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Approval Sheet

School of Social Work

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This is to certify that the dissertation prepared by Nicole Lynn Lee entitled Evaluating a day treatment program for children with serious emotional disorders has been approved by her committee as satisfactory completion of the dissertation requirement for the degree of Doctor of Philosophy.

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Date

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Evaluating a Day Treatment Program for Children
With Serious Emotional Disorder

A dissertation submitted in partial fulfillment of the requirements for the degree of
Doctor of Philosophy at Virginia Commonwealth University.

by

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Dedication

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Abstract

EVALUATING A DAY TREATMENT PROGRAM FOR CHILDREN
WITH SERIOUS EMOTIONAL DISORDER

by Nicole Lynn Lee, MSW

A dissertation submitted in partial fulfillment of the requirements for the degree of
Doctor of Philosophy at Virginia Commonwealth University.

Virginia Commonwealth University, 2004

Director: Marilyn A. Biggerstaff, D.S.W., Professor, School of Social Work

The current study used a longitudinal design to evaluate a day treatment program for children with serious emotional disorder located in Richmond, Virginia ($N = 101$). Child and Adolescent Functional Assessment Scale (Hodges, 1984, 1999) results were analyzed from children who had attended the program for at least six months. Repeated Measures Analysis of Variance tests indicated that children attending YDT for nine months improved their overall functioning $F(2, 217) = 26.23, p = .01$ as well as their functioning at school $F(3,279) = 10.822, p = .01$, home $F(3, 244) = 6.120, p = .01$, and in the community $F(3, 238) = 4.158, p = .01$. In addition, children improved their thinking $F(2, 232) = 5.595, p = .01$, behavior toward others $F(3, 279) = 24.230, p = .01$ and decreased the amount of self-harm $F(1, 121) = 7.546, p = .01$. Children began YDT with an average total CAFAS score of score of 85.90; however, after nine months of treatment, children dropped 20.40 points to an average CAFAS score of 65.50 points. Results indicate that

even the most functionally impaired children in the sample demonstrated some level of improvement. Implications for social work micro and macro practice are included.

CHAPTER 1:

Problem Overview

The current study evaluates a day treatment program for children with serious emotional disorder (SED). An evaluation study examines whether a specific program successfully accomplishes its desired outcomes and goals (Kettner, Moroney, & Martin, 1999). In essence, an evaluation study seeks to understand client characteristics or functioning after experiencing an intervention.

The specific intervention is a day treatment program for children ages 5 through 13 who are labeled as having serious emotional disorder (SED). The day treatment program is located in Richmond, Virginia and serves approximately 90 children with SED annually. Children attend the program each day for three hours after school and four days a week for five hours during the summer. The program is closed during all major holidays.

The day treatment program operates on the principles of social learning theory and behavior therapy. Behavior therapy is based on the central propositions of social learning theory and has widespread acceptance for use with children who have emotional and behavioral problems. Behavioral therapy practitioners believe that all behavior is learned and can be changed through positive or negative reinforcement (Skinner, 1938; Thomlinson & Thomlinson, 1996). Interventions based on behavioral theory define

acceptable behaviors and provide positive reinforcement when behaviors occur or negative reinforcement when acceptable behaviors do not occur. This study seeks to understand whether the day treatment program (1) increases the functioning of children across several domains, including home, school, and community, (2) increases children's positive behaviors toward others, and (3) decreases negative moods and emotions and negative thoughts and cognitions. A secondary purpose of this study is to identify the types of children who are most likely to benefit from the day treatment program. Specifically, does gender, medication use, or initial level of impairment affect the response of children with SED to behaviorally-based treatment?

Importance of current study

This study is important for several reasons. First, it provides additional information about how children with SED function over time. This is similar to studies conducted by Russell, Anderson, Kooreman, Wright, and Warner (2000) and by researchers from the Center for Mental Health Services (CMHS; 1998). Russell et al. and researchers from CMHS conducted studies evaluating the changes in functioning of children receiving therapeutic services. What is different about the current study is that the researcher evaluates children's functioning during three-month intervals instead of six-month intervals. Providing more data allows the researcher to detect more specific changes that may be overlooked in a traditional six month data collection plan. For instance, children with SED experience changes during such events as the beginning of a new school year or statewide testing periods that may cause fluctuations in functioning

levels (Quinn & Epstein, 1998). It is important to examine these changes as a way of determining how reactive children with SED might be to such changes and events.

In addition, Russell et al. (2000) and the Center for Mental Health Services (CMHS, 1998) evaluated interventions constructed on the system-of-care philosophy (Stroul & Friedman, 1986). Each system-of-care participant receives a variety of interventions that are culturally sensitive, family and child-focused, and accessible. The current study's focus is more narrow than the previous studies. Specifically, the current study evaluates a day treatment program in Virginia that is not a system-of-care organization. The researcher is concerned with the behaviorally-based day treatment intervention and the accompanying case management services associated with the day treatment program.

The current study bridges the gap between research and practice within the field of social work. This is the first program evaluation that the agency has undertaken. Agency staff can use findings from this study to determine needed changes in the program structure to ensure that program participants receive high quality, efficient, and effective services. Additionally, agency staff can use results from this study to determine the characteristics of participants who are best served by the day treatment program.

Finally, this research is important because it expands the literature on children with SED, a marginalized and underrepresented population. Many studies demonstrate the negative consequences of a label of SED. However, this evaluation focuses on the extent to which children with SED can improve and learn with their impairment. In this

aspect, this study is congruent with social work's mission of working to assist those who are marginalized and underrepresented.

Definition of Serious Emotional Disorder in Children

In order to conceptualize the current study, a definition of the term serious emotional disorder (SED) is necessary. The mental health, education, and policy literature use many terms to describe emotional and behavioral disorders in children. Some of these terms include serious emotional disorder, serious emotional disturbance, serious emotional illness, emotionally handicapped, and emotional and behavioral disorder. Further, widely used mental health diagnostic manuals such as the *Diagnostic and Statistical Manual IV of Mental Disorders* (DSM-IV TR) (APA, 2000) or mental health textbooks such as the *Synopsis of Psychiatry* (Kaplan & Sadock, 1998) do not provide precise definitions of these terms.

The above mentioned terms are not diagnostic labels; rather, mental health and education professionals use these terms to identify mental, behavioral, and emotional disorders in children. These terms are also used in legislation specifically addressing children's educational and mental health services. *The Diagnostic and Statistical Manual IV of Mental Disorders* (DSM-IV TR) (APA, 2000) lists criteria of specific mental illnesses and behavioral disorders. Different agencies may require additional criteria such as a recognized DSM-IV diagnosis in order for children to meet their definition of emotional and behavioral disorder. For example, the Substance Abuse and Mental Health Services Administration's (SAMHSA) definition of emotional and behavioral disorders

in children requires a DSM-IV diagnosis while the Richmond public school system's definition does not.

For this study, the researcher uses the term serious emotional disorder (SED) to denote children (those under 17 years of age) in several categories: (1) with a DSM-IV TR diagnosis and problems in personality development and social functioning that have existed for at least one year, (2) without a DSM-IV TR diagnosis who have environmental factors or psychological stressors such as poverty or a history of abuse in addition to poor coping and social skills that increase the probability that the child will experience serious mental illness as an adult, (3) who meet the definition of serious emotional disturbance (SED) as defined by the 1975 Individuals with Disabilities Act and 1992 (IDEA, P.L. 102-119) and 1997 (IDEA, P.L. 105-117) amendments. These children are also, because of their family or environmental histories and poor coping skills, at risk for serious mental illness in adulthood. This definition is appropriate to use in this study because this definition (1) accurately characterizes the children accepted by the day treatment program, (2) is congruent with the social work mandate of observing the person in his or her environment, and (3) includes children with a variety of symptoms and DSM-IV TR disorders.

The term serious emotional disorder (SED) is not to be confused with serious emotional disturbance. Serious emotional disorder includes those children labeled as seriously emotionally disturbed and includes those who are at-risk for a label of serious emotional disturbance or serious mental illness in adulthood. In this study, the

abbreviation SED refers to serious emotional disorder whereas the abbreviation SEDist refers to serious emotional disturbance.

Incidence and Prevalence of Serious Emotional Disorder

Determining the incidence and prevalence of SED in children is problematic and depends on the specific diagnostic criteria used by the assessing agency or system (Anderson, 2000; Narrow et al., 1998). For example, mental health organizations that receive Medicaid funding use the Substance Abuse and Mental Health Services Administration's (SAMHSA) definition of serious emotional disturbance to qualify children with emotional and behavioral problems for services. This definition defines persons with serious emotional disturbance as:

Persons from birth up to age 18 who currently or at any time during the past year have had a diagnosable mental, behavioral, or emotional disorder of sufficient duration to meet diagnostic criteria specified within DSM-IV, that resulted in functional impairment which substantially interferes with or limits the child's role or functioning in family, school, or community activities (SAMHSA, 1993, p. 29425).

In contrast, the public education school system identifies children with emotional and behavioral problems based on criteria set forth by the Individuals with Disabilities Education Act (IDEA, P.L. 102-119). This act defines and classifies children who are eligible for special services (e.g., placement in a specialized classroom) within the public school system. According to IDEA, serious emotional disturbance is

a condition exhibiting one or more of the following characteristics over a long period of time and to a marked degree that adversely affects educational performance. These include an inability to learn that cannot be explained by intellectual, sensory, or health factors; an inability to build or maintain satisfactory interpersonal relationships with peers and teachers; inappropriate types of behaviors or feelings under normal circumstances; a general pervasive mood of unhappiness or depression; and /or a tendency to develop physical symptoms or fears associated with personal or school problems.

The SAMHSA and IDEA definitions are similar. Both reflect the funding sources of mental health or education, assumptions concerning mental illness, and the desired outcome for children. Mental health services are primarily based on a medical model of assessment, treatment, and remediation. Mental health organizations receiving Medicaid funding define emotional and behavioral disorders as a range of DSM diagnoses (the current DSM edition is used) related to children and adolescents. In contrast, the public school's emphasis is on education; thus, criteria for emotional and behavioral disorder involve examining a child's behavior and determining whether it impedes his or her peers' classroom educational experience. Additionally, both definitions mandate that children must exhibit functional impairment. In other words, children, when compared with their peers, must have limitations that would not exist without the disorder.

The mental health and education definitions result in different epidemiological pictures of SED or emotional and behavioral disorder in children. Based on the SAMHSA definition of SED, an estimated 20% or six to nine million youth (Satcher,

2000; Stephenson, 2000; Zill & Schoenborn, 1990) have a DSM-IV diagnosis; this includes the 9 to 13% of youth who have substantial functional impairment and 5 to 9% of youth who have extreme functional impairment (Mental Health Weekly, 2000, p.1). In contrast, the education system's definition of SED (IDEA) results in an estimate of 446,635 children nationwide attending the public school system with SED (Whorton, Siders, Fowler, & Naylor, 2000).

The discrepancy in estimates of SED makes understanding the magnitude of SED difficult. Depending on the definition used, the incidence and prevalence of SED may appear to be over or underestimated. Different diagnostic criteria may have different connotations of "functional impairment," thus, a child may qualify for services in one system yet be denied in another (Costello, Angold, & Keeler, 1999). In addition, a single system may use the same diagnostic criteria, but individual human service professionals may interpret the criteria differently. Thus, individual human service professionals working in the same system may develop different prevalence rates using the same criteria (Skiba, Grizzle, & Minke, 1994; Stinnett, Bull, Koonce, & Aldridge, 1999).

The prevalence rates based on the SAMHSA and IDEA definitions of SED differ. Prevalence rates derived from SAMHSA's criteria present a more accurate representation of the number of children experiencing SED because the SAMHSA prevalence rate includes children who may demonstrate behaviors in the school setting as well as at home or in the community. The IDEA method of assessment is limited to a focus on behaviors that are most likely to disrupt the educational setting. These behaviors tend to manifest

themselves externally (i.e. those behaviors such as those associated with Attention Deficit Hyperactivity Disorder) and are easily recognized by teachers. The SAMHSA definition includes disorders such as depression that may manifest themselves internally.

O'Shaughnessy, Lane, & Beebe-Frankenberger (2002) estimate that the referral of children with emotional and behavioral disorders usually, "...is a signal that the teacher has reached the limit of his or her tolerance with respect to individual differences" (p. 4). Consequently, assessment personnel may ignore children with internalizing behaviors such as depression or anxiety (Wagner, 1995). Further, the public school's criteria (IDEA) are limited to behaviors in the school environment and assessment personnel may fail to identify children with SED whose difficulties are primarily in the home or community environments.

Brief History of Study of Emotional/Behavioral Disorders in Children

Identifying children with emotional or behavioral difficulties as "different" and requiring treatment is not a new phenomenon. Rich (1982) provides evidence that as early as 500 A.D., people identified children with behavioral or emotional difficulties as different and sought to provide for their treatment. Knowledge of emotional and behavioral disorders was limited to "superstitions." Consequently, it was believed that afflicted children were possessed by demons. Treatment for these children usually involved inhumane methods to extract the "demons."

It was not until the end of the 19th and beginning of the 20th centuries that treatment for emotional and behavioral disorders in children became more "scientific" (Rich, 1982). During this time, researchers developed formal classification systems based

on observing specific behaviors exhibited by children. In 1896, the first clinic for “maladjusted” children in the United States was founded (Gerard, 1956).

During this time, research shifted beliefs about children’s behavior and emotions based on superstition as an explanatory mechanism to empirical observations and the medical model to define, examine, and explain emotional and behavioral disorders in children (Rich, 1982). However, even the “empirical scientific observations” of the day were influenced by socio-political values that marginalized certain groups of people. For instance, Margaret Gerard (1956), a prominent child psychiatrist believed that inappropriate ego development caused emotional disorders in children. Gerard posited that the ego developed inappropriately due to a mother or primary caregiver’s inability to parent or because of the child’s experience of trauma. She detailed several maternal personality types that were disadvantageous for children. Mothers identified as neurotic, withdrawn, or inept were a causative factor in children’s disorders.

Gerard constructed her work upon the social and political assumptions of the day, however, her work is important because it illustrates Rich’s (1982) belief concerning the role of the medical model in treating children with emotional disorders. Gerard’s work emphasized emotional disorders as legitimate illnesses that required humane treatment. She was concerned with identifying the multiple causes of emotional disorders. Additionally, her work broadened the scope of emotional disorders. She provided case examples of a wide range of conditions (i.e. enuresis, ulcerative colitis) that she identified as symptoms of emotional disorders.

Today, society's understanding of the etiology and typology of children with behavioral and or emotional difficulties has increased. During the late 1960s and early 1970s, two seminal classification systems were developed that further legitimized the study of children with emotional and behavioral difficulties. In 1968, the Diagnostic and Statistics Manual (2nd edition) provided a classification system of emotional and behavioral disorders in children (APA, DSM-II, 1968). In 1975, the Education of All Handicapped Children Act (P.L. 94-142) provided information on how to provide educational services to children with disabilities. This law was the precursor to the current Individuals with Disabilities Act (P.L. 102-119). IDEA provides a classification system for children with disabilities and revolutionized the way in which these children received academic services from the public school system). Since their initial inception, the Diagnostic and Statistics Manual and IDEA have been revised to reflect current research and societal values concerning serious emotional disorders in children. The current version of IDEA is the version amended in 1997 and the current DSM is the DSMIV-TR published in 2000.

Public and private agencies, foundations, and organizations have increased the amount of resources, both human and financial dedicated to the study of serious emotional disorders in children. In 1984, the federal government provided funds for researchers to evaluate mental health services and provide suggestions on improving the quality, effectiveness, accessibility, and cultural sensitivity of services for children with SED (Stroul & Friedman, 1986). The result of this initiative was a comprehensive document that assessed services for children with SED and provided mandates for work

with these children and their families (Stroul & Friedman). The Stroul and Friedman document described a philosophy that mental health professionals should use to improve the quality of care for children with SED and their families. This philosophy, known as the “system-of-care” became the foundation for many mental health service agencies. Examples include mental health service agencies in California, North Dakota, New Mexico, Virginia, and Pennsylvania. While these states are not the only ones constructed upon the systems of care philosophy, this list demonstrates the diversity of states using systems of care.

In the same year of the document’s release, state departments of education, in an effort to clarify how students with emotional and behavioral disorders should be educated, reevaluated or developed guidelines for work with children with emotional and behavioral disorders (for example California State Department of Education, 1986; Virginia Department of Education, 1986). According to the Virginia Department of Education (1986), the Virginia handbook on programming was developed,

...in part, as a direct response to many requests for program assistance received by the Virginia Department of Education from school divisions, private schools, and other institutions providing educational services for the emotionally disturbed. All of the agencies have shown a desire to expand and improve their educational services to individuals with serious emotional handicaps.

Accordingly, it is the intent of the study committee which developed this publication, and of the Department of Education to offer recommendations, expertise, and guidance to help achieve these goals (p.1).

Further, after Stroul & Friedman (1986) completed their document describing the system of care philosophy, organizations such the Center for Mental Health Services (CMHS), Robert Wood Johnson Foundation, and the Civilian Health and Medical Program of the Uniformed Services (CHAMPUS) awarded money to communities throughout the United States that developed and evaluated the effectiveness of the system-of-care philosophy. As a result of increased funding, researchers were able to evaluate the effectiveness of system-of-care organizations, develop typologies of youth with SED, and conduct longitudinal studies that examined the outcomes for children with SED (Foster, 2000; Foster, Kelsch, Kamradt, Sosna, & Yang, 2001; Garland, et. al, 2001; Hernandez et al., 2001; Holden, Friedman, & Santiago, 2001; Liao, Mantuffel, Paulic, & Sondheimer, 2001; Substance Abuse and Mental Health Services Administration, 1999; Vinson, Brannan, Baughman, Wilce, & Gawron., 2001; Walrath, Sharp, Zuber, & Leaf, 2001). These studies increased the knowledge about children with SEDs, their demographics and development over time.

Today, society is more cognizant of the tremendous emotional and financial costs of SED to children, families, and communities. However, there remains a need to gather information about children with SED, risk factors, and effective and efficient treatment options. Additional studies are needed to understand children's functioning across different domains (i.e. home, school, and community). Lane, Gresham, and O'Shaughnessy (2002) point to the need for studies focusing on how children with SED function within the school environment and research testing current curriculum for children with SED and the implementation of screening procedures. Stephenson (2000)

points to the need for studies examining the efficacy of psychotropic drugs for children as well as the cost-effectiveness of mental health services for SED. Additional research is needed to examine the demographic characteristics of children with SED to determine if certain interventions benefit a specific population more than others (Quinn & Epstein, 1998).

Risk Factors for SED

Current knowledge about the causes of SED in children indicates that a variety of risk factors are implicated. Risk factors are those circumstances that increase the probability of a problem condition and include prenatal factors as well as environmental influences (Coie et al., 1993). Risk factors for SED are biological/genetic (such as a child's individual characteristics such as race) or environmental (characteristics such as the child's family structure). Individual or environmental risk factors do not cause SED; rather, the presence of multiple risk factors increases the probability that a child will receive a label of SED (Quinn & Epstein, 1998).

Individual risk factors include those characteristics transmitted genetically or that exist due to the child's biological composition (Kirby & Fraser, 1997). For example, being male increases the probability that a child will be labeled with an emotional or behavioral disorder (Lavigne et al., 1996; Mason, Chapman, & Scott, 1999; SAMHS, 1999; Wagner, 1995). Males tend to have prevalence rates 36% higher than females and differences between the genders tend to be the most evident in children between 6 and 11 years of age (Zill & Schoenborn, 1990) or between 6 and 14 years of age (JAMA, 1995). Further, males tend to have a greater degree of functional impairment than females

(Riley, Ensminger, Green, & Kang, 1998). This is true even in studies such as one conducted by Liao, Manteuffel, Paulic, and Sondheimer (2001) where females exhibited a greater number of emotional and behavioral symptoms.

There is some evidence that race, specifically being African American increases the probability that a child will receive a label of SED (Lavigne et al., 1996; Oswald, Coutinho, Best, & Singh, 1999; Wagner, 1995). African Americans comprise 12% of the United States population; however, 25% of all children labeled with serious emotional disorders are African American (Wagner).

Debate exists about whether the effect of race on the label of SED represents a true relationship or a spurious one. For instance, researchers note that when variables such as mother's level of education, marital status, and child's birth weight are controlled, African American children are labeled as SED in similar rates to whites (Mason, Chapman, & Scott, 1999). In addition, researchers note that assessment tools that are not culturally sensitive may inflate the actual incidence of SED in African Americans; consequently, disproportionate reports of the prevalence among African American children may be misleading.

Other biological/genetic risk factors include having a family history of mental illness (SAMHSA, 1999; Satcher, 2000; Stern, Smith, Jang, 1999; Quinn & Epstein, 1998; Walrath, Mandell, & Leaf, 2001) and being a low birth weight baby (Satcher, 2000). In addition, some research has shown that a child's probability of being labeled with SED increases with age (Zill & Schoenborn, 1990). Children between the ages of five and seven have a 5.3% chance of being labeled SED with the chance of a label of

SED increasing to 18.5% for children 12 to 17 years of age (Zill & Schoenborn).

However, some researchers posit that the incidence of SED among children does not increase among children's age cohorts; rather, the rate increases with the addition of a number of symptoms associated with SED that affect children as they grow older. For example, the rates of conduct disorder and posttraumatic stress disorder are higher among older children and adolescents.

There may also be a relationship between a child's physical health and being labeled with SED. Researchers discovered that children with the most serious emotional and behavioral disorders were more likely to have chronic health conditions (Bassett, Chase, Folstein, & Regier, 1998; Combs-Orme, Heflinger & Simpkins, 2002). However, it is not clear whether this represents an actual relationship between SED and health or a spurious relationship with poverty as the mediating or confounding variable. Specifically, is it SED that increased that probability of chronic health conditions or does poverty have more of a role in this relationship?

Environmental risk-factors include characteristics about the child's external environment that increase the probability that the child will be labeled with SED (Kirby & Fraser, 1997). Environmental risk factors are important to understand "because a child's mental health is expressed in this context" (Satcher, 2000, p. 9).

Children who live in poverty are more likely to receive a label of SED (Crowley, Mikulich, Ehlers, Whitmore, & MacDonald, 2001; Illback, Nelson & Saunders, 1998; Stern, Smith, & Jang, 1999; Wagner, 1995; Zill & Schoenborn, 1990). Thirty-three percent of children with SED are from households with incomes of less than \$12,000

whereas only 18% of children in the general population have household incomes of less than \$12,000 (Wagner, 1995). Children who live in poverty have an increased risk of exposure to lead paint, another environmental risk factor of SED (Satcher, 2000). In addition, research indicates that there is a connection between socioeconomic level and type and severity of disorder (Reinherz, Giaconia, Lefkowitz, Pakiz, & Frost, 1993; Tiet et al., 2001).

The child's family structure may increase the likelihood of a label of SED. Children in homes with a mother and stepfather or those living with a single mother experience higher rates of SED than children living with both biological parents (Zill & Schoenborn, 1990). Forty-four percent of children diagnosed with SED reside in single-parent households versus 25% of children in the general population who reside in single parent homes (Wagner, 1995). Additional environmental risk factors include life events such as a family history of violence (Quinn & Epstein, 1998; Walrath, Mandell, & Leaf, 2001), family substance abuse (Greenbaum et al., 1998; Illback, Nelson, & Sanders, 1998; Quinn & Epstein; Walrath Mandell & Leaf), family involvement with the criminal justice system (Walrath et al.) child physical abuse (Illback et al.), and child sexual abuse (Walrath et al.).

Some evidence suggests that environmental risk factors may influence the types of emotional and behavioral disorders that are diagnosed in children. For example, having a parent in an occupation characterized by less mentally complex tasks (which is likely to occur if the family is in poverty) increases a child's risk of receiving a diagnosis of conduct disorder while being an only child increases the risk for anxiety disorders (Kroes

et al., 2002). Further, living in a single-parent home increases a child's risk of anxiety and mood disorders (Kroes et al., 2002).

Protective Factors for SED

Protective factors are those that protect a child from a label of SED or from the symptoms or behaviors that lead to this being applied to a child. As in the case of risk factors, individual protective factors do not preclude a child from a label of SED. Rather, multiple protective factors decrease the probability that a child will receive a label of SED. Most studies concentrate on defining risk; however, there is evidence to suggest that certain factors are protective in nature. In a Dutch study, children from two-parent homes where parents had at least an average level of education and socioeconomic status (as documented by a categorization scheme developed for the Dutch Census Bureau) were protected from a label of SED (Kroes et al., 2002).

Protective factors are helpful even in children already labeled with SED. Researchers from SAMHSA documented that among children with SED, there was a correlation between family and personal strengths and level of functioning. Specifically, among all children with SED, those with the most personal and family strengths as measured by the Behavioral and Emotional Rating Scale (Epstein & Sharma, 1998) had the highest levels of functioning (SAMHSA, 1999). Examples of personal and family strengths include a positive outlook and life and the availability of friends and family members who may provide emotional support. In addition, Saleebey (1997) posits that children who are autonomous and express social competence, problem-solving skills, and a sense of purpose are able to handle adversity better than children who do not possess

these traits. Thus, children with SED may use personal and family strengths to reduce the level of functional impairment experienced.

Characteristics of Children with SED

Children labeled as SED have an increased risk for behavioral, academic, and social difficulties that can limit the child's ability to actively participate in family, school, social, and community roles. Some children with SED have poor self-management, trouble following time limits, are less proficient in peer group activities, have difficulty managing anger, and difficulty following rules (Riley, Ensminger, Green & Kang, 1998). These children experience difficulties making and maintaining friendships (Buysse, Goldman, & Skinner 2002), have lower levels of self-esteem, and problems in peer and family relationships (Riley et al.). In addition, the more behavior problems a child has, the more he or she is likely to think less about the welfare of others (Blair, Monson, & Frederickson, 2001).

Academic difficulties associated with SED include higher rates of school absenteeism than children in the general population (Wagner, 1995), chronic behavior problems (noncompliance, aggression, and disrespect toward authority figures) and lower overall academic achievement (Greenbaum et al., 1998). Within the academic setting, children with SED have lower levels of participation in youth clubs and school-based social activities (Riley et al., 1998).

Research indicates that some children with SED have difficulties executing tasks that utilize executive functioning skills. Executive functioning skills are those skills that deal with memory and problem-solving. Children with SED, specifically ADHD, are less

attentive and less able to reproduce tasks efficiently (Barkley, Edwards, Laneri, Flecher & Metevia, 2001). In addition, when given instructions to complete a self-paced task, children with ADHD have more difficulty with instructions given slowly as well as instructions given quickly (Carte, Nigg, & Hinshaw, 1996).

There appear to be gender differences in children with SED. A consistent finding is that boys with SED seem to be more functionally impaired than girls with SED (Liao et al., 2001; Riley et al., 1998). Further, it appears that girls may have more internalizing symptoms and that boys have more externalizing symptoms (Liao et al.; Romano, Tremblay, Vitaro, Zoccolillo, & Pagani, 2001). However, there are some researchers such as Chabra, Chavez, and Harris (1999) that discovered that boys had more internalizing and externalizing symptoms.

