teacher Ratings of Children’s Academic Competence Over Time

Grouped by Length of Enrollment

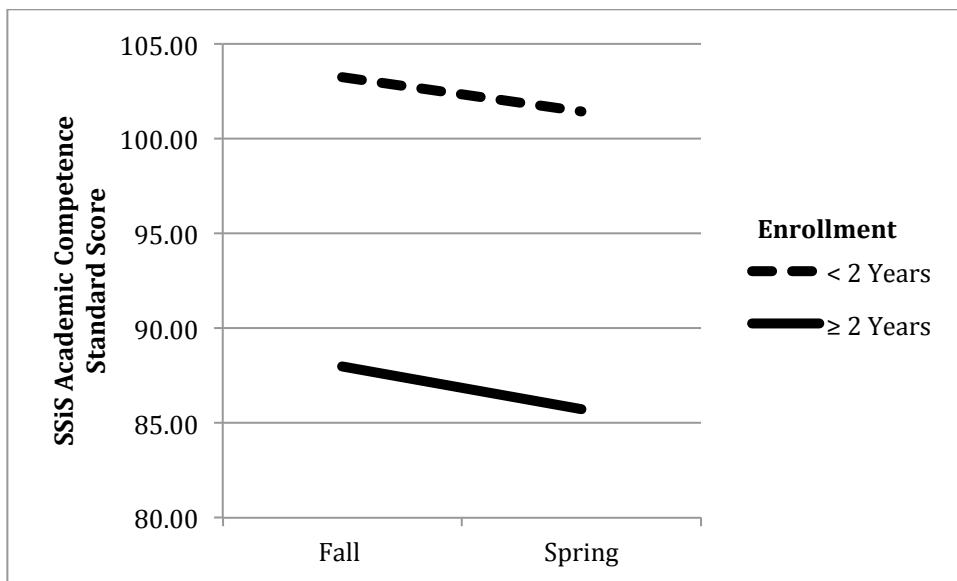


Figure 4.24

Research Question Four: Teacher Ratings of Children’s Academic Competence Over Time by

Length of Enrollment in Years (Yrs) and Number of Reasons for Referral (RR)