Financial and Human Consequences of Being Labeled as SED

Having a child labeled as SED affects the family and the family's community as well as the individual child. In a study evaluating the cost of services to children with SED, researchers estimated that it costs U.S. citizens approximately \$1,333 to \$4,000 per month per child; the higher expenses going to treat children with the most impairment in functioning (Foster et al., 2001). This amount includes direct mental health services such as day treatment, residential care, mobile crisis units, individual therapy, and family therapy. This amount does not include unintentional costs such as income lost when caregivers miss work due to their child's illness, the cost of communities hiring professionals such as teachers, social workers, other master's level therapists, psychologists and psychiatrists to work with the child, increased juvenile justice costs, or

the increase in costs to social service organizations that work with children with SED. Additionally, this amount does not include costs such as increased health insurance costs.

The financial cost to families and the community is substantial. The stress of caring for a child or children with SED is considerable as well. The stigma associated with a diagnosis of SED may prevent children and families from seeking necessary resources (Satcher, 2000). Families may prefer to keep their difficulties private and suffer in silence. Overburdened caregivers may experience additional stress from multiple and often uncoordinated service systems such as the mental health, social services, juvenile justice, and education systems (Yatchmenoff, Koren, Friesen, Gordon, Kinney, 1998). Families from underrepresented groups such as African Americans, Native Americans, Asians, and Latinos, may receive services that they deem culturally insensitive and incongruent with their norms and beliefs (Satcher). In addition, family members may expend a disproportionate amount of time and attention on the child or children with SED residing in the household. Families may have to adjust their work schedules and family activities to accommodate a child with SED (Rosenzweig, Brennan & Ogilvie, 2002). Primary caregivers and other family members may overlook the needs of children without a diagnosis of SED.

Current Treatment Options

According to Stroul and Friedman (1986), effective treatment for SED includes those interventions that are congruent with values described by the system-of-care philosophy. This philosophy mandates that services are culturally sensitive, family and child-focused, and coordinated with each other. National studies such as those conducted

by the Substance Abuse and Mental Health Services Administration (SAMHSA) (1999) confirm that children receiving services from organizations with a systems-of-care philosophy show greater improvements in functioning than those receiving care from non-system-of-care organizations. Additionally, the families of children receiving care from system-of-care organizations report greater satisfaction with services (SAMHSA).

Interventions adhering to the system-of-care philosophy as defined by Stroul and Friedman (1986) are desired (SAMHSA, 1999). However, the system-of-care philosophy is only successful if it is composed of sound treatments/interventions, those that show effectiveness even without being part of a system-of-care. Some successful treatments/interventions for children with SED include medication, family interventions, school-based interventions and community interventions. Popular interventions for children with SED include those interventions that are behaviorally-based. These interventions are popular in schools and in the community (in the form of day treatment programs). Behaviorally-based interventions may involve an entire class of SED children adopting specific rules and consequences for classroom behaviors (e.g., Salend, Whittaker, Reeder, 1992) or teachers developing behavior plans for specific children (Musser, Bray, Kehle, & Jenson, 2001). However, all of the behaviorally-based interventions involve children's understanding of acceptable behaviors and the consequences for negative behaviors. In addition, all of the behaviorally-based interventions involve a degree of collaboration. This may mean collaboration between teachers, parents, and community leaders (e.g., Hendrickson, Gable, Conroy, Fox, & Smith, 1999; Kutash, Duchonowski, Sumi, Rudo, & Harris, 2002), or collaboration

between students and teachers (e.g., Musser, Bray et al.; Theodore, Bray, Kehle, & Jenson, 2001; Salend et al.). Further, behaviorally-based interventions may include teachers working specifically with other professions such as social work (e.g., Viggani, Reid, & Bailey-Dempsey, 2002) and school psychology (e.g., Noell, Duhon, Gatti, & Connell, 2002).

The current study evaluates a program that is not a system-of-care organization. If system-of-care organizations are the most successful, why evaluate a non-system-of-care organization? Current research demonstrates that if this program is proved effective and combined with other proven effective interventions, the newly created system-of-care will increase the overall effectiveness, efficiency, and quality of services. However, the individual interventions comprising a system-of-care must be effective. Thus, demonstrating that the day treatment program is successful could be the first step in constructing a system-of-care for children in the Richmond area.

Social Work's Role with Children with SED

Social workers have multiple and varied roles in work with children with SED. Social workers are some of the main providers of mental health services in the United States (Dubois & Miley, 2002); thus, children with SED are likely to interact with a social worker or team that includes social workers during the treatment or intervention process. Children may interact with social workers conducting initial client assessments, developing and administering clinical interventions, facilitating therapeutic groups, conducting educational classes serving as the primary liaison between the client and client's family and other members of the therapeutic team such as the psychiatrist or

nurse. In addition social workers may work on the macro level instituting system-level changes. Social workers may develop policies, large or small-scaled, that affect the way in which service providers administer services to children with SED or work on the state or federal level to advocate for specific legislation or policies for children with SED and their families.

Finally, social workers have an important role in shaping mental health professionals' beliefs about children with SED. Social workers must reevaluate how they view childhood disorders and their role as social workers. There is evidence that suggests that children with SED develop into adults with considerable functional impairment (Rylance, 1998; Wagner, 1995). A diagnosis of SED has significant long-term consequences; thus, social workers must view SED as the beginning of a possible future of impairment instead of merely treating the current symptoms. Treatment must be future-oriented in teaching children and their families how to manage with their current functional impairment while preventing future emotional impairment. In order to accomplish this, social workers must employ evidence-based practice and evaluate interventions for their effectiveness, efficiency, and quality. The current study evaluates an intervention that if proven successful, could become part of a larger system-of-care. Thus, the current study is future-oriented and relevant for social work knowledge-building as well as direct social work practice.

Chapter one provided an overview of the current evaluation. The background of children labeled with SED, definitions and origins of this diagnostic label and an

introduction to risk and protective factors was included. Chapter two reviews the literature on the target population, children with SED.

CHAPTER 2

Literature Review

This chapter summarizes the literature from 1985 to the present on children with serious emotional disorders (SED). The author selected this time period because 1985 represented a distinct shift in the philosophy concerning how mental health practitioners addressed children with emotional and behavioral disorders. Specifically, in 1986, Stroul and Friedman defined the system-of-care principles for interventions that address emotional and behavioral disorders in children. This was the impetus for new funding and resources to assist children with emotional and behavioral disorders. Thus, 1985 represents a new era of support for research on children with SED.

This literature review is divided into five sections: a review of the definition of SED in children, risk factors for SED, characteristics of children with SED, current treatment, and long term outcomes. This chapter ends with a discussion of the research hypotheses and questions specific to this research.

Researchers and mental health practitioners use many terms to describe problems in emotional or behavioral functioning. Examples of these terms include: emotional disorders, emotional and behavioral disorder, emotional and behavioral disturbance, emotional disturbance, serious emotional disorder, emotionally handicapped, or serious emotional disturbance. In addition, some literature does not explicitly use any of the

abovementioned terms; instead, the literature identifies a specific DSM diagnosis and discusses the functional impairment that it produces for children.

For this literature review, the author conducted a search using all terms and combinations that are congruent with the following definition of SED: children with mental, behavioral, or emotional disorders resulting in functional impairment that substantially interferes or limits the child's role or functioning in his or her family, school or community activities (Substance Abuse Mental Health Services Administration; SAMHSA, 1993). This definition is equivalent to the definition of SED developed by the researcher for this study and adequately describes the study population. The literature included in this chapter fits this definition of SED.

Research Design and Sampling

Most studies included in this literature review use cross-sectional, longitudinal, or quasi-experimental designs. Few studies use true experimental designs. The quasi-experimental design is similar to the experimental design in that the researcher compares two or more groups (Campbell & Stanley, 1963). However, the true experimental design compares groups in which participants are randomly assigned. In contrast, many of the quasi experimental designs compare two or more groups that are not randomly assigned. Rather, the research design employs groups such as school classrooms or children receiving specific services.

Information on study design and sampling method is important to mention because the study design influences the ability to determine causality and the sampling method influences the generalizability of results. The scarcity of true experimental

designs limits the researcher's ability to attribute causation to study variables associated with SED or those variables associated with behavior or social outcomes of SED in children and their families.

Nevertheless, the research presented in this literature review increases our awareness of children with SED. Instead of focusing on causality, many researchers focus on the generalizability of results. Specifically, researchers examine large samples ($N > 1,000$) selected using probability sampling techniques. Many of these studies (e.g., Quinn & Epstein, 1998; Romano, Tremblay, Vitaro, Zoccolilo, & Pagani, 2001) are associated with large-scale national program evaluations.

Defining SED in Children and Prevalence Rates

The mental health and education communities do not have a universal definition of emotional and behavioral disorders in children; thus, a consistent definition of SED does not exist. Rather, multiple and sometimes ambiguous definitions exist that provide different descriptions of the severity and magnitude of emotional and behavioral disorders in the general population. The prevalence rates of SED change depending on the specific sector of care (juvenile justice, child welfare, public schools) that researchers examine and the desired goals or outcomes of the interventions (Garland et. al, 2001; Narrow et al., 2000; Wagner, 1995). For example, Anderson (2000) examined systems that intervene with children identified emotionally and behaviorally disordered and compiled a list of common criteria used to label children as having emotional and behavioral disorders. As part of his review, Anderson critiqued the different criteria for emotional and behavioral disorders and assessed how each influenced the prevalence

rates of emotional and behavioral disorders in children and the services provided to children identified as being emotionally and behaviorally disordered. Anderson's analysis revealed that even federal definitions that are similar, such as definitions from the Individuals with Disabilities Education Act (IDEA; Public Law 94-142) and from the Center for Mental Health Services (SAMHSA, 1993) are interpreted differently by service providers. Thus, the lack of a specific and operational definition of emotional and behaviorally disordered decreases the ability of organizations to have a consistent language and work collaboratively to develop, administer, and evaluate services for youth.

There are multiple definitions of emotional and behavioral disorders; however, every definition contains a mandate that children demonstrate functional impairment. Children may or may not have a disorder specified in the Diagnostic and Statistical Manual (DSM-IV TR) (APA, 2000) but they must exhibit an inability to participate in daily age-appropriate activities in the home, school, or community. Thus, functional impairment is an essential criteria for SED.

How does including a functional impairment criteria for SED change the prevalence of emotional and behavioral disorders in children? Children may have a current DSM diagnosis but may have the resources to adequately cope so that the diagnosis does not negatively impact their lives. Consequently, the term SED identifies those children whose lives are seriously impacted by their emotional state. This is illustrated by Romano et al. (2001). Romano et al. demonstrated that assessing functioning in conjunction with a DSM-III R (APA, 1987) diagnosis significantly

changed the prevalence of emotional and behavioral disorders in youth. Romano et al. investigated the prevalence of psychiatric diagnoses in a sample of Canadian adolescents ($N = 1,201$). The researchers randomly selected 2,000 children from a community sample of 4,488 children attending kindergarten. Romano and colleagues administered the Diagnostic Interview Schedule for Children (DISC) (Shaffer, Fisher, Piacenti, Schwab-Stone, & Wicks, 1991) to the sample.

Chi-square analysis revealed that there was a relationship between gender and rate of psychiatric symptomology ($X^2 = 36.12, p < .001$). Specifically, when researchers used symptom criteria only, the overall prevalence rate for disorders was 30.2% for females compared to 15.2 % for males. When researchers included an impairment criteria, the relationship between gender and rate of psychiatric symptomology remained; however, the individual prevalence rates for both genders decreased. The prevalence for females was 15.5% compared to 8.5% for males ($X^2 = 12.22, p < .001$). When researchers evaluated the prevalence rates based on type of disorder (externalizing or internalizing), gender specific patterns emerged. When examining symptom criteria only, a higher percentage of females (29.7%) reported internalizing disorders than males (6.4%; $X^2 = 103.50, p < .001$). This difference remained even when researchers included an impairment criteria ($X^2 = 44.94, p < .001$). In contrast, males reported higher rates of externalizing disorders ($X^2 = 11.60, p < .001$). This was true even when researchers included an impairment criteria ($X^2 = 4.29, p < .005$).

Criterion Validity of SED Label

Several studies tested the criterion validity of commonly used definitions of SED. Skiba, Grizzle, and Minke (1994), Tharinger, Laurent, and Best (1986), and Narrow et al. (2000) documented the inconsistency between commonly used definitions of SED and their outcomes for children labeled with SED. Narrow et al. (2000) conducted a secondary analysis of survey data collected by the National Institute of Mental Health ($N = 1,285$) to determine how three widely used criteria for serious emotional disturbance (definitions contained in the 1993 appropriations bill for the Department of Health and Human Services, the IDEA Act, and the Alcohol, Drug Abuse, and Mental Health Administration Reorganization Act of 1992) influenced the prevalence rates of emotional disorders. The researchers applied the three definitions of SEDist to the same sample and discovered that the prevalence rates of SEDist changed based on which definition researchers used. Specifically, the researchers demonstrated that different diagnostic criteria created different prevalence rates in the sample (3% to 23%), with the fewest children meeting the criteria from the definition contained in the 1993 appropriations bill for the Department of Health and Human Services (National Advisory Mental Health Council, 1993).

Tharinger et al. (1986) conducted a study similar to Narrow et al. (2000). However, Tharinger and colleagues used a small availability sample and compared different definitions of SED than Narrow and colleagues. Tharinger and colleagues administered a diagnostic instrument, the Child Behavior Checklist (Achenbach, 1991) to a sample of boys ($N = 38$) attending a program for children with or at-risk for emotional

disorders. The researchers used case records to identify each child's DSM-III diagnosis and to determine if the child satisfied criteria for SEDist based on the IDEA definition. Similar to Narrow et al., Tharinger et al. discovered that only 55% ($n = 21$) of the sample were designated emotionally disturbed by the IDEA definition, the CBCL, and diagnostic criteria within the DSM-III.

These studies demonstrate the inconsistency between definitions from different systems. However, studies conducted by Skiba et al. (1994) and Stinnett, Bull, Koonce, and Aldridge (1999) demonstrate that even definitions within the same system are ambiguous and problematic for professionals to interpret. Skiba et al. conducted a telephone survey of the Departments of Education from 50 states and the District of Columbia ($N = 51$) to determine the criteria that states used to identify children with SEDist and the impact of the criteria on the prevalence rates for the different states. Specifically, the researchers sought to identify whether states had maladjustment exclusion clauses that limited the number of children who were eligible for services. Skiba et al. discovered that 67% ($n = 34$) of states had clauses that excluded "socially maladjusted" children from services yet only seven states had published documents that operationalized social maladjustment. The remaining states with exclusion clauses had staff members who applied the criteria based on their subjective judgments. In addition, Chi-square analysis revealed that there was not a statistically significant relationship between having an exclusion clause and a states prevalence rate for SEDist, ($X^2 = 1.04$, $p = .59$). According to the researchers, the lack of a relationship having an exclusion clause and prevalence rate may be indicative of the lack of operationalization of the exclusion

clauses. Specifically, states have exclusion clauses yet they are not interpreted or implemented consistently within the individual state or between states. Thus, exclusion clauses are not related to prevalence rates.

Stinnett et al. (1999) administered a survey to an availability sample of undergraduate students in teacher education courses ($N = 359$) to determine how the labels “behavior disordered” (BD), “emotional-behavioral disordered” (EBD), or “serious emotional disturbance” (SEDist)” influenced the educators’ beliefs about children. Stinnett and colleagues’ study also included variables such as whether a definition for the three labels (BD, EBD, SEDist) was present, the child’s race and gender, and whether the child was in a special or regular classroom.

The researchers asked the teacher education students to read vignettes about children who were labeled BD, EBD or SEDist. In addition, the vignettes provided information concerning the child’s race and whether the child was in a regular class or a class for children with behavioral or emotional disorders. The researchers asked participants to read the vignettes and then to indicate the child’s level of adjustment, interpersonal relationship skill, and to predict the student’s likelihood of future disruptiveness.

ANOVA analyses indicated that there was a statistically significant main effect for gender in the ratings of the teacher education students, $F(1, 311) = 4.09, p < .05$. Boys were seen with less interpersonal skills than girls. Further, there were significant interaction effects between the child’s label, placement, and race, $F(2,311) = 5.11, p < .01$ as well as between child’s label and whether a definition for the label was present,

$F(2, 311) = 4.74, p < .01$. Specifically, white children labeled SEDist or EBD and placed in special classes were seen as the most disruptive and when a definition for the label was not present, teacher education students rated children labeled SEDist more impaired than either EBD or BD. In summary, Stinnett et al. (1999) demonstrate that within the same system, labels do influence the perception of impairment exhibited by children. However, these are not the only influential variables. Whether labels such as ED or SEDist are defined influences the perception of functional impairment as well.

The studies conducted by Narrow et al. (2000), Skiba et al. (1994), and Tharinger et al. (1986) underscore the need for a systematic method to identify children with SED between systems and within the same system. Each study is important and increases the knowledge concerning the effects of multiple criteria for SED. However, an important limitation is that each study used data that researchers did not originally collect or plan to use in these types of analyses. Thus, each group of researchers had to recode or reinterpret specific parts of the data so that they could use these for analysis. For example, Tharinger et al. examined and interpreted case records to determine how closely the child fit the IDEA criteria. Further, Narrow et al. (2000) compared responses from different measurement instruments to ascertain a child's consistency with specific definitions for SEDist. Thus each study, contained an element of researcher subjectivity. However, despite these limitations, studies conducted by Narrow and colleagues (2000), Skiba and colleagues, and Tharinger and colleagues demonstrate that a substantial minority of children can be classified as SED by at least one of several popular criteria.

Prevalence of SED by Child Characteristics

Additional studies discovered that prevalence rates for SED varied from a low of 6.8% (Costello, Mustillo, Erkanli, Keeler, & Angold, 2003) to a high of 13.4% (Zill & Schoenborn, 1990). Zill & Schoenborn conducted a secondary analysis of data collected by researchers for the National Center for Health Statistics (NCHS, $N = 17,110$). The researchers discovered that 13.4% of the sample had an emotional or behavioral problem that lasted for at least three months and required treatment. *T*-tests and ANOVA analyses indicated that there were statistically significant differences in prevalence rate by age, gender, and race. The prevalence of SED increased for older children. Specifically, prevalence rates were 5.3% for children ages 3 - 5, 12.7% for children ages 6 - 11, and 18.5% for children ages 12 - 17. Males had a higher prevalence of emotional or behavioral disorders than females; 15.4% for males versus 11.3% for females. Researchers indicated that the greatest difference between the gender occurred during elementary school (ages 6 - 11 years) while the smallest difference occurred between the ages of 3 and 5 years of age. Zill and Schoenborn examined prevalence rates by race and discovered that during all stages of development, white, non-Hispanic children had higher prevalence rates than African American children; 14.2% for white children versus 10.3% for African American children. Zill and Schoenborn did not report individual statistics. However, in the technical notes area, they mention that all differences included in the report were statistically significant at the .05 level.

Costello and colleagues (2003) conducted a longitudinal study that examined the prevalence of DSM-IV disorders and SEDist in a representative sample ($N = 1,420$) of

children ages 9 to 16. Descriptive statistics indicated that 6.8% of children met criteria for SEDist. The prevalence rate appeared to increase as children got older, and boys (7.9%) had a greater prevalence than girls (5.6%).

In the research using randomly selected samples, older and male children had higher rates of SED. This trend was also demonstrated in a clinical sample. Chabra, Chavez, and Harris (1999) investigated the prevalence of mental illness among elementary school-aged children (ages 6 to 12) by examining hospital discharge records ($N = 4,460$). Researchers did not specifically use the term SED to describe the sample; however, this study satisfies the literature review parameters because hospitalization implies functional impairment in one or more areas of a child's life.

Chabra et al. (1999) analyzed hospitalization rates from 11 state hospitals and compared them to the state's population to determine relative risk (per 1,000) of hospitalization for mental illness by gender, age, and racial group. An analysis of demographic characteristics of the sample revealed that most hospitalizations were for depressive disorders (52.8%, $n = 2,356$). The oldest group, those ages 11 to 12, had the most hospitalizations (50.4%, $n = 2,250$). In contrast, the youngest group, those ages six to eight years, had the fewest hospitalizations (23.0%, $n = 1,025$). Males had a higher rate of hospitalization than females (1.8 hospitalizations per 1,000 population versus .09 hospitalizations per 1,000 population) and white non-Hispanics had the highest rate of hospitalization (2.23 per 1,000 population) followed by African Americans (2.20 per 1,000 population), Latinos (0.50 per 1,000 population) and Asians (0.27 per 1,000 population).

Chabra et al. (1999) Costello et al. (2003), and Zill and Schoenborn (1990) demonstrated that males and older children in their samples had higher rates of SED than females and younger children. Romano et al. (2001) proved gender differences in rates of disorders, but unlike results demonstrated by Chabra et al. and Zill and Schoenborn, Romano et al. noted that females had a higher prevalence of disorders. Romano and colleagues' sample was predominately Canadian whereas the other researchers used samples from the United States. Perhaps the difference in findings between the Canadian and United States samples represent cultural differences or different cultural assumptions concerning deviant behavior for males and females.

Further, Romano et al. (2001) and Liu and colleagues (2001) determined that girls had a higher prevalence of internalizing disorders whereas Chabra et al. (1999) noted that boys had higher rates of both internalizing and externalizing disorders. These results are contradictory. However, Chabra and colleague's sample overrepresented children with the most severe functional impairment. Perhaps Chabra and colleagues may have noted gender differences in internalizing or externalizing disorders if a greater range of functional impairment levels was included in the sample. Further, the difference in sample demographics may also contribute to these results.

Each researcher used a different measurement instrument/criteria to identify emotional disorders. Chabra et al. (1999) and Romano et al. (2001) used Diagnostic and Statistical Manual criteria to diagnose emotional or behavioral disorders in children. In contrast, Costello et al. (2003) used the Child and Adolescent Psychiatric Assessment interview (Angold et al., 1995) while Zill and Schoenborn (1990) identified the overall

numbers of children with emotional or behavioral symptoms/behaviors. In summary, the results reported by these researchers articulate two important points. First, different systems working with the same or similar children may use different criteria; these criteria may focus primarily on numbers of emotional and/or behavioral symptoms or primarily on functional impairment caused by behavioral symptoms. Finally, these results demonstrate the difficulty in quantifying the number of children who should be accurately labeled as SED.

Prevalence Rates Across Service Systems

Several studies examine the prevalence of SED in different systems. Garland et al. (2001) surveyed a representative sample of children and adolescents receiving five types of services ($N = 1,715$): alcohol and drug treatment ($n = 166$), child welfare ($n = 426$), juvenile justice ($n = 478$), mental health ($n = 876$), and public education SEDist services ($n = 397$) to determine how the prevalence rates of emotional and behavioral disorders change based on service delivery system. Survey results revealed that the majority of respondents (54%) had a diagnosable DSM-IV disorder. The prevalence varied between groups; 70.2% for the public education SEDist services group, 60.8% for the mental health group, 60.3% for the alcohol and drug treatment group, 52.1% for the juvenile justice group, and 41.8% for the child welfare group. Further, logistic regression analysis revealed that children in specific groups had greater probabilities of certain disorders. Youth receiving alcohol and drug treatment services were 4.5 times more likely to have a diagnosis of mania than youth not receiving alcohol and drug treatment services (OR 4.5, $p < .05$) and youth receiving SED services from the public education, juvenile justice,

and mental health systems had greater probabilities of externalizing disorders such as conduct, ADHD, and oppositional defiant disorder (ODD). Specifically, youth receiving SEDist services from the public education system were 2.7 times more likely to have a diagnosis of ADHD (OR = 2.7, $p < .001$), 1.7 times more likely to have a diagnosis of conduct disorder (OR = 1.7, $p < .001$), and 1.5 times more likely to have a diagnosis of OD (OR = 1.5, $p < .05$) than youth not receiving SEDist services from the public education system. Youth receiving services from the mental health system were 1.7 times more likely to have a diagnosis of ADHD (OR = 1.7, $p < .001$), 1.4 times more likely to have a diagnosis of conduct disorder (OR = 1.4, $p < .01$), and 1.5 times more likely to have a diagnosis of OD (OR = 1.5, $p < .01$) than youth not receiving mental health services. Interestingly, youth receiving services from the juvenile justice systems were only .35 times more likely to have a diagnosis of ADHD (OR = .35, $p < .001$), 1.4 times more likely to receive a diagnosis of conduct disorder (OR = 1.4, $p < .01$), and .74 times more likely to receive a diagnosis of OD (OR = .74, $p < .05$) than youth not receiving juvenile justice services.

Shelton (2001) and Teplin, Abram, McClelland, Dulcan, and Mericle (2002) investigated the prevalence of SED in a system; however, unlike Garland and colleagues' (2001) study, Shelton and Teplin and colleague's study focused on the high prevalence of SED in a single system-juvenile justice. Both research groups had predominately male and African American samples. Shelton's study randomly selected youth ages 12 to 20 held within 15 detention centers in a mid-Atlantic state ($N = 312$) while Teplin and colleague's study ($N = 1,829$) examined a stratified sample of youth ages 10 to 18 who

were held in a single detention center. Shelton and Teplin et al. administered versions of the Diagnostic Interview Schedule for Children (DISC, Costello et al., 1984) to their respective samples. In addition, Shelton completed the Child Global Assessment Scale (CGAS; Shaffer et al., 1983) to the youth and recorded personal demographic information.

Shelton (2001) discovered that most youth ($n = 165$, 53.0%) had a diagnosable DSM-IV disorder with anxiety ($n = 155$, 57.6%), disruptive behavior ($n = 107$, 39.8%) and substance abuse ($n = 100$, 37.2%) being the most frequently occurring diagnoses. Based on CGAS scores, the majority of youth (53.7%, $n = 89$) were high functioning; whereas 46.2% ($n = 76$) of the children had functional impairment. Additionally, Chi-square analyses indicated a relationship between functioning level and disorder type ($X^2 = 9.20$, $p = .02$). Specifically, low functioning youth were more likely to be diagnosed with anxiety disorders, disruptive disorders, and substance abuse disorder. Teplin et al.'s (2002) sample was predominately African American ($n = 1005$, 54.9%) and male ($n = 1172$, 64.1%). Similar to Shelton's sample, most participants had a diagnosed DSM-III-R disorder. Additionally, a greater percentage of females (71.2%) than males (63.3%) were labeled SED.

Prevalence of SED for Male and Female Children

Garland and colleagues (2001), similar to Romano et al. (2001), determined that gender had an impact on the prevalence rates for externalizing disorders. Logistic regression analyses revealed that males were 1.3 times more likely to have a diagnosis of

ADHD (OR = 1.3, $p < .05$) and 1.4 times more likely to have a diagnosis of conduct disorder (OR = 1.4, $p < .01$).

Gender differences were also noted in non-American samples. Liu et al. (1999) administered the Child Behavior Checklist to a sample ($N = 2,940$) of parents of Chinese children ages six to 11. Descriptive statistics indicated that the overall prevalence of behavioral problems for the sample was 10.4%. Chi-square analysis indicated that boys in the sample had more behavioral problems than girls ($X^2 = 14.23$, $p < .05$).

Similar gender differences were found by Liu et al. (2001). However, Liu et al. (2001) studied a sample of older Chinese adolescents ages 12 to 16 years ($N = 1,694$). Liu et al. (2001) administered the Child Behavior Checklist (Achenbach, 1991) to a randomly selected sample of Chinese parents and the Teacher Report form (Achenbach) to teachers. Parents reported that 23.1% of children had an emotional or behavioral disorder whereas teachers reported that 19.2% of the sample had an emotional or behavioral disorder. Chi-square analysis revealed a relationship between gender and behavioral symptoms. Parents and teachers reported that boys had more externalizing symptoms than girls ($X^2 = 9.80$, $p < .01$ and $X^2 = 13.64$, $p < .001$, respectively). In addition, parents and teachers reported that boys had more delinquent behaviors ($X^2 = 33.82$, $p < .001$ and $X^2 = 9.87$, $p < .01$ respectively) as well as more aggressive behaviors ($X^2 = 3.90$, $p < .05$ and $X^2 = 8.49$, $p < .01$, respectively) than girls. Finally, parents reported more internalizing problems for girls than boys ($X^2 = 10.65$, $p < .001$).

Studies conducted by Garland and colleagues (2001), Romano et al. (2001), Liu et al. (1999), and Liu et al. (2001) demonstrated that gender patterns exist in children

labeled as SED. However, the gender pattern was different in the juvenile justice samples where females had a higher prevalence of disorders than males. This may indicate that the juvenile justice system is composed of more severely impaired females than the general population or even the population of children with SED.

In summary, the above studies demonstrate that quantifying what is meant by SED is a Herculean task and the inability to have a universal definition influences the prevalence rate and magnitude of SED in children. However, these studies demonstrate that the prevalence of emotional and behavioral disorders in children changes when a functional impairment mandate is added. Thus, a child with a recognizable DSM diagnosis is not automatically labeled as SED. Rather, an indication of functional impairment in the home, school, or community is tantamount to a label of SED.

Risk Factors for SED in Children

Numerous studies examine the concept of risk and how the hypothesized risks affect a child. There are two main ways in which researchers assess risk. The first method is post hoc in which researchers study a large sample of children with SED and then determine which factors are common among the children (e.g., Liao, Mantuffel, Paulic, & Sondheimer, 2001; Quinn & Epstein, 1998; Zill & Schoenborn, 1990). This type of study frequently uses secondary data that was originally collected as part of a needs assessment or program evaluation. The second method uses a priori knowledge to identify specific “risks” and then examine a sample of children with SED to determine if the sample has the “risk” present (e.g., Bergeron et al., 2000; Illback, Nelson, & Sanders, 1998;

Manassis & Hood, 1998; Tiet et al., 2001). Both types of studies provide valuable information about risk factors and their impact on children with SED.

This section combines information from post hoc and a priori studies to develop a pattern of common risk factors for SED in children. Specifically, three groups of risk factors exist that increase the probability that a child will receive a label of SED. These factors are environmental stressors that create mental and physical burdens for children, family characteristics including family structure, and individual characteristics of the child such as gender or biological predisposition. Each category of risk factors is reviewed.

Environmental Stressors

Researchers observe that children with SED are diverse yet share similar family environments and life stressors. Families experiencing large amounts of stress within the family environment increase the probability that their child will be labeled with SED. Stresses within the family environment may include exposure to conditions such as mental illness, drug abuse, violence, or criminal activity. Additionally, poverty or low economic status may be an environmental stressor; thus, increasing the probability of label of SED.

Studies that examine the characteristics and service utilization of U.S. children with SED demonstrate that a large percentage of children with SED live in poverty (Crowley, Mikulich, Ehlers, Whitmore, & MacDonald, 2001; Illback, Nelson, & Sanders, 1998; Liao et al. 2001; Stern, Smith, & Jang, 1999; Wagner, 1995). Further, some studies

show a connection between socioeconomic level and type and severity of disorder (Reinherz, Giaconia, Lefkowitz, Pakiz, & Frost, 1993; Tiet et al., 2001).

Children with SED experience more economic and social disadvantage than children from the general population. Crowley et al. (2001) compared children with emotional and behavioral disorders ($n = 87$) to children without these disorders ($n = 85$) and determined that there were statistically significant differences between the groups on family social status ($t = -5.66, p < .0005$). Children with emotional and behavioral disorders were from a lower social class than children without disorders.

Wagner (1995) reported similar results. Wagner conducted a secondary analysis of data from a national study that investigated the characteristics and outcomes for youth labeled with SED ($N = 8,000$). Wagner discovered that children with SED were more economically disadvantaged than the general student population as well as other disabled students. Wagner reports that 38.2% of children with SED and 34.8% of children with other disabilities lived in poverty (less than \$12,000 annual income). In contrast, only 18.2% of students from the general population lived in poverty.

Lavigne et al. (1996) conducted a longitudinal study that examined the prevalence and correlates of psychiatric disorders in preschool children ($N = 3,860$). Researchers recruited participants from pediatric clinics and administered the Child Behavior Checklist (Achenbach, 1991) to mothers. Researchers divided the sample into those with behavioral or emotional disorders and those without disorders. Logistic regression analysis revealed that having an absent father ($OR = 1.30, p < .05$) increased the likelihood of having behavioral problems. In addition, having a low socioeconomic status

(OR = 1.36, $p < .05$) or having an absent father (OR = 1.54, $p < .05$) increased the likelihood of a diagnosis of a combination of internalizing and externalizing disorders.

Other studies may not compare rates of poverty to the general population; however, descriptive statistics (e.g., calculating mean income) indicate that a large percentage of children with SED live in poverty. Liao et al. (2001) conducted a secondary data analysis of data from a national program evaluation. The sample was not random; however, it was large ($N = 3,281$). Respondents ranged from 5 to 17.5 years of age and included 58.7% white non-Hispanic, 19.2% African American, 13.4% Hispanic, and 8.7% from other racial groups. The sample was geographically diverse with respondents residing in rural and urban locations within 16 states.

Liao et al. (2001) discovered that the majority of the sample lived in poverty and had family structures that were associated with a greater probability of poverty. Fifty-six percent had annual family incomes below \$15,000. Chi-square analysis revealed that this was true regardless of the child's gender ($X^2 = .26, p > .05$). In addition, there was a relationship between poverty and family structure ($X^2 = 144.07, p < .001$). Of the children living in poverty (operationalized as \$15,000 per year or less), 75.6% lived with mothers, 19.5% lived with both parents, and 4.9% lived with fathers.

Illback et al. (1998) conducted a program evaluation of mental health services for children ($N = 1,971$). The researchers discovered that a large percentage of their sample lived in poverty. Specifically, 71.6% of those ages 5 to 8 lived in poverty and 63.3% of those 9 to 12 lived in poverty.

Stern et al. (1999) conducted a secondary analysis of data from the Rochester Youth Development Study ($N = 800$). Researchers used stratified random sampling to develop the sample and then administered researcher created instruments that measured family adversity and parent and child mental health. The final sample was predominately African American (68%), with 17% Hispanic and 15% white non-Hispanic. The majority of the sample were male (73%) and a significant portion (45%) lived below the federal poverty line. Structural equation modeling indicated that variables associated with family adversity such as poverty, life stress, and isolation were associated with parent distress causing disruptions in parental discipline and more mental health disturbances among children.

These studies demonstrate the pervasiveness of poverty or lower economic status in samples of children with SED. Reinherz et al. (1993) and Tiet et al. (2001) demonstrate that poverty or a negative change in financial circumstances may increase the probability of specific disorders. Reinherz et al. evaluated the prevalence of psychiatric disorders in high school students ($N = 386$). The researchers administered the NIMH Diagnostic Interview Schedule, Version III-Revised (Robins, Gelzer, Cottler, & Goldring, 1989), Youth Self Report (Achenbach, 1991), Rosenberg Self-Esteem Scale (Rosenberg, 1986), and the interpersonal problems scale to a representative sample of youth already participating in a 14-year longitudinal panel study. Study results indicated a high degree of psychiatric, emotional, and behavioral difficulties in the sample; 49.1% ($n = 190$) met the lifetime criteria for at least one disorder. Chi-square analyses indicated that there was a relationship between socioeconomic status and certain disorders (major

depression, phobias, and drug/alcohol abuse). Specifically, children with lower economic status were more likely to have major depression ($X^2 = 4.3, p < .04$), phobias ($X^2 = 6.9, p < .01$), and drug/alcohol abuse ($X^2 = 9.3, p < .01$).

Tiet et al. (2001) conducted a secondary analysis of data obtained from the National Institutes of Mental Health to examine the relationship between 25 adverse life events (e.g., death in the family, serious illness, witnessing crime, or parent absence) and childhood disorders. The probability sample ($N = 1,285$) contained children ages 9 to 17 who resided in four locations throughout the United States. Logistic regression analysis indicated that at the .05 level of significance, having a mother or father figure lose a job increased the probability of a diagnosis of conduct disorder (OR = 2.2), depression (OR = 3.4), and dysthymic disorder (OR = 3.2). Further, a negative change in a parent's financial situation increased the probability of a diagnosis of conduct disorder (OR = 2.4), oppositional defiant disorder (OR = 2.1), and major depression (OR = 2.9).

In summary, environmental stressors such as poverty and lower social status increase the probability that a child will receive a label of SED. Research documents that at least 38.2% of children with SED are from a lower economic status.

Family Characteristics and Risk For SED

Poverty is not the only environmental stressor that increases the likelihood of a label of SED. Quinn and Epstein (1998) conducted a secondary analysis of case records from a mental health facility serving children with SED to determine sample characteristics, service usage, and anticipated future needs of children with SED ($N = 238$). The final sample was predominately male (74.8%), white non-Hispanic (77.3%),

and suburban (100%) with a mean age of 15.3 years ($SD = 2.9$). Quinn and Epstein discovered that the children in the sample had similar family characteristics. Most children lived in nontraditional families; the majority lived in single-parent (mother) households (23.8%). Further, 36.3% of the sample had a family history of mental illness, 61.5% had a family history of alcohol or drug abuse, 26.1% had family members involved with the criminal justice system, and 58.9% had a history of family violence.

Similar sample characteristics were discovered by Walrath, Mandell, and Leaf (2001) and by Greenbaum et al. (1998). Walrath et al. examined referral systems and functioning in children with SED ($N = 203$). Descriptive statistics indicated that children in the sample had family stressors such as family histories of violence (74%), mental illness (43%), and substance abuse (43%). Walrath et al. determined that multiple risk factors were common; children in the sample had an average of 2.7 risk factors ($SD = 2.0$). Similarly, Greenbaum et al. (1998) used data from a national evaluation of children with SED ($N = 812$) to understand outcomes for children with SED. Descriptive statistics indicated that almost a third (29.3%) of children in the sample had a parent with a substance abuse problem. And almost one-fifth (18%) of children in the sample had a parent involved in the criminal justice system.

Studies indicate that specific family environments may influence the type of disorder that develops. Certain family stressors may increase the probability of a diagnosis of internalizing disorders while others may increase the probability of externalizing disorders. One such study, Bergeron et al. (2000), investigated family and child risk factors related to a diagnosis of internalizing (e.g., depression and anxiety) and

externalizing (oppositional defiant) disorders for children ages 6 to 8 years, 9 to 11 years, and 12 to 14 years. The researchers used the Quebec Family Allowance Recipient list as the sampling frame. Bergeron et al. used random sampling to select participants from densely populated areas and stratified multistage probability sampling to select participants from less populated areas. The final sample ($N = 2400$) was composed of Quebec children ages 6 to 14 years. The sample contained an almost even number of males (51.6%) and females (48.4%). However, unlike other studies (e.g., Liao et al., 2001), the sample had fewer families in poverty and fewer children in single-family homes. Specifically, only (23.9%) of the sample lived in poverty and only 14.6% of all children in the sample resided in a single-family home.

Bergeron et al. (2000) administered a series of questionnaires to the children and their parents. Logistic regression analyses indicated that for children ages 6 to 8 years of age, only children ($OR = 3.09$, $CI = 1.35, 7.07$) and those with parents with two or more stressful life events ($OR = 2.02$, $CI = 1.23, 5.40$) were more likely to report internalizing disorders. Males ($OR = 2.39$, $CI = 1.22, 4.69$) and children with parents with low levels of social support ($OR = 1.34$, $CI = 1.03, 1.76$) were more likely to report externalizing disorders. Additionally, children with parents with a high school education or less ($OR = 3.52$, $CI = 1.52, 8.07$), the presence of a parent with a phobia ($OR = 3.19$, $CI = 1.50, 6.79$), or a home with five persons or more persons ($OR = 2.21$, $CI = 1.13, 4.34$) are more likely to have parents report externalizing disorders.

Additionally, logistic regression analysis indicated that for children ages 9 to 11 years, presence of a parent with generalized anxiety ($OR = 2.34$, $CI = 1.42, 3.85$), single

parent family (OR = 2.02, CI = 1.02, 3.98), and presence of a parent with depressive disorder (OR = 1.83, CI = 1.02, 3.98) were more likely to report externalizing disorders.

Illback, Nelson, and Sanders (1998) conducted a study similar to those conducted by Liao et al. (2001) and Quinn and Epstein (1998). All three groups of researchers used secondary analyses of client files to evaluate statewide systems-of-care for children with SED. However, Illback and colleagues' analysis involved investigating the presence of predetermined risk factors in a convenience sample drawn from a mid-sized eastern state ($N = 1,971$). Further, the researchers used ANOVA analyses to document client progress during multiple intervention points.

Illback et al. (1998) established a list of factors (specific behaviors) that they believed increased a client's risk of being labeled as SED. This list included individual child characteristics such as (e.g., gender, age) as well as family and environmental characteristics (e.g., poverty, family history of substance abuse). The researchers examined the sample and recorded which participants had the suspected risk factor. Further, the researchers conducted a factor analysis of suspected risks to determine patterns of risks.

Illback et al. (1998) noted that the sample was overwhelmingly male (71.9%) and most had experienced family violence (69.1% of those ages 5 to 8 and 59.6% of those ages 9 to 12). In addition, most had at least one family member with a chemical dependency (52.9% of those ages 5 to 8 and 52.9% of those ages 9 to 12). Factor analysis indicated that there was a pattern related to the individual risk factors. Specifically, eight factors (conduct problems, family abuse/violence, self injurious

behavior, dangerousness, family distress, family disintegration, family mental illness, and sexual abuse) accounted for 46.2% of the variation in risk factor scores between participants. Of the factors, conduct problems (e.g., chronic truancy, negative peer influence, drug/alcohol abuse) accounted for 10.3% (eigenvalue 2.88) of the variance in risk between participants and family abuse (e.g., family violence, physical abuse, family chemical dependency, parent convicted of felony) accounted for 17.9% (eigenvalue 2.12) of the variance in risk between participants.

Manassis and Hood (1998) surveyed a convenience sample of families with children with anxiety disorders attending a mental health clinic ($N = 74$) to determine whether there was a relationship between risk factors and the level of functioning for children with anxiety disorders. The sample was predominately female (54%) and white non-Hispanic (85%) with a mean age of 9.8 years ($SD = 2.31$). The researchers administered the Conners Parent Rating Scale (Conners, 1989), Symptom Checklist-90-R) (Derogatis, 1983), and the Family and Household Form (Boyle et al., 1987) to parents. The researchers obtained copies of the children's responses to the Children's Manifest Anxiety Scale (Reynolds and Richmond, 1978), Children's Depression Inventory (Kovacs & Beck, 1977) and each child's Global Assessment of Functioning Scale (GAF, APA, 1994) score.

Two-way analysis of variance indicated no main or interaction effects for gender or diagnosis and GAF score. Additionally, a regression analysis failed to detect a statistically significant relationship between age and GAF score ($r = .076$, $p = .60$) or socioeconomic status and GAF score ($r = -.172$, $p = .14$). Specifically, there were not

differences on GAF score by gender, diagnosis or a combination of gender and diagnosis. In addition, the child's age or socioeconomic status did not influence the child's level of functioning.

However, regression analyses revealed that there were statistically significant relationships between several variables and a child's level of functioning. Specifically, conduct problems ($r = -.37, p < .01$), depression ($r = -.29, p < .05$), maternal phobias ($r = -.23, p < .05$), developmental difficulties ($r = -.27, p < .05$), and psychosocial adversity ($r = -.25, p < .05$), were predictors of a child's level of functioning. The greater the conduct problems, depression, maternal phobias, developmental difficulties, or psychosocial adversity, the lower the child's level of functioning. When the above set of predictors was entered together in a multiple regression model, these account for 25% of the variance in GAS score ($R^2 = .25$), with conduct problems having the largest impact ($r^2 = .14, t = -3.37, p < .001$).

Tiet et al. (2001) conducted a secondary analysis of data obtained from the NIMH to examine the relationship between 25 adverse life events (e.g., death in the family, serious illness, witnessing crime, or parent absence) and childhood disorders. The probability sample ($N = 1,285$) included children ages 9 to 17 residing in four locations throughout the United States. Logistic regression analysis indicated a relationship between life events and specific childhood psychiatric disorders. Being a victim of a crime or violence was strongly related to being diagnosed with conduct disorder (OR = 12.2), oppositional defiant disorder (OR = 8.3), and major depression (OR = 3.2). However, children did not have to be directly involved in a crime to have an increased

probability of a psychiatric diagnosis. Merely witnessing a crime was strongly related to a diagnosis of conduct disorder (OR = 4.0), oppositional defiant disorder (OR = 3.1), and major depression (OR = 3.2). Further, having an incarcerated parent increased the probability of a diagnosis of conduct disorder (OR = 13.9), oppositional defiant disorder (OR = 4.5), and major depression (OR = 8.3).

Individual Risk Factors

There is evidence that suggests that individual biological characteristics may increase a child's likelihood of receiving a label of SED. Several factors such as being a member of a racial minority group or being male increase a child's risk. Lavigne et al. (1996) conducted a longitudinal study that examined the prevalence and correlates of disorders in preschool children ($N = 3,860$). Logistic regression analysis revealed that being male (OR = 1.36, $p < .05$) or a member of a racial minority group (OR = 1.41) increased a child's probability of receiving a label of SED.

In summary, researchers using multiple samples of children with SED have demonstrated that there are similar characteristics between samples. These similarities include increased numbers of environmental and family stressors. However, to assume that poverty and additional stressors cause SED is reductionistic. Rather, there may be additional circumstances that accompany poverty and increase a child's risk of SED. Additional research investigating poverty and potential confounding variables is needed.

Characteristics of Children with SED

A label of SED increases a child's risk of behavioral, academic, or social difficulties. These difficulties can limit a child's ability to participate or function in

family, school, social, or community roles. A child may have difficulty engaging in age appropriate behaviors at home or school and may require modifications to the family, school, or community environments. Thus, a label of SED severely impacts a child's ability to function across multiple domains.

This section reviews the research that exists concerning the characteristics of children with SED. Functional impairment is a key criteria in labeling children with SED; therefore, this section's primary focus is to describe functional impairment in children. This section is divided into five sections, social, moral, academic, physical, and family and community functioning. However, there is overlap between the sections.

Social role functioning

Social roles are the different positions that persons occupy during their daily lives (Biddle & Thomas, 1966). For example, a woman may have roles such as business person, wife, aunt, or professor. These roles may be congruent with or contradict other roles. The ability to reconcile the different roles and demonstrate appropriate role functions within the context of societal norms is important to a person's identity and mental health. However, a label of SED increases the probability that a child will have difficulty occupying or adjusting to social roles.

Researchers have examined how youth with SED or psychiatric disorders occupy social roles and interact with peers, family members, and teachers. Two studies, Buysse, Goldman, & Skinner (2002) and Riley, Ensminger, Green, and Kang (1998) demonstrate that children with special needs have difficulties maintaining social relationships with peers. Buysse et al. examined how a sample of preschool children ($N = 333$) with and

without emotional, physical, and mental disabilities initiated and maintained friendships. Researchers administered five researcher-created instruments to children with emotional, physical, and/or mental disabilities ($n = 120$) and to children without emotional, physical, and/or mental disabilities ($n = 213$) that participated in special education or regular settings. ANOVA analyses indicated that a child's disability influenced the child's ability to make and maintain friendships. Children with disabilities had lower social development scores $F(1, 282) = 120.81, p < .0001$ and fewer friends $F(1, 282) = 10.17, p = .0016$ than children without disabilities. Further, children with disabilities were more likely to report "no friends" than children without disabilities ($X^2 = 9.28, p = .0023$).

Riley et al. (1998) also discovered that children with emotional or behavioral disorders had difficulty with social functioning. In addition, their study investigated the impact of gender on the degree of social impairment experienced by children with emotional and behavioral disorders experienced. Riley and colleagues compared the social functioning of boys and girls with and without emotional and/or behavioral disorders. The researchers administered four scales to a representative sample of adolescents from an urban public school and their parents ($N = 288$). The researchers divided the sample into those with ($n = 135$) and those without ($n = 153$) emotional or behavioral disorders and by gender. Tukey Honestly Significant Difference tests indicated that children with emotional and behavioral disorders had more difficulty in social roles than youth without disorders. Youth with emotional or behavioral disorders were less likely to participate in extracurricular activities and interact positively with peers. Boys with emotional or behavioral disorders had more academic difficulties and

poorer relationships with others than boys without emotional or behavioral disorders. In contrast, girls with emotional or behavioral disorders were less effective communicators and reported more interpersonal contact with others than girls without disorders.

Girls were more likely to have a disorder ($X^2 = 4.4$; $p < .01$) however, boys were more likely to experience decreased functioning due to their emotional and behavioral disorders. Specifically, boys with emotional and behavioral disorders had significantly more impairment than girls with emotional and behavioral disorders.

Gender differences in social functioning were also discovered by Liao et al. (2001). The researchers used the Student's t -test to compare the Child and Adolescent Functional Scale (CAFAS; Hodges, 1994) and Child Behavior Checklist scores (CBCL; Achenbach, 1991) of boys and girls. Caregivers reported that girls had more externalizing ($t = -3.609$, $p < .001$) and internalizing ($t = -4.237$, $p < .001$) behaviors than boys; however, boys were significantly more impaired ($t = 2.607$, $p = .009$). Specifically, the average total CAFAS score for boys was 65.0 ($SD = 27.3$) compared to that of girls ($M = 62.5$, $SD = 27$) for girls. These results are consistent with results reported by Riley et al. (1998).

In addition, Liao et al. (2001) found that boys and girls had difficulties in different areas. Chi-square analyses revealed that boys had more difficulties at school ($X^2 = 74.978$, $p < .001$) and in the community ($X^2 = 107.564$, $p < .001$) than girls. In contrast, girls had more difficulties managing their moods and emotions ($X^2 = 34.619$, $p < .001$) and had more thoughts of self-harm ($X^2 = 68.107$, $p < .001$) than boys.

Buysse et al. (2002) and Riley et al. (1998) both compared children with and without emotional disabilities. Each research group used students from the same school to ensure that the group with emotional disabilities was similar to the group without. A consistent finding is that gender has an impact on functioning, even in children with similar disorders. Girls may report more symptoms, but these symptoms impact and impair boys more than girls. These results may indicate actual biological differences between males and females. However, they may also indicate differences regarding the way in which boys and girls are identified or socialized.

Moral reasoning/ moral functioning

Moral reasoning is the ability to analyze a situation and determine right from wrong. Few research studies have investigated the moral functioning of children with SED. However, a study conducted by Blair, Monson, and Frederickson (2001) examined the relationship between moral reasoning and the intensity of behavioral disorders in males attending a school for children with behavioral and emotional disorders ($N = 102$). The researchers hypothesized that the degree of behavioral impairment was inversely related to a participant's moral reasoning level. Specifically, children with less severe behavioral functioning deficits should demonstrate a greater ability to determine right from wrong than children with more severe behavioral functioning deficits.

The researchers administered the Psychopathy Screening Device (Frick & Hare, 2000) to the children's teachers. To ascertain moral reasoning, the researchers read stories to the children and then asked the children questions regarding the appropriateness of story characters' actions. Researchers divided the participants into three groups- highly

behaviorally-disordered, moderately behaviorally-disordered, and mildly behaviorally-disordered. The researchers analyzed only the highly and moderately disordered groups.

One way ANOVA indicated that the two groups did not differ on age or verbal ability. However, the two groups differed on moral reasoning. Specifically, the more behaviorally-disordered group thought less about others' welfare $F(1,37) = 2.19, p < .05$ and broke rules when told that an authority figure did not support the rule $F(1,37) = 8.16, p < .05$. Regression analysis indicated that there was a mild inverse relationship between level of behavioral disorder and concern for the welfare of others ($r = -.164, p < .05$) indicating that the more behaviorally disordered the child, the less likely the child was to think about the welfare of others when contemplating moral situations. In addition, there was a relationship between the level of impulsivity (and conduct problems) and concern for the welfare of others ($r = .281, p < .01$). The more impulsive and conduct-disordered the child, the less likely the child was to think about the welfare of others when contemplating moral situations.

Mental/academic functioning

Having a label of SED does not influence a child's intelligence quotient or ability to learn information (Quinn & Epstein, 1998). However, studies such as those conducted by Greenbaum et al. (1998), Carte, Nigg, and Hinshaw (1996), Klorman et al. (1999), and Barkley, Edwards, Laneri, Fletcher, and Metevia (2001) demonstrate that children characterized as SED experience greater academic or cognitive difficulties than children without SED.

Barkley et al. (2001) and Klorman et al. (1999) evaluated the executive functioning of children with SED. Executive functioning defines specific mental tasks that are necessary to function in society. Tasks such as engaging in memory, attentiveness, and problem solving are defined as executive functioning tasks. Barkley et al. compared the executive functioning (e.g., memory, attentiveness, reproduction of tasks) of youth ages 12 to 19 years with ($n = 101$) and without ADHD and ODD ($n = 39$). The researchers administered the Child Behavior Checklist (Achenbach, 1991) and a checklist of ADHD and ODD symptoms comprised of DSM-IV (APA, 1994) criteria to parents. The researchers administered the Kaufman Brief Intelligence Test (Kaufman & Kaufman, 1993) to the children. In order to assess the children's executive functioning ability the researchers observed the children as they played games distributed by the researchers.

ANOVA analyses indicated that the ADHD/ODD group was significantly different from the comparison group on attentiveness ($F(1,130) = 10.32, p < .002$), reproduction of tasks ($F(1,136) = 3.90, p < .05$), and behavior during the test ($F(1, 130) = 14.41, p < .001$). The comparison group was more attentive, able to reproduce tasks more efficiently, and exhibited better behavior during the study than the ADHD/ODD group. However, when memory was examined, there were no statistically significant differences between groups ($F(1,320) = 0.03, p = .87$).

Klorman et al. (1999) studied the executive functioning of children ages 7 to 13 years old with ADHD combined-type, ADHD inattentive type, or without ADHD ($N =$

387). The researchers recruited 359 children with ADHD and 28 children without ADHD from schools and community groups. Klorman and colleagues divided the children into three groups, children without ADHD, children with ADHD inattentive type, and children with ADHD combined type and then subdivided the three groups by the presence or absence of oppositional defiant disorder and the presence or absence of a reading disorder. Klorman and colleagues administered the Multi-Grade Inventory for Teachers (Agronin, Holahan, Shaywitz, & Shaywitz, 1992) to the children's teachers and two experiential tests to the children- the Tower of Hanoi (Simon, 1975) and the Wisconsin Card Sorting Game (Grant & Berg, 1948).

Results indicated that children with ADHD inattentive type fared better than children with ADHD combined type on problem solving. There were not statistically significant differences between the children without ADHD and the children with ADHD with inattentive-type on number of total solutions and rule violations. However, there were statistically significant differences between those with ADHD inattentive type and ADHD combined type ($F(2, 374) = 4.15, p < .02$). Specifically, those with ADHD inattentive type discovered more solutions and had fewer rule violations than the children with ADHD combined type.

A study by Carte et al. (1996) provided information concerning the language processing skills of children ages 6 to 12 with and without SED. Carte and colleagues compared the language processing ability of children with ADHD ($n = 51$) to the language processing ability of children without ADHD ($n = 31$). The majority of the sample was white, non-Hispanic (60%) with 15% African American, 12% Latino, 10%

Asian American, and 4% Native American. The researchers administered a series of tests and games to the children.

MANCOVA results indicated statistically significant differences between the ADHD and non-ADHD group $F(8,64) = 3.85, p < .001$. Specifically, when compared to children without ADHD, children with ADHD seemed to have more difficulty with self-paced tasks that were given with fast instructions and self-paced tasks given with slow instructions.

Greenbaum et al. (1998) conducted a secondary analysis of data from the National Adolescent and Child Treatment Study to understand outcomes for children with SED ($N = 812$). Children in the sample were predominately white, non-Hispanic (70%) and male (75%) with an average age of 13.89 ($SD = 2.35$). Greenbaum and colleagues. (1998) discovered that at intake, a significant minority (46.7%) of the children were at least two years below their grade level for reading and most (84.4%) were at least two years below their grade level for math. Only 41.2% of the children were at or above their grade level for reading and 6.4% were at or above their grade level for math. Interestingly, the mean intelligence quotient was 85.78 with a range of 25 and 142. This indicates that children in the sample had an I.Q. at the low end of the normal range yet had disproportionately poor academic performance.

The poor functioning of children with SED may be due to ineffective or inappropriate classroom settings for those children. The Substance Abuse and Mental Health Services Administration (SAMHSA; 1999) conducted a longitudinal study of children's mental health services in the United States. A subsample of data ($n = 8,717$)

indicate that the majority of students with SED (59.8%) were educated in regular classrooms while only a minority (20.2%) were in classes for special students. These are students whose functional limitations necessitated mental health services but who were not placed in special classrooms to accommodate their disabilities. In addition, only 29.4% of the students had individualized educational plans for emotional disturbance. Of the students without individualized educational plans for emotional disturbance, 14.4% were not of school age or not attending schools and 4.8% had an individualized education (IEP) plan pending. Further, 17.8% had individual educational plans for other disabilities. However, a full 31.2% did not have an IEP.

The lack of an IEP may indicate that school systems are not identifying students with SED. Thus, students have a functional impairment that requires treatment yet school officials do not identify the child as requiring special education accommodations. The lack of an IEP also signifies the discrepancy between widely-used definitions of SED as identified by researchers such as Anderson (2000), Skiba et al. (1994), and Tharinger et al. (1986).

Biological and physical functioning

There are few studies that examine the link between physical and biological functioning and SED status. One study, Combs-Orme, Heflinger, & Simpkins (2002) evaluated the biological functioning of children with SED and determined that SED status may influence physical/biological functioning. Combs-Orme et al. examined the relationship between SED status and chronic physical health conditions in lower SES children ages 4 to 17 years ($N = 965$). The researchers used a list of participants from a

national SAMHSA study as the sampling frame. The final sample was predominately male (65.4%) with equal numbers of African Americans and white, non-Hispanics.

Researchers administered the Child Behavior Checklist (Achenbach, 1991), Columbia Impairment Scale (Bird, Shaffer et al., 1993) and the Child Health Questionnaire (Starfield, 1974) to parents during face-to-face interviews. Multiple regression analyses indicated that SED status influenced the child's overall health status, physical functioning, and the parents' perceptions of child health. This was true even when the researchers controlled for the number of chronic conditions. For every one point increase in a child's SED symptomology and functional impairment, a child's global health status decreased by 12 points ($\beta = -12.458, t = -7.160, p < .001$), physical functioning decreased by almost six points ($\beta = -5.863, t = -3.809, p < .001$), and parents general health perceptions decreased by 10 points ($\beta = -10.454, t = -7.601, p < .001$).

A limitation of this study is that all participants were from lower socioeconomic status (SES) levels. It is difficult to say how much of an influence the lower SES status of participants had on negative physical functioning. For instance, perhaps there are circumstances related to poverty, not SED symptomology that decrease the physical functioning of children. More research is needed examining the relationship between poverty, SED status, and physical functioning.

Family and Community functioning

Rosenweig, Brennan, & Ogilvie (2002) investigated how families with children labeled with SED modified their lives to accommodate and meet the needs of their children ($N = 41$). The researchers facilitated 5 focus groups where primary caregivers of

children labeled as SED responded to a demographic questionnaire and a series of general open-ended questions regarding family accommodation and functioning. In order to check for internal consistency between responses and strengthen the fidelity of the study, two researchers developed study conclusions independent of the third researcher.

The focus group study participants had a total of 106 children, an average of 2.7 ($SD = 1.10$) children per family. The majority of the children (56.6% $n = 60$) had significant emotional and or behavioral difficulties. Further, the majority (73.3%) of the children diagnosed with emotional or behavioral disorders were male. A content analysis identified three major concepts regarding family accommodation and functioning, work-childcare, and negotiating the balance between work and family. Parents remarked that having a child with SED often meant adjusting employment duties, situations, or time, dealing with stress and its impact on job performance, and utilizing coworkers as support systems. Caregivers also commented that identifying childcare practitioners who were qualified to handle children with special needs was problematic; often, parents relied on family members who did not have specialized training. Finally, caregivers commented on their difficulties in devising and maintaining schedules as well as their difficulties managing the almost daily challenges presented by a child with SED. Coping strategies identified by some caregivers included developing rigid household rules while others used outside support services such as day and summer camps to provide short breaks from their children.

Another way to examine functioning within the community and family is to use statistical techniques to identify homogeneous subsets of children with SED based on risk

factors and current functioning. Several researchers (Fields & Ogles, 2000; Liao et al., 2001) used this method to understand the complex patterns of functioning that children with SED engaged in within their families and community.

Fields and Ogles (2000) surveyed an availability sample of children receiving services in a rural mental health center ($N=158$). The researchers administered a demographic questionnaire as well as the Child and Adolescent Functional Assessment Scale (CAFAS; Hodges, 1994), Child Behavior Checklist (CBCL; Achenbach, 1991) and the Youth Self-Report Form (YSR; Achenbach) to the sample. In addition, researchers compiled information concerning presenting problems and risk factors from client case records.

The researchers used cluster analysis to group children with similar functioning patterns. The first cluster included children with high levels of school and home functioning who were younger and had experienced physical abuse. The second cluster included children who had poor mood, difficulty functioning at home, and difficulty displaying appropriate behaviors toward others. In addition, the second cluster had risk factors such as drug and alcohol abuse, runaway and suicide attempts, and at least one mental health hospitalization. The second cluster contained older and female children. The third cluster included children who repeatedly violated social norms. This group had high levels of externalizing problems such as substance abuse, poor school and community functioning, and inappropriate behavior toward self and others. Youth in the third cluster were older, had a history of involvement with the juvenile justice system, and were overwhelmingly male (93%). Clusters four and five included children younger

than clusters one through three. Cluster four included children with few problems and risk factors. They had good school and home functioning and knew how to manage their own behaviors. Cluster five included children who had experienced sexual or physical abuse. This cluster contained children who were most likely to have sexually abused another child.

Liao et al. (2001) conducted a secondary analysis of records for children labeled as SED ($N = 3,281$). The secondary analysis used scores from the Child and Adolescent Functional Assessment Scales (CAFAS, Hodges, 1994) to develop profiles of home, school, and community functioning for children with SED.

Six gender-based clusters were developed using the secondary analysis data. The first three clusters contained all males. The first cluster was the minimal symptom cluster. This cluster contained boys who had behavioral problems that occurred at school. The next cluster contained boys with moderate symptomology. Boys in this cluster had more problems with aggression in the home and community as well as more difficulty with mood and behavior towards others than the first cluster of boys. The last cluster of males contained the most severely impaired males with high levels of impairment in the school and home. In addition, those in the third cluster had significant difficulties with mood, and behavior toward others.

The three clusters of girls contained a minimal impairment cluster along with two significant impairment clusters. Girls in the first cluster had minimal symptoms. When symptoms were present, they were present in the school or home or with moods. The next cluster contained girls with the most severe behavioral problems who were severely

functionally impaired in the community, school, and home. In addition, girls in this cluster demonstrated the most aggressive behaviors. The final cluster was similar to the preceding one; however, this cluster contained girls with high levels of internalizing and externalizing behaviors.

Cluster analyses conducted by Fields and Ogles (2000) and Liao et al. (2001) reveal some similarities. Both groups identified a minimal symptom cluster, a predominately behavioral cluster, a predominately internal, moods-oriented cluster, and a mixed internalizing/externalizing cluster. This indicates that there may be similar patterns of functioning that exist for children with SED. In addition, these patterns may develop differently and respond differently to treatment. More research is needed describing these clusters and identifying whether different interventions have differential influences on outcomes for children with SED.

Finally, it is important to determine how children with SED feel about themselves and the way in which their behavior affects their family and community. Phares and Compas (1990) and Mowbray, Megivern, and Strauss (2002) explored the feelings and perceptions of persons living with SED. Phares and Compas surveyed youth ages 11 to 15 years to determine how they felt about their emotional and behavioral disorders ($N = 151$). The sample was predominately white, non-Hispanic (95%) and contained 85 males and 66 females. All participants attended an urban school. Phares and Compras administered the Youth Self Report (Achenbach, 1991), Child Behavior Checklist (Achenbach), Self Perception Profile for Children (Harter, 1985) and the revision of the Perceived Competence Scale for Children (Harter, 1982) to the sample and their families.

Results indicate that the children's self reported behaviors were related to the child's subjective distress ($r = .40, p < .001$), perceived maternal distress ($r = .38, p < .001$), and paternal stress ($r = .27, p < .001$). Specifically, the more negative behaviors children reported, the more distress children experienced. This was also true for perceived maternal and paternal distress. Further, participants reported that externalizing behaviors were more stressful to parents while internalizing behaviors were more stressful to the child.

Mowbray et al. (2002) used qualitative methods to explore the past feelings and perceived functioning of young adults labeled as SED as children. The researchers collected data in two ways using focus groups and face-to-face individual interviews. They solicited college students via email to participate in a focus group ($n = 8$). In addition, the researchers surveyed new college students and asked those who indicated a history of emotional or behavioral difficulties to participate in face-to-face interviews lasting approximately one to two hours. Of the 297 students surveyed, 34 were eligible and agreed to participate. The sample ($n = 34$) was predominately female (61.8%) white, non-Hispanic (70.6%) with an average age of 19.3 years ($SD = 1.13$). The most popular diagnoses were major depression (64.7%) and bipolar disorder (20.6%) with participants diagnosed at an average of 12.3 ($SD = 3.8$) years of age.

Six major themes emerged in the qualitative data analysis: the mentally ill are not us, friends can sometimes be helpful, if mental illness doesn't exist, why do you need help for it, parental relationships, good help is hard to seek and find, and advice to students experiencing mental illness.

Participants felt that terms used to define their illness alienated them and made them seem “crazy.” Participants felt that friends who could empathize or who had experienced mental illness themselves could be helpful. However, sometimes friends were hurtful and demonstrated a lack of concern and knowledge. Participants reported that they felt that parents/primary caregivers were supportive and helpful. However, they also reported that sometimes their relationships were strained and tenuous. Finally, participants reported that receiving mental health services was sometimes difficult.

Phares and Compas (1990) and Mowbray et al.(2002) provide insight about how children and young adults diagnosed as children feel about their emotional and behavioral disorders and how their disorders affect others. Both groups of researchers note that persons with SED are aware of the distress that their illness causes for others. In addition, both groups of researchers determined that children with SED recognize that they are different and that their differences are distressful to themselves as well as others. It is important to note that Phares and Compas determined that children were more distressed about their internalizing symptoms whereas parents were more distressed about children’s externalizing symptoms. Mowbray and colleagues also articulate this view in their work. Many of the direct quotes from participants detail the distress caused by internal processes exhibited by the students with SED.

Comorbidity and Functioning

Comorbidity is the co-occurrence of two or more disorders. Research indicates that being diagnosed with multiple disorders is common for children with SED and significantly influences children’s functioning across multiple domains. In addition,

having two or more disorders increases the probability that children with SED have significant functional impairment. The research on family and community functioning reviewed above focuses on SED without investigating the impact of multiple diagnoses. Studies conducted by Bird, Gould, and Staghezza (1993), Kuhne, Schachar, and Tannock (1997), Lewinsohn, Rohde, & Seley (1995), and Marmorstein and Iacono (2001) advance the knowledge on children by investigating the relationship between comorbidity and level and patterns of impairment for children with SED. The studies demonstrate that overall, multiple diagnoses are deleterious and cause additional impairment.

Bird et al. (1993) conducted a secondary analysis of data from the Puerto Rico Child Psychiatry Epidemiologic Study (Bird et al., 1988). The Puerto Rico Child Psychiatry Epidemiologic Study ($N = 777$) used a probability sample to investigate the occurrence of disorders in Puerto Rican children. Bird et al. used a subsample of these data to investigate comorbidity and severity of impairment in a sample of children ages 9 to 16 years ($N = 222$). In addition, the researchers used only those cases in which the child was functionally impaired as indicated by scores from the Diagnostic Interview Schedule for Children (DISC; Costello et al., 1987) and the Children's Global Assessment Scale (CGAS; Shaffer et al., 1983).

The majority of the sample had at least one DSM-III (APA, 1980) diagnosis ($n = 159, 72\%$) and among these, the majority had at least two or more diagnoses ($n = 100, 63\%$). ANOVA analysis indicated statistically significant differences between the children with one diagnosis versus the children with multiple diagnoses ($F(1, 96) = 12.46, p < .001$). Scores on the DISC indicated that children with two or more disorders

were more impaired and utilized a greater amount of mental health services than children with only one disorder.

Lewinshohn et al. (1995) used a longitudinal design to examine the impact of comorbidity on six clinical outcome measures (service utilization, global functioning, suicide attempt, physical illness, academic achievement, and conflicts with parents) for children ($N = 1,507$). The researchers administered a version of the Schedule for Affective Disorders and Schizophrenia for School-Age Children (Orvaschel et.al, 1982) to a randomly selected sample of adolescents ages 14 to 18 who attended nine senior high schools in a western state. Approximately one year later ($M = 13.8$ months, $SD = 2.3$), the researchers administered the Longitudinal Interval Follow-up Evaluation (Keller et al., 1987) to the sample. Chi-square analyses revealed that there was a strong relationship between the number of disorders and academic problems, service utilization, suicide attempts, and global functioning. Specifically, the more diagnoses a child had, the more impaired he or she was.

In a similar study, Kuhne et al. (1997) investigated the relationship between patterns of comorbidity and functional impairment among children with ADHD ages 5 to 12 years ($N = 91$). The sampling frame included children who were current participants in a mental health efficacy program. Researchers administered the Parent Interview for Child Symptoms (Schachar & Wachsmuth, 1989) to the participants' parents and conducted telephone interviews with teachers. In addition, the researchers screened children for developmental disabilities and assessed IQs.

Comorbidity was common; the majority of the sample (64%; $n = 58$) had more than one diagnosis. The researchers divided the sample into three groups: ADHD only, ADHD with oppositional defiant disorder, and ADHD with conduct disorder. ANOVA analyses indicated statistically significant differences in the severity of symptoms between the ADHD, ADHD + ODD, and ADHD + CD groups ($F = 12.6, p < .01$). Children with ADHD + ODD or ADHD + CD had more severe ADHD symptoms than children in the ADHD only group. There were statistically significant differences between the groups on indicators of social functioning such as level of aggression ($F = 20.5, p < .01$), ability to behave well in public ($F = 11.0, p < .01$), ability to get along with parents ($F = 14.4, p < .001$), ability to get along with classmates ($F = 7.6, p < .05$), ability to get along with the family ($F = 11.1, p < .01$). Specifically, children with ADHD had less aggression, behaved better in public, and got along better with parents, classmates, and family members than children with ADHD + ODD or ADHD + CD. There were also statistically significant differences between the groups in arithmetic achievement ($F = 6.5, p < .01$) and overall academic achievement ($F = 4.3, p < .05$). Interestingly, children with ADHD + ODD had higher math and overall achievement scores than students in the ADHD only group.

Marmorstein and Iacono (2001) investigated the functioning of adolescent girls with both conduct disorder and major depression ($N = 224$). The researchers determined the clinical diagnoses of the sample by administering the Structured Clinical Interview for DSM-III-R (Spitzer, 1990) to children and a modified version of the Diagnostic Interview for Children and Adolescents- Parent version (Reich and Welner, 1988) to

parents. The final sample was predominately white, non-Hispanic (97%) and contained 25 subjects with conduct disorder, 53 with major depressive disorder, 20 with both disorders, and 126 subjects without any disorder. Researchers conducted two-factor ANOVA models with conduct disorder and major depressive disorder as the two factors and scores on functioning indicators as dependent variables. A diagnosis of conduct disorder, major depression, or a combination influenced the subjects' standardized test scores. Those with comorbidity were more impaired in several areas, including academic functioning, and high-risk behaviors such as substance use and sexual activity.

The above studies demonstrate the differences in functioning between children with none, one, or more than one disorder. Results were consistent regardless of whether researchers used samples of children currently impaired (e.g., Bird et al., 1993; Kuhne et al., 1997; Marmorstein & Iacono, 2001) or samples from the general population (e.g., Lewinshohn et al. 1995). Most of the studies used large representative samples; thus these results appear to be generalizable.

Marmorstein and Iacono (1997) and Kuhne et al. (1997) investigated the impact of primarily externalizing disorders. These studies investigated the functioning of children already recognized as impaired. The samples may not include the true range of functional impairment (from mild to severe) exhibited by children with comorbid disorders. Future research should include samples that contain a range of functional impairment.

In summary, the literature demonstrates that on average, children with SED have problems in functioning across multiple areas (e.g., home, school, community). In

addition, having more than one disorder may increase the degree of functional impairment experienced by these children. The following section summarizes current treatment options.

Current Treatment

Children with SED experience a variety of emotional and behavioral difficulties. Some children may exhibit more of the externalizing behaviors such as those associated with conduct disorder, oppositional defiant disorder, or attention deficit hyperactivity disorder. In contrast, some children may exhibit more of the internalizing behaviors such as those associated with depression or anxiety disorders. Additionally, some children may exhibit a combination of both internalizing and externalizing disorders.

Interventions for children with SED must be broad enough to address the functional impairment exhibited by children with SED but flexible enough to address a broad range of symptoms. In addition, treatments for children must include an understanding of the child's developmental stage, biological predispositions, environment and potential strengths (Cohen, 1995).

This section reviews the common treatment options for children with SED. Specifically, this section describes treatment options such as behavioral psychopharmacological , and school and family-based interventions that professionals currently use to assist children with SED. This section concludes with a discussion of the social work profession's role in the treatment of children with SED and their families.

Behavioral interventions

Behavioral interventions are those that are predicated on the central propositions of social learning theory and have widespread acceptance for use with children with SED. Behavioral theory posits that all behavior is learned and can be changed through positive or negative reinforcement (Thomlinson & Thomlinson, 1996). Interventions based on behavioral theory tend to define acceptable behaviors and provide positive reinforcement when behaviors occur or negative reinforcement when acceptable behaviors do not occur.

Research shows that behavioral interventions are effective in reducing negative behaviors in children with SED (Kiser et al., 1996; Musser, Bray, Kehle, & Jenson, 2001; Noell, Duhon, Gatti, & Connell, 2002; Milin, Coupland, Walker, & Fisher-Bloom, 2000; Svedin & Wadsby, 2000; Theodore, Bray, Kehle, & Jenson 2001; Grizenko, Papineau, Sayegh, 1993; Grizenko, 1997). As a result, human service professionals have created and implemented behaviorally-based interventions in a variety of settings. Two of these settings are public schools and community-based mental health facilities.

School-based behavioral interventions

The public education system plays an important role in the lives of children with and without SED. Teachers have daily contact with students and use written documents such as report cards, interim reports, and daily behavioral sheets to monitor and evaluate children's academic and social progress. Teachers serve as the liaison between students and parents and other helping professionals within the school system. Depending on each student's specific needs, teachers connect students with school social workers, psychologists, nurses, and/or guidance counselors. Finally, according to Sutherland

(2000), teachers have the ability to develop positive relationships with students and become important role models for appropriate behaviors. Thus, teachers are an important influence in the lives of children with and without SED.

School-based interventions allow children with SED access to specialized services and satisfy federal mandates regarding the education of children with disabilities (Hendrickson, Gable, Conroy, Fox, & Smith, 1999). School-based interventions are often multidisciplinary and involve parents or primary caregivers. These interventions may be as simple as schools adopting token economy systems (e.g., Musser et al., 2001), providing training for teachers, parents or community members (e.g., Kutash, Duchnowski, Sumi, Rudo, & Harris, 2002) conducting behavioral assessments for each child (e.g., Hendrickson et al.) or providing special summer programs for students and family advocates (e.g., Briar-Lawson, Lawson, Collier, & Joseph, 1997). In contrast, school-based interventions may be as complex as schools providing comprehensive mental health services such as individual, group, or family therapy, support groups, and referrals for medication (e.g., Weist, Nabors, Myers, Armbruster, 2000).

Behaviorally-based interventions for children with SED are popular in schools. Researchers such as Salend, Whittaker, & Reeder (1992), Theodore et al. (2001), Musser, Bray, Kehle, & Jenson (2001), March and Horner (2002), Kennedy et al. (2001), Viggiani, Reid, and Bailey-Dempsey (2002), Noell et al. (2002), Moote, Smyth, Wodarski (1999), Briar-Lawson et al. (1997), Kutash et al. (2002), and Nelson, Martella, and Marchand-Martella (2002) have evaluated their effectiveness.

Several researchers have used single-subject research designs to evaluate the effectiveness of school-based behavioral interventions (e.g., Musser et al. 2001; Salend et al., 1992; Theodore et al., 2001). Salend et al. used an A-B-A-B reversal design to evaluate the effectiveness of a peer-mediated behavior management system ($N = 20$). The teacher established a list of specific behaviors that she or he wanted the students to demonstrate. Salend et al. monitored the frequency and intensity of behaviors during a 6 to 8 day baseline period. Then, the researchers divided the class into two groups. Group A had eight students and group B had 12 students. At the end of each day, the teacher asked the two groups to recall their specific group behavior and use a researcher-created tool to decide on a group behavior rating. After the group reached a consensus about their behavior rating, the students compared their rating with the teacher's rating. If the two ratings matched, the teacher awarded the students a prize.

Salend et al. (1992) discontinued the intervention and monitored the two group's behaviors for a second baseline period. After 9 days, Salend and the researchers resumed the intervention. Results indicate that the number of inappropriate behaviors decreased after the children participated in the intervention. Children maintained this decrease 7 weeks after the second intervention.

Theodore et al. (2001) used an A-B-A-B reversal design to determine whether providing random rewards for positive behaviors decreased a child's frequency of negative behaviors ($N = 5$). Theodore and colleagues monitored students' behaviors during a baseline period of three weeks. During the intervention period, the teacher randomly rewarded students' positive behaviors; students did not know beforehand

when or which behaviors would be rewarded. After two weeks, the teacher discontinued the random reward system. Then, the teacher repeated the intervention and subsequent withdrawal. Results indicate that students' negative behaviors decreased during the entire study. However, decreases were most apparent during the intervention periods.

Musser et al. (2001) conducted a similar study using an A-B-A-B design to investigate the effects of a behavioral intervention on the negative behaviors of children with SED ($N = 6$). Important differences exist between studies conducted by Theodore et al. (2001) and Musser and colleagues. The intervention evaluated by Musser and colleagues was more extensive than the one evaluated by Theodore and colleagues. Musser et al. evaluated an intervention that included the posting of classroom rules, the use of positive language by the teacher, and a token economy system with mystery motivators. Musser and colleagues used three of the students in the sample as comparisons; the other three received the intervention. Musser and colleagues used an empirically-validated instrument, the Teacher Report Form (Achenbach, 1991) as a measurement tool in addition to direct observations. Finally, Musser and colleagues had a predominately African American sample whereas Theodore and colleagues had a predominately white, non-Hispanic sample.

Musser et al. (2001) found that children participating in the behavioral intervention decreased the frequency of their negative behaviors. At baseline, all students scored in the clinical range for problems on the Teacher Report Form (Achenbach, 1991). However, at the end of the intervention, the students who received the intervention scored in the normal range of the Teacher Report Form.

Musser et al. (2001) Salend et al. (1992), and Theodore et al. (2001) demonstrated the effectiveness of school-based behavioral interventions for children with SED. The reversal designs permitted researchers to collect data during multiple intervention and baseline phases; therefore, researchers could examine changes and determine whether these changes continued during the intervention and withdrawal periods. These studies are important because they demonstrate that teachers can make simple modifications that improve the functioning of children with SED in the classroom.

Limitations of these studies include small samples that were not randomly selected or randomized to groups. In addition, these studies due to their sampling limitations, could not use statistical analyses to determine whether there were statistically significant differences between the four data collection periods. Thus, changes occurred but the researchers could not indicate whether changes were due to chance.

March and Horner (2002) and Kennedy et al. (2001) conducted additional studies that examined school-based behavioral interventions. These studies evaluated the use of comprehensive behavioral assessments as part of a plan to improve the behavior of individual students. March and Horner evaluated the functioning of children with SED ($N = 24$) from a suburban school system and posited reasons for their negative behaviors. The intervention consisted of each child working with his or her parents and teachers to develop a written behavior contract. The behavior contract was specific for each student and contained specific goals that each child would achieve daily. During the school day, each of the student's teachers provided written feedback about his or her behavior. At the end of each day, teachers provided a brief written evaluation of the student's behavior

and provided a copy for students to give to parents/guardians. The students received a small prize if the student had written feedback from all teachers.

To measure outcomes, March and Horner (2002) administered the Functional Assessment Checklist for Teachers and Staff (March et al., 2000) to teachers. In addition, they examined the number of office referrals, lunch detentions, or regular detentions for students participating in the intervention.

March and Horner (2002) grouped students based on what the researchers believed to be the goals for the students' negative behaviors. Descriptive statistics indicated that children engaging in negative behaviors to seek adult or peer attention decreased the frequency of negative behaviors during the intervention. However, those students who engaged in negative behavior to avoid class work showed little improvement in the frequency of negative behaviors. Interestingly, the researchers classified most children (45%) as engaging in negative behaviors to avoid class work.

Kennedy et al. (2001) evaluated a similar intervention. Kennedy and colleagues used a single-system design to study the impact of behavioral assessments and person-centered planning on the behavior of children with or at-risk for serious emotional disorders ($N = 3$). The researchers administered the Functional Analysis Observation Form (O'Neill et al., 1994) to the students' teachers. Next, the researchers, teachers, and special education school personnel met and reviewed the results of the Functional Analysis Observation Form. The researchers asked the group to determine student strengths, challenges, how negative behaviors were maintained, and how this knowledge could be incorporated into each class period. Finally, the researchers asked the group to

determine a best-practice model for each child and incorporate this model into their classrooms. Descriptive statistics indicated that two children decreased the frequency of negative behaviors and maintained their progress throughout the remainder of the school year. However, one child had an increase in negative behaviors and had to be placed in a more restrictive classroom setting.

March and Horner (2002) and Kennedy et al. (2001) demonstrate the importance of a comprehensive assessment for each child. In addition, the researchers demonstrate the necessity of including multiple persons in the assessment process. This is important because a child with SED may have different behaviors across different systems (e.g., ,home, community, school) and understanding if patterns exist between these systems is important in developing behavioral contracts.

Having multiple persons involved in the assessment process provides additional information that researchers may use to posit reasons why negative behaviors occur in specific children. In the above interventions, most of the children improved after behavioral plans were implemented, but a minority did not decrease negative behaviors. March and Horner (2002) and Kennedy et al. (2001) used information from a comprehensive behavioral assessment to classify these children as engaging in negative behaviors to avoid tasks. March and Horner speculate that children engaging in negative behaviors to avoid tasks may require more intensive interventions. Another possibility is that these students have educational needs that are not met in the school system. Specifically, these students may try to avoid those tasks that they are incapable of

completing. Future research should investigate the specific tasks in which children attempt to avoid and determine if certain avoidance patterns exist.

Researchers have evaluated the effectiveness of studies that involve the direct partnership of school personnel with professionals such as social workers and psychologists. Viggiani et al. (2002) examined a behavioral intervention that included a collaborative effort between a social worker and teacher. The intervention consisted of a social worker and teacher working together in a classroom. Viggiani and colleagues sought to determine whether students participating in the intervention increased attendance, positive behavior, and grades. The researchers selected four classrooms, two to receive the intervention ($n = 36$ and $n = 20$), and two to serve as comparisons ($n = 22$ and $n = 18$). Most of the students were males from lower income families.

Outcome measures included report cards, a count of the number of times parents participated in school meetings or activities, and post test questionnaires. ANOVA analysis indicated that at the end of the grading period, there were statistically significant differences between the intervention groups and comparison groups. Specifically, the intervention groups increased their grades in math ($F = 4.3, p < .05$), science ($F = 5.5, p < .05$), and social studies ($F = 4.3, p < .05$). In addition, the intervention groups increased their positive behaviors in the classroom ($F = 5.0, p < .05$).

Noell et al. (2002) evaluated a collaborative intervention between school psychology interns and teachers. The intervention included school psychology interns providing consultation and guidance for four teachers working with children with difficult behaviors ($N = 8$). The teachers met with the school psychology interns and

devised a behavior modification plan for each student. Each teacher implemented the recommended plans and documented the results. In addition, the teachers attended training conducted by the psychology interns. At the conclusion of the intervention, teachers reported that students engaged in less problematic behaviors. In addition, teachers reported that the consultation process was helpful and that they were pleased with the quality of information provided by consultants.

The above school-based interventions included interventions limited to the classroom. However, there are additional school-based interventions for students with SED that are more comprehensive and may incorporate numerous systems. Kutash et al. (2002) evaluated a program for children with SED. The program consisted of school personnel, parents, and community agencies attending a 12-hour training program on assessing children and implementing behaviorally-based intervention strategies. The researchers recruited two groups of students, an intervention group ($n = 23$) and a comparison group ($n = 31$) as well as school staff school staff ($n = 13$) to participate in the intervention. Descriptive statistics indicated that the groups of children were predominately male and white, non-Hispanic.

Kutash and colleagues (2002) administered the Child Behavior Checklist (Achenbach, 1991) and the Child and Adolescent Functional assessment Scale (Hodges, 1994) to the children's parents, the Wide Range Achievement Test (Wilkinson, 1993) to the children and the Knowledge Inventory (Kutash, Duchnowski, & Rudo, 1997) and Teacher Knowledge and Skills Survey (Cheney & Barringer, 1995) to the teachers. The researchers administered the instruments before, during, and after the intervention.

Results indicate that children, school, and community participants benefited from the intervention. School staff increased their knowledge of children with SED ($t = -3.26, p < .01$) and students participating in the program showed a decrease in problem behaviors ($t = 2.22, p < .04$).

These studies demonstrate the effectiveness of school-based behavioral interventions. These interventions may involve an entire class of children with SED adopting specific rules and consequences for classroom behaviors (e.g., Salend et al., 1992) or teachers developing behavior plans for specific children (Musser et al., 2001). However, all of the behaviorally-based school interventions involve children understanding which behaviors are acceptable as well as the consequences for negative behaviors. In addition, all of the behaviorally-based school interventions involve a degree of collaboration. This may mean collaboration between teachers, parents, and community leaders (e.g., Hendrickson et al. 1999; Kutash et al, 2002), or collaboration between students and teachers (e.g., Theodore et al., 2001; Musser et al., 2001; Salend et al.). Further, interventions may include teachers working specifically with other professions such as social workers (e.g., Viggani et al., 2002) and school psychologists (e.g., Noell et al., 2002).

Day Treatment Intervention/ Community Facility

The day treatment model of service delivery is based on the principles of behavior theory. Day treatment creates an environment where clients receive, “. . .daily comprehensive therapeutic experiences that do not require removing children from their homes or families. . .” (Kaplan & Sadock, 1998, *p.* 1274). Peers of similar ages are

grouped together and spend a designated amount of time participating in therapeutic activities such as social skills games, structured field trips, recreational skills groups, educational groups, and processing groups. The child is the client; however, the day treatment staff also provides education and support to the family. In this manner, the staff is an integral part of the therapeutic process and facilitates a process whereby children and their parents learn skills that enable them to have more positive interactions with each other. In essence, the day treatment staff provides “positive experiences and a structure that enables the children and their families to internalize controls and to function better than in the past regarding themselves and the outside world” (Kaplan & Sadock, *p.* 1275).

Researchers such as Milin et al. (2000), Svedin and Wadsby (2000), Grizenko et al. (1993), and Grizenko (1997) evaluated and documented the effectiveness of the day treatment model of service delivery. Milin et al. evaluated the functioning of students discharged from a day treatment program ($N = 55$) in Canada. The researchers administered several instruments, including the Child Behavior Checklist (Achenbach, 1991), Youth Self Report (Achenbach, 1991), Teacher Report Form, Beck Depression Inventory (Beck & Beamesderfer, 1974) to the student, teacher, or caregiver during three times, admission, discharge, and one year post-discharge. Repeated measures ANOVA indicated that youth had improved functioning at discharge and one year later. In addition, the researchers constructed a regression model to ascertain whether a group of variables (scores on CBCL at admission, CGI ratings by clinicians, number of separations from family, family history of mental illness, and patients treatment history) could predict

scores on the CBCL at discharge. The group of independent variables successfully predicted scores on the CBCL at discharge and accounted for 93.6% of the variance of CBCL at discharge.

Svedin & Wadsby (2000) and Grizenko (1997) conducted similar studies; however, their studies examined children four to five years after completing the day treatment program. Svedin & Wadsby evaluated children four years after completing the day treatment program and included interviews with the day treatment staff, teachers, and parents ($N = 104$). Their study compared an intervention group to a comparison group of community children. The researchers administered a researcher-created instrument based on the work of McFarlane et al. (1954), Jonsson & Kolvesten (1964) and Cederblad & Hook (1984) to parents, day treatment staff, and teachers. Wilcoxin matched pair tests indicated that there were significant improvements in functioning for the children with emotional disorders.

Grizenko (1997) examined a sample ($N = 33$) of behaviorally disordered children five years after attending a day treatment program. The children, ages 10 to 16 years each attended the day treatment program an average of six months. Grizenko administered the Revised Child Behavior Profile (CBP, Achenbach & Edelbrock, 1983) and several other instruments to the sample during three points, at intake, discharge, and five years later. Repeated Measures ANOVA tests indicated that children had statistically significant changes in total behavioral functioning from intake to five year follow up ($F = 86.45, p < .001$). Further, multiple regression analyses indicted that parental involvement was related to CBP score ($r = .754, p < .001$) and accounted for 55% of the adjusted variance

in CBP score ($r^2 = .554$). Thus, the more parents were involved in treatment the greater the behavioral gains for children after five years.

Day treatment programs sometimes work collaboratively with school systems. Whitfield (1999) evaluated a day treatment program functioning in conjunction with a school system. Whitfield sought to determine whether a program implemented at the day treatment program could reduce school violence. The intervention consisted of a 12-session cognitive behavioral program that included self-instruction, self-assessment, self-evaluation, arousal management, and adaptive skills development. Whitfield used a single subject design that included multiple baselines across subjects. The researcher asked 16 males attending the school-based day treatment program (8 to receive the intervention and 8 to serve as a comparison) to participate in the study. Whitfield administered the State-Trait Anger Expression Inventory (Spielberger, 1991) to the children and had staff record the child's daily behavior on the Staff Daily Report (Whitfield, 1996). Data were collected during a 2 to 4 week baseline period. After the baseline period, Whitfield administered the 12-session intervention. Whitfield plotted each participant's results on graphs. Results from the graphs indicated that students participating in the intervention increased their level of self control and their ability to manage their anger. Participants maintained these results after six-months of completing the program.

These studies demonstrate that children attending behaviorally-based day treatment programs or participating in school-based interventions decrease the frequency of negative behaviors. However, is a decrease in the frequency of negative behaviors

enough to determine that children are improving? Behaviorally-based programs change external behaviors, but what about the thought processes behind the original behaviors? Does a child's internal functioning such as moods and emotions or thinking change?

Children with SED experience multiple life stressors such as abuse and crime and tend to be from families of lower socioeconomic status. Do behaviorally-based programs prepare these children to deal with their past and future life stressors while increasing their internal and external functioning? More studies are needed that determine if these programs truly change functioning across multiple areas and over time.

Family Interventions

Family interventions are those interventions predicated on the belief that helping the child involves strengthening the entire family unit (Dubois & Miley, 2002). Family interventions for children with SED include models derived from a family systems approach. These approaches are family-oriented and examine the family system as well as the child with SED.

The literature contains examples of family interventions that improve the functioning of children with SED and their families (Harrison, Boyle, & Farley, 1999; Schoenwald, Brown, Henggeler, 2000; Henggeler et al., 1999). One such study, Harrison et al. (1999) used a non-experimental one group pretest posttest design to evaluate the effectiveness of a 12-week family-based intervention for children with SED ($N = 115$). Harrison and colleagues administered the Child Behavior Checklist (Achenbach, 1991) and a series of researcher-created scales which measured family cohesion, parent-child agreement, family time together, time spent in the community, parenting styles, and

mental health to the parents of the children. Next the researchers administered the 12-week intervention to the children and families. The intervention was a training program and a series of outdoor recreational activities. Families spent two hours each week engaged in therapeutic activities designed to increase the functioning of children with SED and their families. After the 12 weeks, the researchers administered the instruments to the parents.

Results indicated that at the end of 12 weeks, parents used more appropriate parenting styles with children ($t = -6.05, p < .001$). In addition, at the end of twelve weeks, boys ($t = 5.69, p < .001$) and girls ($t = 2.55, p < .014$) decreased the frequency of their negative behaviors.

Another family intervention is multisystemic therapy. Multisystemic therapy, “is an empirically-based treatment that focuses on changing the known determinants of youth antisocial behavior, including characteristics of the individual youth, family, peer relations, school functioning, and family-neighborhood interactions” (Schoenwald, Brown, & Henggeler, 2000, *p.* 113). Multisystemic therapy is based on the work of Bronfenbrenner (1979) and includes addressing problems from a social ecological theory model. Consequently, a youth with SED must be viewed within the context of his or her family and external community environment. Therapy is intensive; therapists are available 24-hours a day, seven days a week and usually have daily contact with clients.

Several studies document the effectiveness of multisystemic therapy for use with children with SED. One study conducted by Henggeler et al. (1999) compared the functioning levels of children receiving multisystemic therapy to children receiving

traditional inpatient therapy. Henggeler and colleagues (1999) randomly assigned children with psychiatric emergencies to two groups, a multisystemic therapy group ($n = 57$) or an inpatient hospitalization group ($n = 56$). The sample was predominately male (65%) and African American (64%) and the majority lived in single parent homes (58%). The researchers administered instruments such as the Global Severity Index of the Brief Symptom Inventory (Derogatis, 1993), the Child Behavior Checklist (Achenbach, 1991), Personal Experiences Inventory (Winters & Henly, 1989), and the self-esteem subscale of the Family, Friends, and Self Scale (Simpson & McBride, 1992) to the children and families. The researchers administered the instruments during three times - at admission, 2-weeks after admission, and 4-months after treatment.

Results indicate statistically significant differences between the children receiving multisystemic therapy and those receiving inpatient hospitalization. Children receiving multisystemic therapy decreased their externalizing symptoms ($F(1, 102) = 6.56, p < .011$), and increased the level of family cohesion ($F(2, 206) = 6.56, p < .001$). In addition, children ($F(1, 92) = .52, p < .007$) and caregivers ($F(1, 93) = 4.14, p < .044$) from the multisystemic therapy group reported greater satisfaction with treatment than those in the inpatient therapy group. Interestingly, Henggeler and colleagues (1999) noted that children receiving inpatient hospitalization had improved self-esteem compared with children receiving multisystemic therapy ($F(1, 109) = 7.72, p < .006$).

Similar research studies such as those conducted by Henggeler et al. (1993), Henggeler et al. (1999) confirm the effectiveness of multisystemic therapy as a treatment for children with SED. However, there is a gap in information concerning the impact of

multisystemic therapy on the internalizing symptomology and thought processes of children with SED and their families. Further, studies that evaluate multisystemic therapy use randomized clinical trials to demonstrate the effectiveness of multisystemic therapy. These studies are structured and controlled; consequently, the results may not be generalizable to the larger population of children with SED.

Psychopharmacology

Within the past 20 years, researchers have expanded knowledge about the biological basis of disease and the benefits and costs of using medication to alleviate symptoms in children with SED. Studies examining children with SED have used descriptive statistics to assess the degree of medication use in their samples. For example, Teich, Buck, Graver, Schroeder, and Zheng (2003) inspected records from three states and determined that the percentage of children using psychotropic medications from public mental health services varied from 62.8% to 67.2%. Stimulants and antidepressants seemed to be the most commonly prescribed psychotropic medications for children, with the percentage ranging from 39.7% to 50.0% for stimulants and 18.3% to 37.3% for antidepressants.

Teich et al. (2003) presented descriptive data describing the use of psychotropic medication in their sample. However, studies such as those conducted by Olfson, Marcus, Weissman, and Jensen (2002), Pincus et al. (1998), and Vastag (2002) advance findings by Teich et al. For instance, Olfson and colleagues (2002) used data from two national studies of medication utilization to determine the prevalence of children using psychotropic medications ($N = 10,389$). Results indicated that the rate of psychotropic

medication at the end of the study period was 3.9 per 100 children and adolescents. Stimulant use was 2.4 per 100 children and antidepressant use was 1.0 per 100 children. Olfson and colleagues conclude that the prevalence of psychotropic medication is increasing and children who are white, non-Hispanic, male, live in the south, and have public insurance are most likely to be medicated.

Pincus et al. (1998) demonstrated that the number of times that children visit a psychiatrist or primary care practitioner related to psychotropic medication (either initial prescription or follow-up care) is increasing. Pincus and colleagues used data from the 1985 and 1994 National Ambulatory Medical Care Survey. According to the data, the number of office visits for children related to psychotropic medications increased from 1.10 million in 1985 to 3.73 million in 1994. The researchers observed that a significant proportion of this increase was due to the increase in visits to primary care physicians for stimulant medications (.31 million in 1985 to 2.41 million in 1994).

Researchers posit that the increase in stimulant medication prescriptions is due to the increase in new ADHD cases among children. However, are children receiving a diagnosis of ADHD based on clinical indicators such as the DSM or based on parent or teacher reports? Angold, Erkanli, Egger, and Costello (2000) used a four-year longitudinal design to investigate the trends of stimulant use in children ($N = 1,422$). Each year, researchers collected data from the Child and Adolescent Psychiatric Assessment (Angold et al., 1995), the DSM symptom list for ADHD (American Psychiatric Association, 1994) and Teacher Report Form (Achenbach, 1991) for the sample. Results indicated that 3.4% of the sample met the DSM criteria for ADHD.

However, 7.3% of the sample received stimulants for ADHD. Children with a DSM diagnosis of ADHD received stimulants for an average of 50.4 months ($SD = 25.0$) whereas children without a diagnosis of ADHD that received stimulants took them for an average of 40.3 months ($SD = 29.9$). As previous studies confirm, boys were more likely than girls to meet the DSM criteria for ADHD ($OR = 3.7, p < .0001$).

Olfson et al. (2002), and Pincus et al. (1998) determined the prevalence of psychotropic medication use among children with SED and identified trends regarding the use of psychotropic medications. However, how effective is medication at alleviating the symptoms of SED? Pelham et al. (2000) evaluated the efficacy of medication for children with SED. Pelham and colleagues compared the functioning of children receiving behavioral treatment ($n = 60$) and children receiving behavioral treatment plus medication treatment ($n = 57$) at a summer program. Pelham and colleagues used data collected from daily point sheets, daily report cards, the IOWA Conners Rating Scale (Loney & Milich, 1982), Self Perception Profile for Children (Harter, 1985) and peer ratings. Results indicated that there were statistically significant differences between the behavior therapy group and the behavior therapy plus medication group on peer evaluation rating $F(4,81) = 4.74, p < .01$. Specifically, peers receiving medication and behavior therapy were better liked by peers than children in the behavior therapy only group. However, there were not statistically significant differences between groups on parent or counselor ratings of the child's behavior or on the child's self esteem rating.

The use of psychotropic medications in children is increasing. Researchers such as Pincus et al. (1998) substantiate this trend. Much of the increase is due to the increased

identification by parents and teachers and subsequent medication of children with ADHD. However, medication alone is not a panacea. Research indicates that medication in conjunction with behavioral therapy appears to benefit children in areas such as peer relations. However, as in the case of multisystemic therapy and behavior therapy alone, medication by itself or in conjunction with behavioral therapy does not appear to influence children's ratings of self-esteem.

In addition, medication may be over prescribed for some children and under prescribed for others. As Angold et al. (2000) demonstrate, children may receive medications for illnesses while not meeting the criteria for these illnesses. This may complicate research studies in which those children are included. Research examining the diagnostic criteria and medication usage as well as research evaluating whether medication in conjunction with other treatments changes behaviors and improves the internal and external functioning of children.

Long-term Outcomes

Children labeled with SED experience long-term outcomes that affect their psychological, social, mental/academic/ biological, and family and community functioning. Long-term outcomes are those outcomes or circumstances that are not present when an initial label of SED is made. Rather, long-term outcomes develop as a child or adolescent with SED develops into early adulthood.

This section examines some long-term outcomes for children with SED, including their educational or vocational attainment. This section is divided into social, mental/academic/biological, and family and community functioning. However, the

categories are not mutually exclusive. A child's functioning in one area may influence functioning in another.

Social Functioning

Children labeled with SED have difficulties occupying and adapting social roles (Riley et al., 1998; Wagner, 1995). Children may have difficulty interacting with others in school, at home, or in the community. Wagner (1995) and Rylance (1998) conducted secondary analyses of data from the National Transition Study of Special Education Students (NLTS) and discovered that these difficulties persist into late adolescence and early adulthood. The NLTS is a national longitudinal study that describes the characteristics and outcomes for children with SED ($N = 8,000$). The sample is a representative sample drawn from over 300 school districts throughout the United States. Ryland and Wagner both used subsamples of the NLTS data. Both subsamples included youth who were predominately male, white, non-Hispanic, and from lower income families.

Wagner (1995) analyzed a subsample of NLTS data ($N = 777$) and determined that young adults with SED experienced greater difficulties than those experienced by students with other disabilities. Results indicated that three to five years after leaving high school, a significant portion of young adults labeled with SED as children had difficulty maintaining employment. Only 47.4% of youth with SED were employed compared to 56.8% of persons with other disabilities and 69.4% of the general population. In addition, youth with SED were more likely to have difficulty in relationships and integrating into the community. Three to five years after graduation,

girls with SED were more likely to be mothers (48.4%) compared to persons with any other disability (40.6%) or the general population (27.8%). Only 40.2% of children with SED lived independently compared to 37.4% of children with other disabilities. In contrast, 60.4% of the general population lived independently. Finally, youth with SED were more likely to be arrested (57.6%) than those with any disability (29.5%).

Rylance (1998) obtained similar results ($N = 412$). Only 17% of the sample worked full time, the majority (50%), were unemployed. Additionally, Rylance investigated whether personal, family, and school variables could predict postschool status for persons with SED. Rylance constructed a multiple regression model with 11 independent variables (number of parents in the home, parent's educational level, parent's income, gender, age, ethnicity, competency level, self care level, level of participation in vocational education, level of participation in counseling, and graduate status) and seven dummy-coded variables which were variations of the above 11 variables. Regression analysis indicated that the model predicted postschool employment status ($F(18,393) = 3.359, p < .001$) and that the independent variables included explained 13.33% of the variance in postschool employment. Interestingly, the school related independent variables accounted for only 2.54% of the variance in postschool employment whereas family and personal characteristics accounted for 10.77% of the variance in post school employment.

Rylance (1998) provides important information regarding the impact of personal, family, and school characteristics on the outcomes of children with SED. However, researchers must review these results with some skepticism. A large number of variables

were included in the multiple regression analysis which may contribute to the percentage of variance explained by the variables. Perhaps a better indication of the true impact of the variables would occur if a discussion of statistical power was included in the article or provided in an appendix.

Mental/Academic Functioning

Wagner (1995) and Vander Stoep, Weiss, McKnight, Beresford, and Cohen (2002) discovered that children diagnosed with mental or behavioral disorders had poorer academic functioning than children without disorders. Wagner discovered that children labeled with SED have difficulties that influence life choices and economic opportunities. During high school, students with SED miss more days of school than children with any other disability (for example, students in the 12th grade with SED missed an average of 17.9 days compared to 14.5 days for students with other disabilities). They have higher drop out rates (54.8%) than other disabled students (36.4%) or students in the general population (20.9%). Students with SED have high class failure rates; 74% of students with SED who took regular classes failed one or more classes and 23% of students with SED who took regular classes failed one or more classes. In addition, students with SED were less likely to be involved in school clubs (37.3%) than students with any disability (42.6%) or the general student population.

Vander Stoep et al. (2002) conducted a longitudinal study that evaluated which predictors were most likely to predict school failure and juvenile justice system involvement for adolescents with SED ($N = 181$). Researchers administered the Diagnostic Interview Schedule for Children (Costello et al., 1987) Social and

Occupational Functioning Assessment Scale (DSM-IV), and the Children's Global Assessment Scale (Shaffer et al., 1983) to a probability sample of adolescents and their parents during three times over the course of four years. Twenty-two adolescents (12.2%) failed to complete high school and twenty-four adolescents (13.3%) had criminal involvement during their early adulthood. Most of the criminal activity (70%) involved activities that violated the rights of others (e.g., assaults, theft, and property damage). The researchers calculated the relative risk percentages for school completion and criminal activity. Results indicated that adolescents with any disorder had a 6.85 times higher risk of dropping out of school than children without a disorder. Additionally, adolescents with a disorder had a 1.91 times higher risk of criminal activity. Adolescents with a diagnosis of disruptive disorder seemed to fare worse than those with other disorders. Compared to depression, anxiety, or substance abuse, youth diagnosed with disruptive disorder had a greater probability of leaving school or being involved in criminal activities.

Diagnostic Tools

There are multiple instruments that human service professionals may use to assess whether children require a label of SED. Some instruments such as the Child Behavior Checklist (Achenbach, 1991) and the Child and Adolescent Functional Assessment Scale (Hodges, 1994) have been extensively tested and adopted for use in national children's mental health evaluation studies. In contrast, some tools such as one created by Swanson et al. (2001) were developed to meet the needs of a specific research study and were not widely tested. This section discusses some of the most popular instruments, including the Child Behavior Checklist (Achenbach, 1991) (and its corresponding forms, the Youth

Self Report and Teacher's Report Form), Child and Adolescent Functional Assessment Scale (Hodges, 1994), and Diagnostic Interview Schedule for Children (Costello et al., 1987).

Some studies require the primary caregiver or additional source such as a teacher to provide information concerning the child's behavioral and emotional functioning. While others require the actual child to provide information concerning his or her emotions and behaviors. Further, some instruments assess the validity of answers by evaluating information provided by multiple respondents (e.g., Crowley et al., 2001).

Child Behavior Checklist (CBCL), Child Behavior Checklist 2-3(CBCL/2-3), and Youth Self Report (YSR)

Achenbach (1991) developed the Child Behavior Checklist (CBCL) and Youth Self Report (YSR). Both instruments measure the behavioral and emotional rating of children ages 4 to 18 years. The CBCL contains 118 fixed response items and 2 open-ended items that caretakers answer based on their perceptions of the child's functioning within the past six months. Caretakers read a statement about the child's behavioral and emotional functioning and then respond by indicating 0 = not true, 1 = somewhat or sometimes true, and 2= very true. All of the items are grouped into 20 categories (e.g., aggressive behaviors, attention problems, social problems, etc.) that assess specific behaviors that children engage in. The CBCL has a one week test-retest reliability of $r = .93$ (Achenbach, 1991).

The Child Behavior Checklist 2-3 (CBCL/2-3; Achenbach, 1992) is similar to the CBCL; however, human service professionals administer the CBCL to children ages two

to three years. Additionally, the CBCL 2-3 has 99 fixed response questions and 12 open-ended questions. The additional open-ended items provide additional opportunities for caregivers of young children to articulate information that may be hard to quantify in the fixed response questions.

The Youth Self Report Checklist (YSR; Achenbach, 1991) and Teacher's report Form (TRF; Achenbach, 1991) are alternate versions of the CBCL; however, the child, instead of the primary caregiver, responds to items in the YSR and the child's teacher responds to items in the TRF. Children read and complete the items (or have the item read to them if they do not have a fifth grade literacy level) in the YSR and decide how true an item is based on their behaviors within the past six months. The scale is the same as the CBCL with 0 = not true, 1 = somewhat or sometimes true, and 2 = very true. Teachers read and complete the items for the TRF based on their student's behavior within the past six months using the same rating scale.

Researchers have used the CBCL, YSR, or TRF with a variety of samples; including, samples that contain international children (Crijnen, Achenbach, & Verhulst, 1997; Koot, Van den Oord, Verhulst, & Boomsma, 1997; Liu, Sun, Neiderhiser, Uchiyama, Okawa, & Rogan, 2001), underrepresented minority children. One seminal study, Crijnen et al. used the CBCL and determined that children residing in different cultures (Australia, Belgium, China, Germany, Greece, Israel, Jamaica, the Netherlands, Puerto Rico, Sweden, Thailand, and the United States) demonstrated different degrees of emotional and behavioral symptomology ($N = 13,697$). The researchers constructed 12 samples, one from each nation, using a variety of random sampling techniques. For

instance, some areas (e.g., China, Greece) used schools as sampling frames while others (e.g., Australia, Belgium, Puerto Rico, United States) used youth health clinics or households as sampling frames. The researchers, with the assistance of native-speaking persons, administered the CBCL to parents.

The mean total problem score for the entire sample was 22.4 ($SD = 17.2$). ANOVA analyses indicated that there were statistically significant differences between cultures based on total CBCL problems score $F(1,7760) = 85.1, p < .001$. Parents of Puerto Rican children reported the most behavioral difficulties ($M = 38.4$) while parents of children from Sweden reported the least ($M = 13.3$). There were differences between males and females on total problem score $F(1,7,760), p < .05$; parents of boys reported more problems ($M = 22.9$) than parents of girls. The researchers noted that there were no statistically significant differences between groups based on age or significant interaction effects present.

Researchers tested the discriminant validity of the CBCL and the YSR by dividing samples into two groups, one with clinical symptomology and one without, and determining if the CBCL and YSR could discriminate between the two groups. For example, Wadsworth, Hudizak, Heath, and Achenbach (2001) and Crowley et al. (2001) discovered that the CBCL and YSR were able to differentiate between children with and without clinical diagnoses. Additionally, Wadsworth et al. discovered that the CBCL was able to differentiate between children with multiple and a single diagnosis.

Crowley et al. (2001) compared a group of children currently receiving mental health services ($N = 87$) to a comparison group of a children not receiving services ($N =$

85). The researchers administered the CBCL and YSR, along with other diagnostic instruments to both group groups of children.

Several studies have evaluated the test-retest reliability of the CBCL and CBCL/2-3. Koot et al. (1997) investigated the prevalence of behavioral problems in Dutch children ages two to three years old and evaluated the test-retest reliability of the CBCL/2-3 (Achenbach, 1992) for Dutch children ($N = 426$). Koot et al. administered the CBCL/2-3 to parents of three samples of children, children referred to a mental health facility in the Netherlands ($N = 426$), a representative sample of community children ($N = 420$), and a sample of twins ($N = 1,306$ pairs). The researchers administered the CBCL twice to randomly selected parents from the community sample ($M = 19.4$ days, $SD = 6.6$) and established that the CBCL/2-3 had a high test-retest correlation ($r = .87$) on the total problems scale.

Next, researchers have used the CBCL, YSR, or TRF in research studies evaluating the validity of the CBCL and other instruments (e.g., Casat, Norton, & Boyle-Whitesel, 1999; Jensen, Watanabe et al., 1996; Mattison & Spitznagel, 1999). Casat et al. evaluated the concurrent validity of the Inattention/Overactivity with Aggression questionnaire (IOWA; Barkley, 1990; Loney and Milich, 1982) and Conners Abbreviated Symptom Questionnaire (CASQ; Barkley, 1990; Goyetre et al., 1978) by comparing the combined results of the IOWA and CASQ to results on the TRF, CAFAS, and CBCL ($N = 441$). The researchers administered the IOWA and TRF to the sample's teachers, and the CASQ, CAFAS, and CBCL to the sample's parents.

Finally, researchers have used the CBCL to understand the development of emotional and behavioral problems for children over time (Achenbach & Howell, 1993; Wadsworth, Hudziak, Heath, & Achenbach, 2001). The CBCL and the YSR have high internal consistency, reliability, and construct and criterion validity (Achenbach, 1991). For example, Crijnen et al. (1997) used the CBCL to analyze scores from a random sample of 13,697 children from 12 countries. They discovered that although the clinical cutoff point for problematic behavior needed to be adjusted for different cultures, the items on the CBCL were effective predictors of the children's behavior.

Current Study

Within the past 15 years, the social work and other human service professions have seen an increase in literature and research regarding children with SED and their families. The publication of the system-of-care principles (Stroul and Friedman, 1986) stimulated renewed interest in research about children with SED. Consequently, numerous interventions and programs were developed in an attempt to meet the needs of these children and their families. These programs and interventions purport to improve the functioning of children with SED and researchers have conducted studies that substantiate this. However, there are still programs and interventions requiring empirical analysis to determine whether they assist children with SED and their families.

The current study evaluated a predominately behaviorally-based day treatment program for children with SED. Past research evaluating day-treatment programs demonstrates that the day-treatment model of service delivery is successful. However, variation exists among day treatment programs. Individual programs may offer different

services, have different eligibility criteria, and have staff with different strengths and knowledge.

The current study evaluated a publicly funded day treatment program in Richmond, Virginia. The study was guided by the following questions: (a) do children attending the day treatment program for at least six months show an increase in overall functioning, (b) in what areas do children show improvement, and (c) what type of child benefits from the day treatment program?

Research Hypotheses

Past research (e.g., Milin et al., 2000; Musser et al., 2001; Salend et al., 1992; Svedin & Wadsby, 2000) indicates that behaviorally-based interventions improve children's overall functioning in areas such as behavior towards others. However, research indicates that behaviorally-based programs do not influence cognitive functioning. The current study investigated the following hypotheses: (a) children attending Youth Day Treatment for at least six months will show changes in total functioning as noted by scores on the CAFAS total score, (b) children attending Youth Day Treatment (YDT) for at least six months will show changes in behavioral functioning as noted by scores on the CAFAS behavior towards other and self harm subscales, (c) children attending Youth Day Treatment for at least six months will show changes in social role functioning as noted by scores on the CAFAS school subscale, CAFAS home subscale, and CAFAS community subscale, and (d) children attending Youth Day Treatment for at least six months will not show changes in cognitive functioning as noted by scores on the CAFAS thinking and mood subscales.

Research indicates that specific demographic characteristics such as gender (e.g., Romano et al. 2001; Stinnett et al. 1999) and age (Zill & Shoenborn, 1990) may be related to the type and severity of symptoms and functional impairment of children with SED. Therefore, children with different demographic and personal characteristics should have different initial CAFAS scores. The current study examined the following hypotheses: (a) there will be differences in initial overall functioning between males and females as noted by baseline total CAFAS scores, (b) there will be differences in initial behavioral functioning between males and females as noted by baseline scores on the behavior towards others and self harm subscales (c) there will be differences in initial social role functioning between males and females as noted by baseline school, community, and home subscale scores, and (d) there will be differences in initial cognitive functioning between boys and girls as noted by baseline thinking and moods and emotions subscale scores. In addition, the current study evaluated the following hypotheses: (a) age is related to initial functional impairment as noted by baseline total CAFAS scores, (b) age is related to behavioral functioning as noted by baseline behavior towards others and self harm subscale scores, (c) age is related to social role functioning as indicated by baseline home, school, and community subscale scores, (d) age is related to cognitive functioning as noted by baseline thinking and moods and emotions subscale scores.

Children begin treatment with different levels of impairment; however, some research exists that demonstrates that males and females show equal levels of improvement in functioning after beginning treatment (Walrath et al., 2001). The current

study investigated the following hypotheses: (a) gender will not influence changes in a child's overall functioning as indicated by total CAFAS score, (b) gender will not influence changes in a child's behavioral functioning as indicated by behavior towards others and self harm subscale scores, (c) gender will not influence changes in a child's social role functioning as indicated by CAFAS school, community, or home subscale scores (d) gender will not influence changes in a child's cognitive functioning as indicated by thinking and moods subscale scores.

In addition, the current study examined whether additional characteristics are related to improvements in functioning. Specifically, does taking medication, age, primary diagnosis, or gender increase the likelihood of changes in behavioral, social role, or cognitive functioning? Current research such as Pelham et al. (2000) indicates that medication in conjunction with behavioral treatment has a slight influence on changes in behavioral functioning. Currently it is unclear whether these changes are true for cognitive functioning. Therefore, the current study investigated the following hypotheses: (a) taking medication will influence changes in a child's overall functioning as indicated by total CAFAS score, (b) taking medication will influence changes in a child's overall behavioral functioning as indicated by behavior towards others and self harm subscale scores, (c) taking medication will influence changes in a child's social role functioning as indicated by school, community, and home subscale scores (d) taking medication will influence changes in a child's cognitive functioning as indicated by thinking and moods and emotions subscale scores.

Research indicates that specific types of diagnoses and comorbidity may influence changes in functioning. Therefore, the current study examined the following hypotheses: (a) primary diagnosis will influence changes in a child's overall functioning as indicated by total CAFAS score, (b) primary diagnosis will influence changes in a child's behavioral functioning as indicated by behavior towards others and self harm subscale scores, (b) primary diagnosis will influence changes in a child's social role functioning as indicated by CAFAS school, community, and home subscale scores (c) primary diagnosis will influence changes in a child's cognitive functioning as indicated by the thinking and moods and emotions subscale scores. In addition, (a) comorbidity will influence changes in a child's overall functioning as indicated by total CAFAS score, (b) comorbidity will influence changes in a child's behavioral functioning as indicated by behavior towards others and self harm subscale scores, (b) comorbidity will influence changes in a child's social role functioning as indicated by the school, community, and home subscale scores (c) comorbidity will influence changes in a child's cognitive functioning as indicated by the CAFAS thinking and moods and emotions subscale scores.

Chapter Summary

In summary, children with SED face numerous challenges. First there are challenges such as not receiving appropriate services, that are exacerbated by the difficulty identifying children as SED. Next, there are the emotional, social, academic, and behavioral difficulties experienced by these children. Finally, there are challenges such as the difficulty negotiating services and the rising financial costs faced by those who care for children with SED.

A popular treatment for children with SED is to employ a behaviorally-based intervention. Behaviorally-based interventions have a history of success with these children. However, it is important to test whether specific programs, such as YDT achieve desired outcomes. Specifically, the current study tests whether children attending YDT increase functioning after attending for at least six months.

Chapter three explains the method used to examine the research hypotheses and describes the program, YDT in detail. In addition, Chapter three reviews the statistical analyses conducted and rationale.

CHAPTER 3

Research Study Design

The current study is evaluation research. The researcher used a longitudinal design to answer the research questions and evaluate the research hypotheses. Specifically, the researcher examined Child and Adolescent Functional Assessment scores (CAFAS, Hodges, 1994) for a sample of children ($N = 101$) who have attended or are currently attending Youth Day Treatment (YDT) in Richmond, Virginia. This section describes the research methods; specifically this section describes the sampling procedure, the intervention, and variables (independent and dependent) in the evaluation. The statistical analyses conducted and procedures to protect human subjects are detailed.

It is important to preface this section with a comment about evaluation research. Rossi and Freeman (1985) define evaluation research as, “. . .the systematic application of social research procedures in assessing the conceptualization and design, implementation, and utility of social intervention programs” (p. 19). Evaluation research is a type of applied research (Monette, Sullivan, & DeJong, 2002) because results are meant to be used to change specific aspects of a program. However, an important distinction is that evaluation research is cognizant of the political and institutional context in which the evaluation occurs (Kettner, Moroney, & Martin, 1999; Rossi & Freeman); thus, evaluation research is driven by the needs of the funders and the host organization.

There are different types of program evaluations; however, most may be categorized as either formative or summative (Rubin & Babbie, 2002). According to Rubin & Babbie, formative evaluations are those that answer questions concerning the program processes (i.e., is the program reaching its desired consumers, is the program implemented as planned?). In contrast, summative evaluations are those that answer questions concerning the success of the program (i.e., are program outcomes consistent with program goals and desired results, should the program be continued?) The current evaluation was summative because it examined whether program outcomes were consistent with predetermined outcomes, goals, and objectives.

In the current study, the author had to consider the host organization's structure and philosophy when selecting the study's design, measurement tool, and sampling approach. In addition, the current study was guided by the funding agency's specific questions. Thus, funders' questions and needs were important in the current research.

The Intervention: Youth Day Treatment

The Youth Day Treatment program was developed to assist youth and their families with the unique needs arising from the range of social, emotional, and behavioral disturbances associated with serious emotional disorders (SED). The program is based on a day treatment model of service delivery. A day treatment model as defined by Kaplan and Sadock (1998), involves peers of similar ages spending time in therapeutic activities. Day treatment provides positive experiences and a structure to help children and their families internalize controls and improve individual and family functioning as well as increasing positive interactions with the outside world (Kaplan & Sadock).

YDT began in 1991 as one of 3 day treatment programs operated by the public mental health center in Richmond, Virginia. The specific goals of the program are to (1) increase the frequency of children's positive behaviors at home, school and in the community, (2) reduce the number of inpatient psychiatric hospitalizations for youth participating in YDT, and (3) increase the abilities of parents' and guardians' to understand and positively cope with behaviors resulting from SED (summary of YDT mission and goals sheet). YDT monitors the first goal by administering the Child and Adolescent Functional Assessment Scale (CAFAS; Hodges, 1994) to all children and by daily behavior logs recorded by YDT staff members. Unfortunately, the program does not have an established method to monitor its other goals.

YDT operates year-round. During the school year, the program is open Monday through Friday as a therapeutic after-school program. After completing the school day at Richmond Public Schools, school buses transport children to the day treatment program where they remain until 6:00 PM. After program hours, Richmond City school buses transport the children home. During the summer, the program operates Monday through Thursday with youth attending YDT from 9:00 AM until 2:00 PM. Similar to the school year, school buses transport children to the program and then home again.

YDT is staffed by a masters-level program supervisor, a masters-level social worker, Bachelors-level group leaders, and 10 part-time support staff. All staff members have CPR certification and are trained in the Mandt restraint behavior de-escalation system (www.mandtsystem.com). The Mandt system, developed in 1975, is a method that, "teaches the use of a graded system of alternatives which uses the least amount of

external management necessary in all situations” (Mandt Philosophy found at www.mandtsystem.com). Four staff members are certified by the state of Virginia to store and administer medications to clients. In addition, YDT staff members attend monthly mandatory in-service trainings that cover topics such as understanding mental illness in children, therapeutic behavior management, and administering the CAFAS (Hodges, 1994).

To be eligible for services children must be between the ages of 5 and 13 or the maturational equivalent, meet DSM-IV TR (APA, 2000) criteria for mental illness or be deemed at risk-for a diagnosis of SEDist, have an intelligence quotient of 70 or above, be Medicaid-eligible, and attend public school. The minimum cognitive functioning requirement assumes that each child is able to recognize differences between appropriate and inappropriate behaviors, understand cause and effect relationships, and examine the risks and the benefits of engaging in positive social behaviors. The public school requirement is important because it guarantees that children will be eligible for transportation to and from the YDT program.

The most common referral sources are the local public mental health system and teachers in the public school system. Upon receiving a referral, the group leader contacts the parent or legal guardian to ensure that the prospective client meets program criteria. If criteria are met, the group leader meets with the child and his or her parent or legal guardian to explain the program, conduct an assessment, and discuss program rules. In addition, the group leader administers the CAFAS (Hodges, 1994) to the child for the first time.

Children are allowed to begin YDT if the YDT staff member conducting the interview determines that the child satisfies all program criteria. Further, the parent or legal guardian must complete all necessary paperwork (e.g., assessment forms, emergency contact, consent for treatment) and sign a contract agreeing to abide by program rules (e.g., attendance policy).

Once admitted to YDT, children complete a six-week orientation period to evaluate the child's ability to become integrated into the group environment. During the orientation phase, children participate in all regular group activities but receive extra attention from staff members. In order to facilitate the group cohesion process, staff members encourage current participants to teach new clients about group rules, responsibilities and consequences.

YDT has several components that children participate in while grouped in age-specific groups (5 to 6, 7 to 8, 9 to 10, and 11 to 13 year olds). These components include social skills education, structured free play and trips, a behavioral reward system (Points and Prize Times), and a therapeutic process group. Further, YDT also has activities for parents such as a parenting group, parenting seminars, and special dinners.

Social skills education is an intervention that teaches children the interpersonal skills and behaviors needed to interact appropriately with others, complete tasks, and solve problems (Moote, Smyth, Wodarski, 1999). There are numerous social skills education programs available. However, social skills education at YDT is based on the Prepare curriculum (Goldstein, 1999). The Prepare curriculum is an interactive set of age-level specific courses designed to promote positive psychological, emotional, and

behavioral skills in children and adolescents. The Prepare curriculum begins by teaching children basic social skills such as listening and introducing yourself and progresses to more complex skills such as making friends and accepting “no.” All of the skills are designed to build on one another and increase children’s ability to think critically about life situations.

YDT uses a social skills manual that corresponds with the Prepare curriculum. This manual (McGinnis & Goldstein, 1999) provides group leaders with descriptions of the social skills, instructions on teaching the social skills to children, forms to monitor and evaluate the children’s progress, and suggestions for interactive activities that reinforce the skills.

Group leaders select one social skill per week. The group leaders use interactive methods such as role-playing and art to teach the skills to children. For each skill, YDT clients learn about the skill, why it is important, the steps necessary to use the skill, and the appropriate times and situations that the skill should be applied. Children spend approximately five hours each week in direct social skills education.

At the end of each week, children demonstrate skill mastery by completing an age-appropriate social skills test created by group leaders. Older children ages 9 to 13 write all of the steps of the social skill and then provide instances when the skill should be used. Children ages eight and younger draw the steps of the skill, and then explain the steps to group leaders. Children passing the test on the first try receive points which they may redeem for a small prize or save for a larger prize.

YDT staff members believe that play is an important socialization activity for children. Periods of structured free play provide opportunities for children and youth to demonstrate their understanding of social skills and their ability to apply these skills while having fun with their peers. Therapeutic games such as the Un-game (Un-game home page) and the Good Behavior Game (Barrish, Saunders, & Wolf, 1969) along with a variety of popular children's games and puzzles are used in structured play activities supervised by the group leaders. Children negotiate tasks, settle disputes, and engage their creative talents in accomplishing goals. According to one group leader, "Watching children play in this therapeutic setting exposes children's knowledge of social skills" (staff member personal communication, 2002). Structured free play provides an opportunity for students to engage in win-lose situations and apply skills to effectively handle these experiences. Children spend approximately 7 to 10 hours per week engaged in these activities.

Points and prize time is a behavioral approach for rewarding children who demonstrate situation-appropriate behaviors on a daily basis. Each child begins the day with 100 points. The goal is to maintain as many points as possible by engaging in positive behaviors toward peers and staff. Group leaders monitor the children's behaviors and subtract a specified predetermined number of points when children engage in negative behaviors. At the end of the defined period (day, week or month) participants redeem points for prizes based on their average behavior scores for the period. The average behavior points and the length of time that a youth maintains the score results in the type of prize the client may earn. Clients demonstrating high daily scores may choose

prizes such as pencils or candy bars. High weekly scores result in a choice of prizes such as a trip to a park or movie theater. Monthly point prizes include group trips to restaurants, an amusement park, or a visit to a toy store where participants choose two or more toys as rewards.

Each week YDT clients spend one and one-half hours in a therapeutic process group facilitated by a masters level clinician. The therapeutic group provides a safe environment for children to identify and articulate their feelings and emotions. Therapeutic activities include visual and performing arts and games; these facilitate self-expression and self awareness.

The therapeutic group operates based on a combination of strengths perspective (Saleeby, 1996), empowerment theory (Gutierrez, 1990; Solomon, 1976), and behavioral theory (Skinner, 1938; Thomlison. & Thomlison, 1996). Empowerment theory and the strengths perspective are complementary to each other. Empowerment and behavioral theories propose a method for change and the strengths perspective provides a set of assumptions that support the mechanisms used for change.

Therapeutic group activities differ based on the children's age. Younger children ages 5 to 8 participate in activities that emphasize concrete concepts and discuss how they react and feel about situations. Older children ages 9 to 13 participate in activities emphasizing abstract and concrete concepts and discussions focusing on the youth's reactions and feelings about situations. Group participants develop their own group rules and the older children suggest topics for future groups. Further, the older children participate in retreats that help to build confidentiality and trust among participants.

The program supervisor facilitates a bi-monthly psychoeducational group for parents. The group provides an opportunity for attendees to network with other parents and receive educational information on topics such as psychotropic medications, community services, and childhood mental illnesses. The program staff provides dinner, childcare, and transportation to and from the meeting.

Evaluation Design

The researcher used a modified time series longitudinal design to conduct the study. The design is a modified time series design because, unlike the time series design described by Campbell and Stanley (1963) and reviewed by Rubin and Babbie (2001), there is only one baseline reading. Consequently, the current study's design did not permit the researcher to examine if or how client functioning levels changed before the intervention began.

Internal validity

The design is quasi-experimental because a time series design was used. True experimental designs have at least two groups, an experimental group and a control group; the researcher manipulates the independent variable(s) in the intervention group to provide control for threats to internal validity (Campbell & Stanley, 1963; Rubin & Babbie, 2001). The current study design included only an intervention group. Thus, the researcher's ability to control for threats to internal validity was reduced.

Strengths of design

As mentioned above, the study design has limitations. However, this design has several advantages and was appropriate for use in this study. First, multiple posttest

periods allowed the researcher to detect changes in the dependent variable (CAFAS scores) during the intervention. The more posttests a researcher examines, the longer period of time the researcher is able to examine and compare participants' functioning levels to baseline functioning levels.

Another advantage exists because the researcher had limited control over the study conditions. A benefit of this is that the study conditions are similar to "real life" treatment programs. This evaluation design can be easily replicated in other treatment programs.

Finally, the research design was advantageous and feasible because it was incorporated into the preexisting agency structure. The agency already collected CAFAS scores for clients; thus, the research design did not force agency personnel to deviate from normal clinical practices. Client records were not kept at the day treatment facility; however, records were located in the agency's main office and were accessible to the researcher.

Sampling and Participant Recruitment

The researcher used a nonprobability convenience (availability) sample to select study participants ($N = 101$). The researcher asked the parent or legal guardian for all children in the sampling frame to participate in the study. The study was approved by Virginia Commonwealth University's Institutional Review Board (IRB). Once the informed consent process was introduced and discussed with each child's parent or legal guardian and the informed consent for study participation was granted, the researcher

located the client's confidential file and recorded all necessary data elements in the study database.

The sampling frame was the list of children 5 to 13 years of age who attended YDT for at least six consecutive months from 2000 to 2002 ($N = 260$). Children attending YDT for at least six months had at least three Child and Adolescent Functioning Assessment (CAFAS) scores, a baseline, three-month and six-month score. The researcher assembled the sampling frame by reviewing attendance sheets from the past three years and then compiling a list of those cases that had attended for at least six consecutive months. The number eligible for the study ($N = 260$) represents 90% of the total children served by YDT from 1999 to 2002 ($N = 300$).

The researcher was able to contact 114 clients. The majority of clients asked to participate in the study agreed ($N = 113$) and submitted a signed informed consent for study participation to the researcher. The only parent who did not consent to study participation did so because "they did not feel comfortable doing any studies" (personal communication, 2002). After data cleaning, the final sample contained 101 cases.

The desired sample size of 100 was selected for several reasons. First, the researcher considered the level of statistical power needed to detect actual differences and reduce the probability of committing a Type II error. The test of statistical power table (Cohen, 1988) indicated that at the .05 level of statistical significance, there was a .14 probability of committing a Type II error for a sample size of 100 participants. This degree of statistical power assumes a medium effect size. In order to further decrease the chance of a Type II error, the sample size would have to be increased. However, after

examining the feasibility of increasing the sample size, the researcher determined that 100 was the realistic number of participants that the researcher could locate and ask for their consent to participate in the evaluation. Some previous YDT participants have moved or were inaccessible to the researcher. Thus, a sample of 100 children was feasible and increased the probability that the researcher would complete the study in a timely manner.

Intervention/Treatment Fidelity

When evaluating an intervention, it is important to determine whether the intervention is administered similarly and consistently to each member of its targeted population. This is referred to as intervention or treatment fidelity and assures that clients receive the same intervention [National Institutes of Health (NIH) Treatment Fidelity Workgroup, 2002]. The NIH Treatment Fidelity Workgroup is concerned with “methods to ensure that the treatment is delivered as intended; measures of treatment adherence; prevention of treatment contamination; standardization of intervention delivery across different providers.”

The researcher was attentive to intervention fidelity in several ways. First, the researcher selected a time period in which there is documentation about the day treatment program processes. The day treatment group leaders keep detailed notes documenting group activities for the week. These notes are valuable for ensuring treatment fidelity because these provide documentation of day treatment activities and the time required to complete activities. A comparison of notes verified that day treatment activities were consistent for the selected three-year time period. Next, there were limited staff changes

during the three-year time period; two out of six current group leaders were present when the first day treatment facilities opened in 1991 and four out of six have worked at YDT for at least six or more years. These employees provide an important oral and written history for the YDT program and can verify the consistency of the intervention over the three-year time period.

Evaluation Variables

Archival data from the client records were used in the evaluation. Independent variables include the client's age in years, whether the child takes medications, diagnoses, other services received, gender, and the amount of time in the day treatment program. Race is not included as a variable because Youth Day Treatment serves predominately African American clients.

The dependent variable is client functioning and is operationalized by the Child and Adolescent Functional Assessment Scale (CAFAS; Hodges, 1994). The CAFAS is a multi-scaled tool that measures the behavioral, emotional, and social functioning of youth between 6 and 17 years of age. The scales of interest to this evaluation are: school, home, community, behavior towards others, moods and emotions, self-harm, and thinking. The substance abuse subscale is not of interest to this study because YDT does not provide substance abuse services and is unable to accept children with substance abuse problems. However, for this study, the substance abuse subscale was used when computing the total CAFAS score.

All of the subscales are scored and summed to create a total functioning level score. The possible range of the total score is 0 to 240. Lower scores indicate higher

levels of functioning. The CAFAS has two additional sub-scales, a material needs sub scale where service providers may document if the client has his or her basic needs met and a caregiver scale that identifies the caregiver's functioning level. The caregiver and material needs scales were not used in this evaluation because the agency does not collect data on these scales.

Psychometric Properties

Hodges and Wong (1996) tested the interrater reliability of the CAFAS using a sample ($N = 54$) of masters and bachelor level students and agency personnel. The researchers presented each participant with 20 vignettes and asked them to evaluate and establish a CAFAS score for each. Data from participants were compared with criterion scores developed by the researchers and a board-certified child psychiatrist. Interrater agreement was high with correlations between group scores and criterion scores ranging from .83 to .93 for the behavior toward others subscale and .74 to .94 for the moods and emotions subscale of the CAFAS.

Hodges and Wong (1996) and Hodges and Kim (2000) reported evaluation of the criterion validity (concurrent and predictive) of the CAFAS. Hodges and Wong used data from the Ft. Bragg Demonstration Evaluation to evaluate the concurrent validity of the CAFAS. The Ft. Bragg Demonstration Evaluation was a longitudinal study of the mental health functioning of those referred for mental health services. For this study, researchers used data collected at four six-month intervals ($n = 984, n = 780, n = 617, n = 373$). Hodges and Wong compared scores on the CAFAS to scores on four other measures. The researchers hypothesized that CAFAS scores would be positively correlated with scores

on four measures, the Child Assessment Schedule (CAS, Hodges, Kline, Stern, Cytryn, & McKnew, 1982), the parallel parent's version of the CAS (PCAS), the Child Behavior Checklist (Achenbach, 1991), and the Burden of Care Questionnaire.

Hodges and Wong's (1996) hypothesis that CAFAS scores would be positively correlated with scores on four other instruments was upheld. The CBCL was correlated with the CAFAS during all four time periods ($r = .42, p < .001$; $r = .49, p < .001$; $r = .48, p < .001$; $r = .47, p < .001$, respectively). The PCAS was correlated with the CAFAS during all four time periods ($r = .59, p < .001$; $r = .62, p < .001$; $r = .58, p < .001$; $r = .63, p < .001$, respectively). The CAS was correlated with the CAFAS during all four time periods ($r = .54, p < .001$; $r = .56, p < .001$; $r = .55, p < .001$; $r = .52, p < .001$, respectively). Finally, the BCQ was correlated with the CAFAS during all four time periods ($r = .36, p < .001$; $r = .42, p < .001$; $r = .43, p < .001$; $r = .42, p < .001$, respectively).

In two other studies, Hodges and Kim (2000) and Quist and Matashazi (2000) evaluated the predictive validity of the CAFAS. An instrument with high predictive validity has the ability to predict which subjects will display a specific future trait (Rubin & Babbie, 2001). Hodges and Kim investigated whether CAFAS scores could predict youth involvement with the criminal justice system ($N = 1,460$) and days absent from school ($N = 1,552$) six months after mental health intake. Hodges and Kim used data from a national evaluation of children's mental health services. The researchers used the data and constructed logistic regression models that calculated the odds of children having contact with the criminal justice system or missing school. They determined that

the odds of children being involved with the criminal justice system increased by 1% for each point increase in total CAFAS score. Additionally, the number of school days missed increased by 0.6% for each point increase in total CAFAS score.

In a similar study, Quist and Matshazi (2000) investigated whether the CAFAS could predict juvenile recidivism ($N = 35$). Researchers administered the CAFAS to an availability sample of youth from a juvenile rehabilitation group home. Regression analysis indicated that the total CAFAS score (8 subscales) was related to recidivism ($r = .46, p < .01$).

Hodges and Wong (1996) demonstrated the discriminate validity of the CAFAS by evaluating whether the CAFAS could discriminate between three groups of mental health consumers (inpatient, alternative, outpatient). The researchers hypothesized that inpatient consumers would have the highest CAFAS scores and outpatient consumers would have the lowest across all four time periods. Analyses of Variance tests indicated that consumers receiving inpatient care had the highest CAFAS scores, consumers receiving outpatient care had the lowest CAFAS scores for data recorded during the first three time periods [Time 1 $F(2,976) = 67.10, p < .001$; time 2 $F(2,774) = 14.58, p < .001$; time 3 $F(2,610) = 9.05, p < .001$]. These results were not upheld for the fourth time period. The researchers hypothesized that this was due to problems associated with attrition.

Hodges and Wong (1996) tested the construct validity of the CAFAS. Construct validity is validity at the theoretical level and is possible yet difficult to test (Rubin & Babbie, 2001). Hodges and Wong tested the construct validity by examining whether

CAFAS scores were correlated with specific behaviors on the Child Behavior Checklist (Achenbach, 1991). After examining the indicators, the researchers concluded that the CAFAS demonstrated good construct validity.

According to Hodges (1999), the instrument has good face validity. Face validity examines whether the instrument appears to measure what it is suppose to measure (Rubin & Babbie, 2001). Hodges commented that the items on the CAFAS can be translated into specific behaviors that denote negative functioning. Thus, the CAFAS appears to measure the existence of negative functioning.

Use of the CAFAS

The CAFAS has been used in a variety of research studies with diverse populations. First, researchers have used the CAFAS as a tool to classify child and youth mental health consumers served by specific programs (Hodges & Wotring, 2000; Liao, Mantuffel, Paulic, & Sondheimer, 2001; Walrath, Sharp, Zuber, & Lkeaf, 2001). In these studies CAFAS scores evaluated the average functioning level of children at home, school, and in the community.

Next, researchers have used the CAFAS to examine client functioning after exposure to specific interventions (e.g., Abrahamson & Tyda, 1999; Kiser, Millsap, Hickerson, Heston, Nunn, Pruitt, & Rohr, 1996; Russell, Anderson, Kooreman, Wright, & Warner, 2000; SAMHSA, 1999; Walrath, Mandell, & Leaf, 2001). These studies evaluated specific interventions for children by comparing a baseline CAFAS score with one or several posttest CAFAS scores.

Additionally, the CAFAS has been used to validate other instruments. For example, Casat, Norton, and Boyle-Whitesel (1999) used the CAFAS to examine the validity of a combined method to identify children with at high risk for externalizing behaviors. Studies such as these assist in the development of new instruments to measure SED in children.

According to Hodges (1999), the CAFAS has numerous practical applications in work with children with SED. For instance, Bates (2001) determined that approximately 30 states receiving federal funding (e.g., Virginia, Florida, Kentucky) use the CAFAS as part of their children's mental health treatment process. Specifically, states may use the CAFAS to (a) determine the level of services required by children with SED (e.g., Virginia, North Carolina) (b) determine the success of clinical interventions (e.g., Maryland, North Dakota, and Virginia), or (c) determine eligibility for services.)

Individual human service providers may use the CAFAS to assist with treatment planning (Hodges, 1999). CAFAS scores identify where problems occur and quantify problem severity. Service providers may use this information to design and implement interventions which target these areas. In addition, understanding problem severity helps service providers when deciding which problems to address first.

The CAFAS can also help service providers diagnose previously undetected comorbidity in children (Hodges, 1999). CAFAS scores provide a profile of child functioning across multiple domains. According to Hodges, specific CAFAS profiles denote specific patterns of comorbidity. Recognizing these patterns is important and may be the first step in diagnosing and treating previously undetected comorbidity in children.

Finally, the CAFAS provides an organized way to share information on child functioning with the child and child's family (Hodges, 1999). Case managers working with families may use the framework of the CAFAS to engage in conversations that will help the family learn about the child's functioning. The language on the CAFAS is easy to use and the form is organized because similar behaviors are grouped together.

Limitations of the CAFAS

Although there are numerous advantages to the CAFAS, there are potential problems or limitations with its use (Hodges, 1999). First, the CAFAS is a subjective rating instrument. Thus, even trained persons administering the CAFAS have the potential to bias the results. Next, the CAFAS is meant to detect changes over long periods of time (e.g., 3 months). Researchers desiring to assess change over short periods of time (e.g., 2 weeks) should not use the CAFAS (Hodges).

Finally, there are questions regarding the ease of use of the CAFAS and training for those who administer it (Bates, 1999). Hodges (1999) estimates that it takes approximately 10 minutes to complete when the person administering the CAFAS is familiar with the child. Bates believes that the actual time that it takes to administer the CAFAS is greater than 10 minutes and the number of items is burdensome to some human service providers.

Use of CAFAS in the YDT Evaluation

The CAFAS was used as the measurement tool in this evaluation for several reasons. First, the CAFAS is a well-researched evaluation tool with over ten years of data that demonstrates its validity and reliability (Hodges 1990). YDT currently uses the

CAFAS as a part of its regular intake and termination processes. Thus, staff members were knowledgeable about the CAFAS and trained to administer it. Finally, the CAFAS scores were easy to read and interpret. The data are ratio level; thus, easy to mathematically manipulate for analysis. Table 1 provides a summary of studies using the CAFAS as the measurement instrument.

Table 1: Summary of Studies Using the CAFAS

Study	Goals	Design	Sample	Results
Abrahamson & Tyda (1999)	Determine if children showed decreases in problem behaviors and increases in functioning after treatment	Longitudinal survey	<i>N</i> = 58 Age <i>M</i> = 9.4	Mean problem behavior score decreased. CAFAS scores decreased an average of 14 points
Altaffer (2000)	Use Life Table Analysis to analyze and predict length of stay and cost using CAFAS scores	Survey	<i>N</i> = 278	CAFAS score, admission discharge dates in a Life Table Analysis produced useful chart in which length of stay and cost may be predicted
Andrae, Lambert, & Bickman (2000)	Determine amount of psychotherapeutic treatment influenced treatment outcome	Survey	<i>N</i> = 568; age range 7-17 years; <i>M</i> = 11.0; male (62%); white, non-Hispanic (71%)	Children receiving high amounts of treatment showed no better mental health outcomes than those receiving negligible treatment.
Casat, Norton, & Boyle-Whitesel (1999)	Examine validity of combining 2 instruments (IOWA and CASQ) to identify students at high-risk for externalizing behaviors	Survey	<i>N</i> = 441; 235 boys, 206 girls; Age <i>M</i> = 8.3; African American (48.0%) white, non-Hispanic (49.1%)	Using the IOWA in conjunction with the CASQ was appropriate for identifying children at high-risk for externalizing behaviors.

Study	Goals	Design	Sample	Results
Hodges, Doucette-Gates, & Kim (1999)	Use CAFAS scores to predict the number of out-of-home care and the restrictiveness of environment during the six months following intake	Level of restrictiveness study - Survey Out-of-home care study-Survey	Level of Restrictiveness Study <i>N</i> = 1850; Out of Home Care Study <i>N</i> = 905	CAFAS shown as predictor of level of restrictiveness and out of home care
Kiser, Millsap, Hickerson, Heston, Nunn, Pruitt, & Rohr (1996)	Determine outcome of clients who participated in a partial hospitalization program	Non-experimental pre/post test design	<i>N</i> = 114; Caucasian (70%), African American (30%); male (63%), female (37%); SED (100%)	Sample showed significant improvement in functioning
Liao, Manteuffel, Paulic, & Sondheimer (2001)	Examine the characteristics of children served in systems of care	Non experimental	<i>N</i> = 3,281 mostly male and white, non-Hispanic	Cluster analysis revealed 6 clusters (3 for boys and 3 for girls) grouping clients on level of functioning
Phillips (2000)	To determine the degree to which scores on the CBCL were associated with scores on the CAFAS		<i>N</i> = 121 White, non-Hispanic (57%), African American (22%), Hispanic (10%), Multiracial (11%)	The total score for the CAFAS and CBCL had a moderate positive correlation.
Russell, Anderson, Kooreman, Wright, &	To evaluate the effectiveness of a	Longitudinal	<i>N</i> = 76 Mean age = 13.0	Clients Total CAFAS scores decreased from baseline to six

Study	Goals	Design	Sample	Results
Warner (2000)	children's mental health program		70% male; 70% persons of color	months indicating an increase in total functioning level.
Walrath, Sharp, Zuber, & Leaf (2001)	To examine how children in different systems of care differed	Survey	<i>N</i> = 696 Predominately urban minority sample	Children referred from the Department of Juvenile Justice were significantly more impaired than children referred from the Department of Social Services.

Statistical Analysis

The researcher used descriptive statistics to describe the sample. Examples include determining the mean, median, and mode for variables. In addition, the researcher used three statistical tests or variations of tests (Analysis of Variance (ANOVA), linear regression analysis, and the Student's *t*-test) to examine the research hypotheses and answer the evaluation questions.

The research hypotheses can be categorized and divided into three types. The first type of hypothesis used One-Way ANOVA and the Student's *t*-test to examine groups and determine if statistically significant ($\alpha = .05$) differences existed between groups. Examples of these hypotheses include hypotheses one through four.

The next type of hypothesis used linear regression analysis to determine if there were statistically significant ($\alpha = .05$) relationships between variables. Specifically, these hypotheses investigated whether variable A was related to variable B. Examples of these hypotheses include hypotheses five through eight.

The third type of hypothesis used a combination of repeated measures ANOVA designs to determine if statistically significant ($\alpha = .05$) differences existed between groups (e.g., male and female), over time (times one through four), and if there was an interaction between groups and over time. Specifically, these hypotheses tested whether those participating in the intervention changed over time and whether there were variables that maintained specific differences over time. Examples of these hypotheses include hypotheses 9 through 28.

Appropriateness of statistical tests

Inferential tests such as the ones mentioned above should be used with data that meet certain assumptions (Healey, 1999). Samples should be independent and random and measured at the interval-ratio level. In addition, the population from which samples are drawn should be normally distributed and have equal variances. Repeated measures ANOVA designs require data to fit additional criteria, the assumption of sphericity.

The current data violate some of these assumptions; data were not collected using probability sampling methods and in some instances, data do not meet the assumption of sphericity. However, despite these violations, the inferential statistics selected are appropriate for use in this study. ANOVA and the Student's *t*-test are appropriate because they are robust. Specifically, these tests are tolerant of some violations of its assumptions for use (Healey, 1999; Newton & Rudestam, 1999).

Again, the most appropriate statistical analysis to test the hypotheses is a nonparametric test. However, the researcher has decided to use a parametric test, the Student's *t*-test. ANOVA is an extension of the Student's *t*-test; the procedures, assumptions, and robustness of the tests are similar. However, the *t*-test examines the impact of one independent variable with two groups (in this case, gender) on the dependent variable, whereas ANOVA examines the impact of one independent variable with more than two groups on the dependent variable.

The researcher was interested in understanding if characteristics such as taking medication, age (young vs. older), primary diagnosis (ADHD, depression, conduct disorder, etc.), or gender, increased the likelihood of changes in behavioral, social role, or

cognitive functioning. The above hypotheses investigated differences between groups over time. The researcher used a repeated ANOVA test to examine differences between groups across time. This is also referred to as a mixed between-within subjects ANOVA (Tabachnick & Fidell, 2001). Table 2 summarizes the current study's research hypotheses.

Table 2: Summary of Research Hypotheses

Hypothesis	Statistical Test
<u>Hypothesis I</u> : There will be differences in initial overall functioning between males and females as noted by baseline total CAFAS scores.	Student's <i>t</i> -test
<u>Hypothesis II</u> : There will be differences in initial behavioral functioning between males and females as noted by baseline scores on the behavior toward others and self-harm subscales.	Student's <i>t</i> -test
<u>Hypothesis III</u> : There will be differences in initial social role functioning between males and females as noted by baseline school, community, and home subscale scores.	Student's <i>t</i> -test
<u>Hypothesis IV</u> : There will be differences in initial cognitive functioning between males and females as noted by baseline thinking and moods and emotions subscale scores.	Student's <i>t</i> -test
<u>Hypothesis V</u> : Age is related to initial functional impairment as noted by baseline total CAFAS scores.	Linear Regression

<p><u>Hypothesis VI</u>: Age is related to initial behavioral functioning as noted by baseline behavior toward others and self-harm subscale scores.</p>	<p>Linear Regression</p>
<p><u>Hypothesis VII</u>: Age is related to initial social role functioning as indicated by baseline home, school, and community subscale scores.</p>	<p>Linear Regression</p>
<p><u>Hypothesis VIII</u>: Age is related to initial cognitive functioning as noted by baseline thinking and moods and emotions subscale scores.</p>	<p>Linear Regression</p>
<p><u>Hypothesis IX</u>: Children attending Youth Day Treatment for at least six months will show changes in total functioning as noted by scores on the CAFAS total score.</p>	<p>Repeated Measures ANOVA</p>
<p><u>Hypothesis X</u>: Children attending Youth Day Treatment for at least six months will show changes in behavioral functioning as noted by scores on the CAFAS behavior toward others and self-harm subscales.</p>	<p>Repeated Measures ANOVA</p>
<p><u>Hypothesis XI</u>: Children attending Youth Day Treatment</p>	<p>Repeated Measures</p>

<p>for at least six months will show changes in social role functioning as noted by scores on the school, home, and community subscales.</p>	<p>ANOVA</p>
<p><u>Hypothesis XII</u>: Children attending Youth Day Treatment for at least six months will not show changes in cognitive functioning as noted by scores on the CAFAS thinking and mood subscales.</p>	<p>Repeated Measures ANOVA</p>
<p><u>Hypothesis XIII</u>: Gender will not influence changes in a child's overall functioning as indicated by total CAFAS score.</p>	<p>Repeated Measures ANOVA</p>
<p><u>Hypothesis XIV</u>: Gender will not influence changes in a child's behavioral functioning as indicted by behavior toward others and self-harm subscale scores.</p>	<p>Repeated Measures ANOVA</p>
<p><u>Hypothesis XV</u>: Gender will not influence changes in a child's social role functioning as indicated by CAFAS school, home, or community subscale scores.</p>	<p>Repeated Measures ANOVA</p>

<p><u>Hypothesis XVI</u>: Gender will not influence changes in a child's cognitive functioning as indicated by thinking and moods subscale scores.</p>	<p>Repeated Measures ANOVA</p>
<p><u>Hypothesis XVII</u>: Taking medication will influence changes in a child's overall functioning as indicated by total CAFAS score.</p>	<p>Repeated Measures ANOVA</p>
<p><u>Hypothesis XVIII</u>: Taking medication will influence changes in a child's overall behavioral functioning as indicated by behavior toward others and self-harm subscale scores.</p>	<p>Repeated Measures ANOVA</p>
<p><u>Hypothesis XIX</u>: Taking medication will influence changes in a child's social role functioning as indicated by school, home, and community subscale scores.</p>	<p>Repeated Measures ANOVA</p>
<p><u>Hypothesis XX</u>: Taking medication will influence changes in a child's cognitive functioning as indicated by thinking and moods and emotions subscale scores.</p>	<p>Repeated Measures ANOVA</p>
<p><u>Hypothesis XXI</u>: Primary diagnosis will influence changes</p>	<p>Repeated Measures</p>

<p>in a child's overall functioning as indicated by total CAFAS score.</p>	<p>ANOVA</p>
<p><u>Hypothesis XXII</u>: Primary diagnosis will influence changes in a child's behavioral functioning as indicated by behavior toward others and self-harm subscale scores.</p>	<p>Repeated Measures ANOVA</p>
<p><u>Hypothesis XXIII</u>: Primary diagnosis will influence changes in a child's social role functioning as indicated by CAFAS school, community, and home subscale scores.</p>	<p>Repeated Measures ANOVA</p>
<p><u>Hypothesis XXIV</u>: Primary diagnosis will influence changes in a child's cognitive functioning as indicated by the thinking and moods and emotions subscale scores.</p>	<p>Repeated Measures ANOVA</p>
<p><u>Hypothesis XXV</u>: Comorbidity will influence changes in a child's overall functioning as indicated by total CAFAS score.</p>	<p>Repeated Measures ANOVA</p>
<p><u>Hypothesis XXVI</u>: Comorbidity will influence changes in a child's behavioral functioning as indicated by behavior toward others and self-harm subscale scores.</p>	<p>Repeated Measures ANOVA</p>

<u>Hypothesis XXVII</u> : Comorbidity will influence changes in a child's social role functioning as indicated by the school, home, and community subscale scores.	Repeated Measures ANOVA
<u>Hypothesis XXVIII</u> : Comorbidity will influence changes in a child's cognitive functioning as indicated by the CAFAS thinking and moods and emotions subscale scores.	Repeated Measures ANOVA

Human Subjects Protection-

This study received approval from the Virginia Commonwealth University Office of Research Subjects Protection and the Richmond Behavioral Health Authority Human Subjects Research Board. Both organizations exist to ensure that research follows federal guidelines concerning the humane and ethical treatment of human participants in research studies.

Several safeguards protected human subjects. First, the researcher asked for informed consent from the parents or guardians and informed assent from the older children ages 11 to 13. The researcher spoke at a YDT parent's meeting and contacted parents by telephone. During these contacts, the researcher explained the purpose of the evaluation, the evaluation questions, and the benefits and risks of the study. The researcher also explained that participation in the study was voluntary and declining to

participate would not affect their or their child's ability to receive current or future services from the agency. Finally, the researcher informed prospective participants that the results were confidential; those not connected with the study would not be able to link individual scores with individual clients and that written reports would contain only the cumulative results of data, not individual results or scores.

If parents chose to participate (as indicated by a signed informed consent), the researcher collected the following information from each child's file: any CAFAS scores obtained, age, names of diagnosed mental or behavioral disorders (e.g., depression, ADHD), whether the child currently was taking medication (psychotropic), length of treatment at YDT, and any other mental health services received in the previous year. The researcher entered data into a statistical analysis computer program (SPSS). Each participant received a participant number that corresponded with his or her name. This was for the purposes of matching the CAFAS scores for specific clients. The key for this list was secured in a locked file cabinet of an agency management officer not associated with the study.

Past Evaluations

The purpose of this study was to evaluate the effectiveness of YDT for children with serious emotional disorder. Parents, teachers, and staff provided anecdotal evidence suggesting that YDT was effective in improving children's behaviors; however, this study was the first formal evaluation conducted at the agency. This study provided quantitative data to help staff address current program functioning and determine future program changes.

CHAPTER 4

Results

This chapter reports findings from the statistical analyses outlined in Chapter 3. The author begins with a discussion of data cleaning and follows with a description of the study sample. Finally, the author concludes with a summary of research results.

Data Cleaning and Transformations

Data cleaning

The initial data set contained 113 cases. The researcher printed a copy of the data set to check for duplicate cases, data entry mistakes, and missing data. Upon examination, the researcher identified three cases with a significant amount of missing data. Specifically, these cases had missing demographic data as well as missing CAFAS subscale results. These cases were omitted from the data analysis.

The researcher identified three minor data entry mistakes. A '100' was substituted for a '10' on the thinking subscale. The researcher confirmed this by reviewing the records for the three cases and making the appropriate corrections. The researcher examined the "services provided" variable and noted that twelve cases had participated in a school-based day treatment program in addition to the YDT program. These cases had the potential to impact the fidelity of the treatment received by the participants. Therefore, the researcher omitted the 12 cases.

There were four cases missing at least one CAFAS subscale score. These data were missing because casemanagers had copies of the total CAFAS scores but were not able to locate the original CAFAS forms with the subscale scores listed. The final sample ($N = 101$) contained all cases with at least four CAFAS total scores and complete demographic information.

Data transformations

The researcher created three new variables, comorbidity, primary diagnostic dimension, and age range. The comorbidity variable was created by adding the number of diagnoses for each child and then specifying whether the child had one diagnosis or more than one diagnoses. The researcher used the comorbidity variable in analyses examining the impact of comorbidity on functioning.

The researcher created the primary diagnostic dimension variable by grouping the primary diagnoses based on whether the primary diagnosis manifested itself in an internal or external manner. As discussed in Chapter 2, researchers characterize disorders depending on whether they are disorders of internal functioning (e.g., depression, anxiety) or disorders of external functioning (e.g., actual behaviors). In this study, depression, anxiety, bipolar disorder, adjustment disorder, sexual abuse as a child, and Post Traumatic Stress Disorder (PTSD) were categorized as internalizing disorders. Attention Deficit Disorder (ADD/ADHD), Oppositional Defiant Disorder (ODD), and Disruptive Behavior Disorder (DBD) were categorized as externalizing disorders. The researcher used the primary diagnostic dimension variable in analyses that examined the impact of diagnosis on functioning.

The researcher created the age range variable by grouping children based on their YDT age group. Children ages five and six became age range 1, children ages seven and eight became age range 2, children ages nine and ten became age group 3, and children eleven and older became age group 4. The age range variable was used in analyses examining the impact of age on functioning.

Description of the Sample

The sample ($N = 101$) was predominately male ($n = 64, 63.4\%$) and African American ($n = 99, 98.0\%$). Children ranged in age from 5 to 13 with the average child being 9.2 years of age ($SD = 2.0$). Most children took psychotropic medications ($n = 70, 69.3\%$); however, within the sample, a greater percentage of females took medication ($n = 30, 81.1\%$) than males ($n = 40, 62.5\%$), $X^2(1) = 3.805, p = .05$. Student's t -test analysis failed to reveal statistically significant differences in mean age between those taking medication and those not taking medication $t(99) = -.140, p = .90$.

Primary Diagnostic Dimension

The primary diagnostic dimension variable indicates whether a child's primary diagnosis was an internalizing disorder such as depression or anxiety or an externalizing disorder such as conduct disorder. Within the sample, externalizing disorders were common; most children had a primary diagnosis categorized as 'externalizing' ($n = 83, 82.2\%$). This was true for males and females in the sample ($n = 55, 85.9\%$ and $n = 28, 75.7\%$, respectively). However, Chi-square analysis failed to reveal a statistically significant association between primary diagnostic dimension and gender, $X^2(1) = 1.686,$

$p = .19$. Males in the sample were no more likely to have externalizing primary diagnoses than females.

The primary diagnostic dimension was not related to whether a child took psychotropic medication or not, $X(1)^2 = .739$, $p = .39$. Those taking medications were no more likely to have externalizing diagnoses than those not taking medication. Finally, Student's t -test analysis failed to reveal statistically significant differences in the average ages of those with internalizing disorders compared with those categorized with externalizing disorders, $t(99) = -1.742$, $p = .09$.

Almost half of the sample had a primary diagnosis of Attention Deficit Disorder ($n = 50$, 49.5%) with ADD/ADHD being a frequent diagnosis for males ($n = 32$, 50.0%) and females ($n = 18$, 48.6%). Another frequent diagnosis for all children was Disruptive Behavior Disorder. Specifically, an almost equal percentage of males ($n = 17$, 26.6%) and females ($n = 8$, 21.6%) had this as a primary disorder. It is important to mention that Chi-Square analysis did not reveal a statistically significant relationship between gender and primary diagnosis, $X^2(8) = 6.758$, $p = .56$.

Infrequent primary diagnoses for the sample included anxiety ($n = 2$, 2.0%), bipolar ($n = 1$, 1.0%), Adjustment Disorder ($n = 1$, 1.0%), and sexual abuse as a child ($n = 1$, 1.0%). These diagnoses represented about 5% of all cases. Table 3 reports the demographic variables for the sample and Table 4 reports diagnosis by gender.

Table 3: Sample Demographics (N = 101)

Gender	Female ($n = 37$, 36.6%); Male ($n = 64$, 63.4%)
Age	$M = 9.25$ yrs. $SD = 2.04$ $Mdn = 9.00$ yrs. Range= 8.0, Min.= 5.0, Max.= 13.0
Medication	No= ($n = 31$, 30.7%) Yes= ($n = 70$, 69.3%)
Primary Diagnosis	ADD/ADHD ($n = 50$, 49.5%) Depression ($n = 12$, 11.9%) ODD ($n = 8$, 7.9%) Anxiety ($n = 2$, 2.0%) Bipolar ($n = 1$, 1.0%) Disruptive Behave. ($n = 24$, 24.8%) Adjustment ($n = 1$, 1.0%) Sexual Abuse ($n = 1$, 1.0%) PTSD ($n = 1$, 1.0%)

Table 4: Comparison of diagnosis by gender

	ADD	DEP	ODD	AX	BIP	DBE	ADJ	SA	PTSD	Tot.
GENDER										
Female	18	5	2	1	1	8	0	1	1	37
	48.6%	13.5%	5.4%	2.7%	2.7%	21.6%	0.0%	2.7%	2.7%	100%
Male	32	7	6	1	0	17	1	0	0	64
	50.0%	10.9%	9.4%	1.6%	0.0%	26.6%	1.6%	0.0%	0.0%	100%

Note: ADD= ADD/ADHD, DEP= depression, AX= anxiety disorder, BIP= bipolar, DBE= disruptive behavior, ADJ= adjustment disorder, SA= sexual abuse as a child

Comorbidity

Most children ($n = 74$, 73.3%) had only one disorder. However, among those with more than one disorder ($n = 27$ 26.7%), the most frequently occurring combination of disorders was Attention Deficit Disorder (ADD) and Oppositional Defiant Disorder (ODD). Specifically, 48.1% ($n = 13$) of children with comorbidity were diagnosed with ADD and ODD. The most infrequently occurring primary diagnoses (anxiety, bipolar, adjustment, sexual abuse as a child, and PTSD) occurred without comorbidity.

Chi-Square analysis revealed that comorbidity was not related to gender $X(1)^2 = 2.105$, $p = .15$, whether the child took psychotropic medications $X(1)^2 = 2.568$, $p = .11$, or primary diagnostic dimension (internal or external) $X(1)^2 = .012$, $p = .91$.

Additionally, the Student's t -test failed to reveal statistically significant differences in

mean age between those with comorbidity and those without comorbidity, $t(99) = -1.703$, $p = .09$.

Initial Functioning: What are children initially like?

This section reports findings from an investigation of hypotheses I through VIII. These hypotheses examined the initial functioning of children at the day treatment program. This section begins with a discussion of the CAFAS scores for the sample and then states each research hypothesis and associated results.

Before participating in treatment, children in the sample had a moderate to severe level of overall functional impairment as indicated by baseline total CAFAS scores. The most frequently reported score was 60 and total CAFAS scores ranged from a minimum of 30 to a maximum of 170 points with children averaging 85.74 ($SD = 29.84$) points. Before entering YDT, children had the most difficulty demonstrating appropriate behaviors toward others and functioning in school and home as evidenced by CAFAS average behavior toward others ($M = 21.11$, $SD = 6.83$), school ($M = 21.82$, $SD = 5.95$), and home ($M = 16.77$, $SD = 8.43$) scores. The minimum possible score for school on the CAFAS is 0; however, the minimum reported score for the sample was 10 indicating that all children in the sample had at least some difficulty functioning at school. In contrast, the majority of children did not engage in self-harmful behaviors as documented by scores on the self-harm subscale ($M = 2.22$, $SD = 5.81$). Table 5 reports the average CAFAS scores for the total CAFAS and each of the CAFAS subscales.

Table 5: Baseline CAFAS Scores

	<i>School</i> (<i>n</i> = 99)	<i>Home</i> (<i>n</i> = 99)	<i>Community</i> (<i>n</i> = 99)	<i>Behavior</i> <i>Toward</i> <i>Others</i> (<i>n</i> = 99)	<i>Moods and</i> <i>Emotions</i> (<i>n</i> = 99)	<i>Self Harm</i> (<i>n</i> = 99)	<i>Drug</i> <i>Use</i> (<i>n</i> = 99)	<i>Thinking</i> (<i>n</i> = 99)	<i>Total</i> CAFAS (<i>N</i> = 101)
Mean	21.82	16.76	4.04	21.11	13.84	2.22	0	6.77	85.74
<i>SD</i>	6.0	8.4	6.1	6.8	6.0	5.8		8.7	29.8
Median	20.0	20.0	0.0	20.0	10.0	0.0	0.0	0.0	80.0
Mode	20.0	20.0	0.0	20.0	10.0	0.0	0.0	0.0	60.0
Min.	10.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	30.0
Max.	30.0	30.0	20.0	30.0	30.0	20.0	0.0	30.0	170.0

* Note: There were missing CAFAS subscale data for four cases.

Initial Functioning and CAFAS Subscales

Research conducted by Hodges (1999) demonstrates that the total CAFAS and CAFAS subscales are strongly correlated with each other. However, in the current evaluation, CAFAS subscales were not all correlated with each other. Pearson's correlation coefficient (r) indicated statistically significant positive correlations between the total CAFAS and the school ($r = .391, p = .00$), home ($r = .741, p = .00$), community ($r = 6.16, p = .00$), behavior toward others ($r = .645, p = .00$), moods and emotions ($r = .587, p = .00$), self-harm ($r = 4.28, p = .00$), and thinking ($r = .705, p = .00$) subscales. Table 6 shows the correlations between the CAFAS subscales.

Gender and Initial Functioning

Hypotheses I through IV investigated whether gender differences existed in initial client functioning. These hypotheses are listed below.

Hypothesis I: There will be differences in initial overall functioning between males and females as noted by baseline total CAFAS scores.

Hypothesis II: There will be differences in initial behavioral functioning between males and females as noted by baseline scores on the behavior toward others and self harm subscales.

Hypothesis III: There will be differences in initial social role functioning between males and females as noted by baseline school, home, and community subscale scores.

Hypothesis IV: There will be differences in initial cognitive functioning between males and females as noted by baseline thinking and moods and emotions subscale scores.

Student's *t*-test results indicated an overall absence of gender differences in baseline CAFAS scores. This finding was consistent for all subscales except the school subscale. There were significant differences between males and females on the CAFAS school subscale $t(85) = -2.88, p < .005$. Specifically, males entered the program with more difficulties in school ($M = 23.02, SD = 6.13$) than females ($M = 19.72, SD = 5.06$). In summary, these findings indicate that only part of Hypothesis III was established.

Medication Use and Initial Functioning

Children taking medication appear to be more impaired at entry into YDT than children not taking medication. Student's *t*-test results indicate statistically significant differences in home $t(97) = -2.76, p = .007$ and behavior toward others $t(97) = -2.06, p = .042$ subscales, as well as total CAFAS score $t(99) = -2.35, p = .021$ between those taking medication and those not taking medication. The average home score for those taking medication was 18.26 ($SD = 8.22$) compared to 13.33 ($SD = 8.02$) for those not taking medication. The average behavior toward others score was 22.03 ($SD = 6.55$) compared to 19.00 ($SD = 7.12$) for those not taking medication. Finally, the average total CAFAS score for those taking medication was 90.29 ($SD = 28.89$) compared to 75.48 ($SD = 29.87$) for those not taking medication.

Age and Initial Functioning

Hypothesis V through VIII examined the relationship between age and initial functioning.

Hypothesis V: Age is related to initial functional impairment as noted by baseline total CAFAS scores.

Hypothesis VI: Age is related to initial behavioral functioning as noted by baseline behavior toward others and self harm subscale scores.

Hypothesis VII: Age is related to initial social role functioning as indicated by baseline home, school, and community subscale scores.

Hypothesis VIII: Age is related to initial cognitive functioning as noted by baseline thinking and moods and emotions subscale scores.

ANOVA analyses indicated statistically significant differences between age groups on community $F(3, 95) = 9.183, p = .001$, behavior toward others $F(3, 95) = 4.521, p = .005$, and total CAFAS $F(3, 97) = 3.617, p = .016$ scores. Tukey HSD post hoc analyses revealed that differences in community score existed between age groups two (7-8 year olds) and four (11-14 year olds) and between age groups three (9-10 year olds) and four (11-14 year olds). Further, differences in behavior toward others score existed between age groups two (7-8 year olds) and four (11-14 year olds). Finally, differences in total CAFAS score existed between groups two (7-8 year olds) and four (11-14 year olds) and age groups three (nine and ten year olds) and four (eleven through fourteen year olds). The following three figures illustrate the mean community, behavior toward others, and total CAFAS scores by age group.

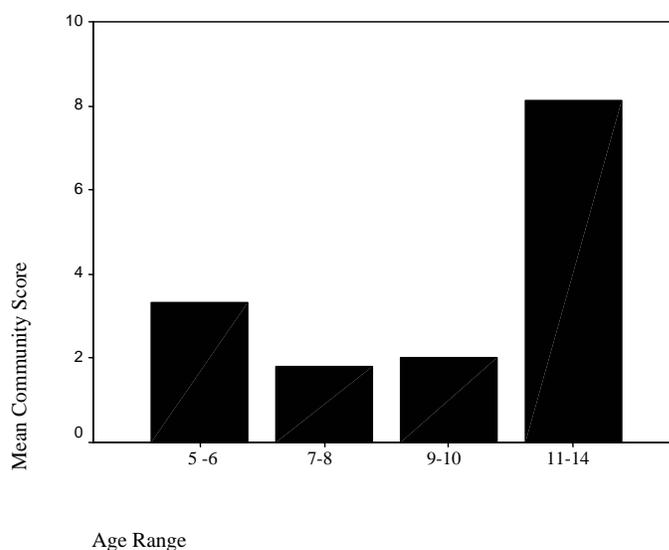


Figure 1: Community Scores by Age Group ($n = 99$)

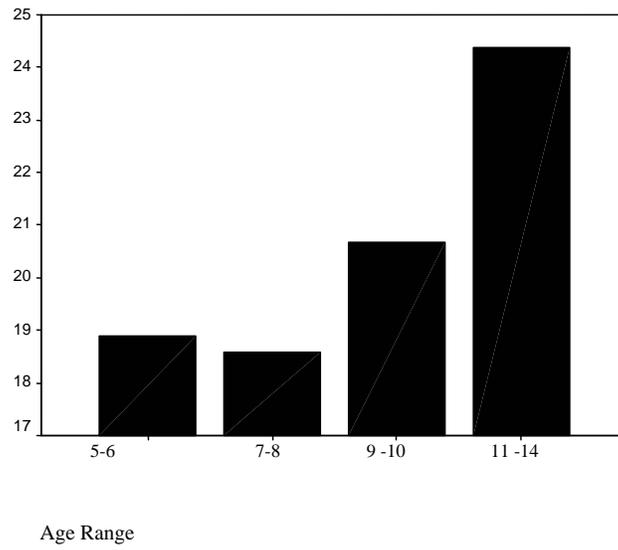


Figure 2: Mean Behavior Toward Others Score by Age Group ($n = 99$)

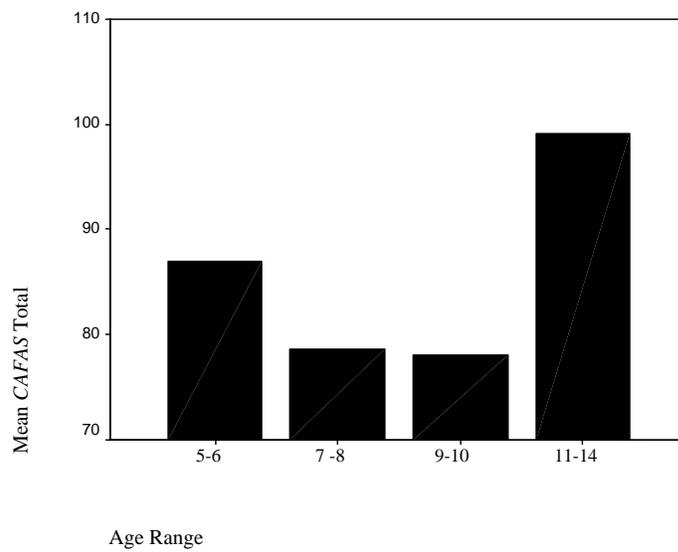


Figure 3: Total CAFAS by Age Group (N = 101)

Pearson's correlation coefficient (r) indicated that age was related to a child's total CAFAS score ($r = .218, p = .03$). In addition, Pearson's correlation coefficients identified statistically significant positive relationships between age in years and community score ($r = .395, p = .001$) and between age and behavior toward other score ($p = .329, p = .001$). Older children had higher community and behavior toward others scores. Specifically, knowing a child's age increases the ability to predict his or her community score by 16% ($r^2 = 0.16$) and behavior toward others score by 11% ($r^2 = 0.11$). Consequently, hypothesis V and parts of hypotheses VI and VII XI were confirmed. The following two figures show the relationship between client age and baseline behavior toward others and community scores.

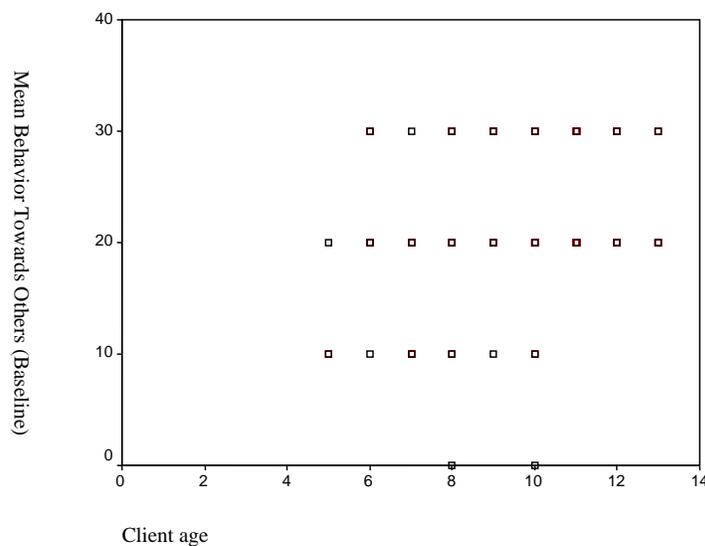


Figure 4: Scatterplot of Client Age and Behavior Toward Others Score ($n = 99$)

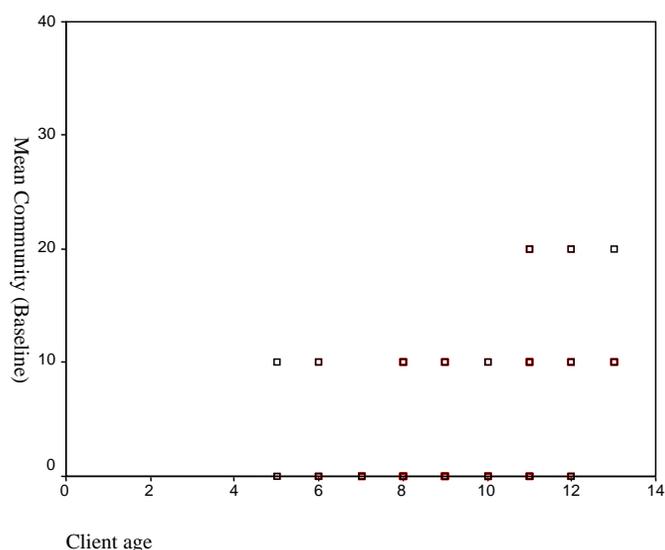


Figure 5: Scatterplot of Client Age and Community Score ($n = 99$)

Diagnosis/Primary Dimension and Initial Functioning

There were no statistically significant differences in functioning between groups of children with different diagnoses on the total CAFAS score. However, when the dimension of the diagnosis was examined, those with internalizing diagnoses had more difficulty at home $t(97) = -3.698, p = .001$, in the community $t(21) = -3.160, p = .005$, demonstrating appropriate behaviors toward others $t(97) = -2.757, p = .007$, showing appropriate mood and emotions $t(97) = -2.252, p = .027$, engaging in non self-harming behaviors $t(97) = -4.396, p = .001$, with cognitive processes $t(97) = -3.076, p = .003$, and overall functioning $t(99) = -5.138, p = .001$. For instance, children with internalizing disorders scored an average of 22.78 points ($SD = 7.5$) on the home subscale compared to 15.43 points ($SD = 8.1$) for those with externalizing disorders. Children with internalizing disorders scored an average of 8.89 points ($SD = 7.6$) on the community

subscale compared to 2.96 ($SD = 5.1$) for those with internalizing disorders. Table 7 reports CAFAS scores by primary diagnostic dimension.

Table 7: CAFAS score by primary dimension ($N = 99$)

	Primary Dimension	$n =$	$SD =$	$SD =$	$t =$	$p =$
School	Externalizing	81	21.48	5.9	-1.196	.23*
	Internalizing	18	23.33	5.9		
Home	Externalizing	81	15.43	8.1	-3.534	.00
	Internalizing	18	22.78	7.5		
Community	Externalizing	81	2.96	5.1	-3.160	.01
	Internalizing	18	8.89	7.6		
Behavior Toward Others	Externalizing	81	20.25	6.5	-2.757	.01
	Internalizing	18	25.00	7.1		
Moods and Emotions	Externalizing	81	13.21	5.9	-2.252	.03
	Internalizing	18	16.67	5.9		
Self Harm	Externalizing	81	1.11	4.2	-4.396	.00
	Internalizing	18	7.22	8.9		
Drug	Externalizing	81	0.0	0.0	<i>n/a</i>	
	Internalizing	18	0.0	0.0		
Thinking	Externalizing	81	5.56	8.2	-3.076	.00
	Internalizing	18	12.22	8.8		
Total CAFAS	Externalizing	81	79.39	24.8	-5.138	.00
	Internalizing	18	115.00	34.2		

* not statistically significant

Comorbidity

Student's *t*-test analyses reveal statistically significant differences in initial home $t(97) = -2.392, p = .019$ and community, $t(36) = -2.711, p = .010$ functioning between those with and without comorbidity. Children with comorbidity scored 20.0 ($SD = 8.3$) on the home subscale compared to a score of 15.6 ($SD = 8.2$) for those without comorbidity. Children with comorbidity scored 7.0 ($SD = 7.2$) on the community subscale compared to 2.9 ($SD = 5.2$) for those without comorbidity.

Changes in Functioning: What happens to children after 9 months of treatment?

Hypotheses IX through XII investigated whether children attending the day treatment program for at least six months improved their functioning in specific areas as well as their total functioning. Specifically, these hypotheses examined whether or not children attending the program got better.

Hypothesis IX: Children attending Youth Day Treatment for at least six months will show changes in total functioning as noted by scores on the CAFAS total score.

Hypothesis X: Children attending Youth Day Treatment for at least six months will show changes in behavioral functioning as noted by scores on the CAFAS behavior toward others and self harm subscales.

Hypothesis XI: Children attending Youth Day Treatment for at least six months will show changes in social role functioning as noted by scores on the CAFAS school subscale, CAFAS home subscale, and CAFAS community subscale.

Hypothesis XII: Children attending Youth Day Treatment for at least six months will not show changes in cognitive functioning as noted by scores on the CAFAS thinking and mood subscales.

Repeated Measures Analysis of Variance tests indicated that children attending YDT for nine months improved their overall functioning $F(2, 217) = 26.23, p = .001$ as well as their functioning at school $F(3,279) = 10.822, p = .001$, home $F(3, 244) = 6.120, p = .001$ and in the community $F(3, 238) = 4.158, p = .010$. In addition, children improved their thinking $F(2, 232) = 5.595, p = .001$, behavior toward others $F(3, 279) = 24.230, p = .001$ and decreased the amount of self-harm $F(1, 121) = 7.546, p = .001$. Children began YDT with an average total CAFAS score of score of 85.90; however, after nine months of treatment, children dropped 20.40 points to an average CAFAS score of 65.50 points. Statistically significant point decreases for CAFAS subscales include average decreases in CAFAS school (4 points), home (4 points), community (1.9 points), thinking (2.0 points), behavior toward others (7 points), and self-harm (1 point) scores. Figures six through ten demonstrate the changes in average scores for children over the nine-month treatment period.

In summary, hypotheses IX, X, and XI were upheld. However, only part of hypothesis XII was established. Specifically, the researcher hypothesized that children participating in the program would not improve their cognitive functioning. However, statistical tests revealed that children demonstrated increases on the thinking subscale.

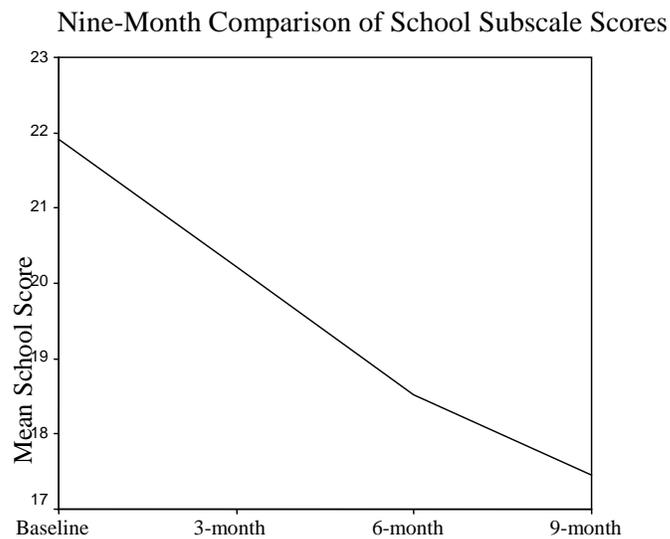


Figure 6: Nine-month Comparison of School Subscale Scores

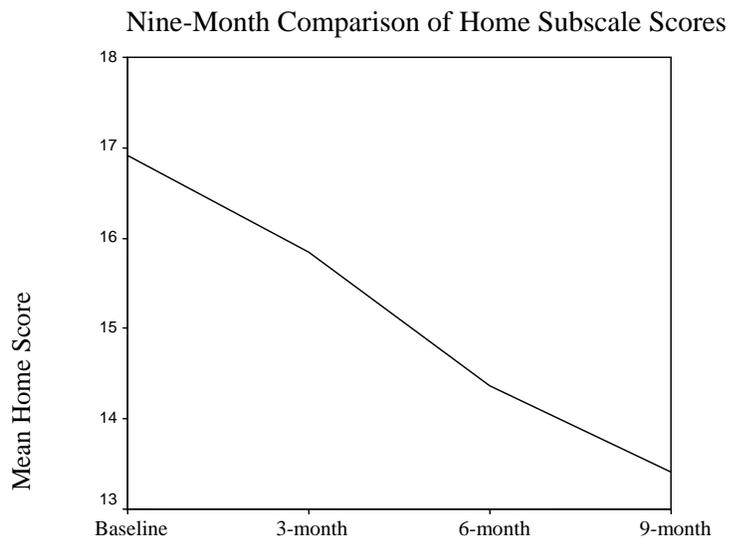


Figure 7: Nine-Month Comparison of Home Subscale Scores

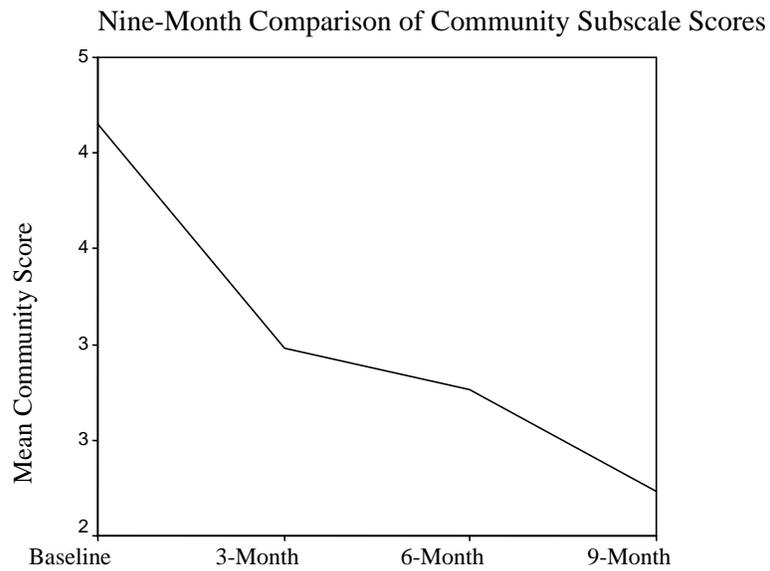


Figure 8: Nine-Month Comparison of Community Subscale Scores

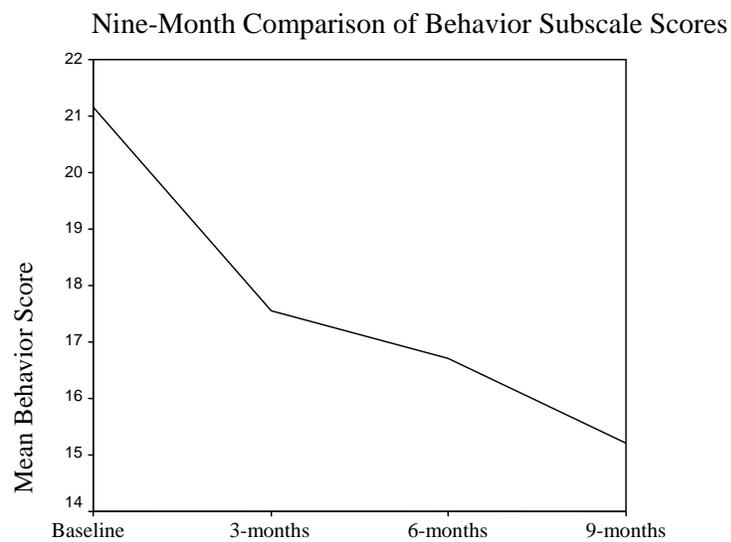


Figure 9: Nine-Month Comparison of Behavior Subscale Scores

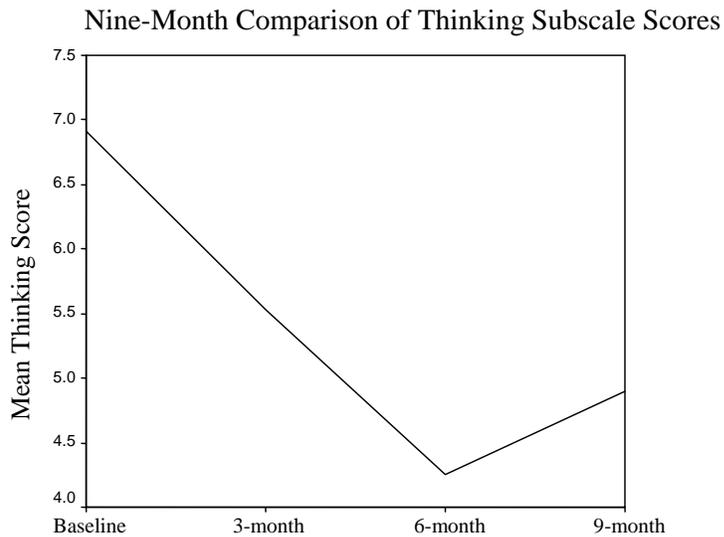


Figure 10: Nine-Month Comparison of Harm Subscale Scores

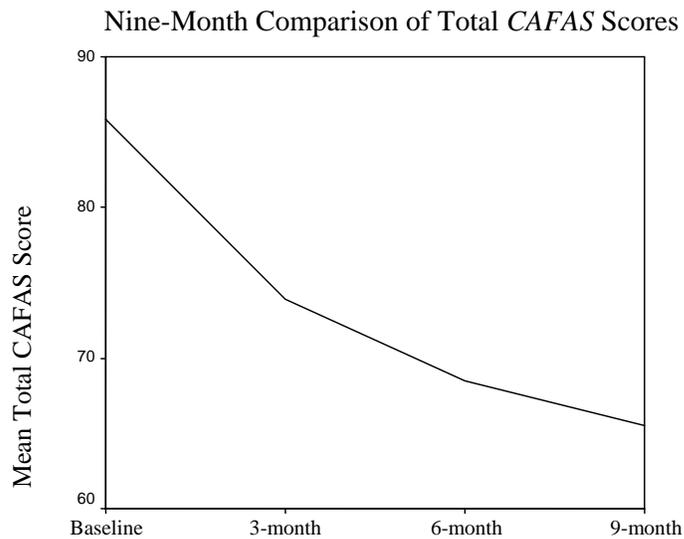


Figure 11: Nine-Month Comparison of Total CAFAS Scores

Characteristics and changes in functioning

The next sections examine child characteristics and determine whether specific characteristics impacted changes in functioning. It is important to preface this section

with a statement discussing the theoretical process used to examine personal characteristics and changes in functioning. The repeated measures between-within technique used to address the following hypotheses provided information concerning whether there were differences between groups (i.e. males and females) that remained throughout the study period and information concerning whether the combination of gender and time influenced child functioning. These two pieces of information are complementary and necessary to interpret results because gender differences may be present initially and continue to remain throughout the study; however, it is the combination of time and gender that allows the reader to understand whether there are statistically significant differences between time periods and genders. Thus, there may be statistically significant differences between groups (i.e. males and females) but a synthesis of information is needed to determine the effectiveness of the day treatment program. This synthesis and discussion is provided in Chapter 5.

Gender and Changes in Functioning

Hypotheses XIII through XVI investigated the influence of gender on changes in CAFAS scores. Specifically, these hypotheses examined whether there were differences between males and females that remained during the evaluation period and whether there was an interaction effect for gender and time.

Hypothesis XIII: Gender will not influence changes in a child's overall functioning as indicated by total CAFAS score.

Hypothesis XIV: Gender will not influence changes in a child's behavioral functioning as indicated by behavior toward others and self harm subscale scores.

Hypothesis XV: Gender will not influence changes in a child's social role functioning as indicated by CAFAS school, community, or home subscale scores.

Hypothesis XVI: Gender will not influence changes in a child's cognitive functioning as indicated by thinking and moods subscale scores.

Repeated Measures Analysis of Variance between-within subjects design failed to indicate statistically significant differences between males and females on total CAFAS $F(1, 99) = .133, p = .72$, and the school $F(1, 92) = 1.686, p = .20$, home $F(1, 92) = .143, p = .71$, community $F(1,92) = .121, p = .73$, behavior toward others $F(1, 92) = .122, p = .73$, moods and emotions $F(1, 92) = .424, p = .52$, self-harm $F(1, 92) = .136, p = .71$, and thinking $F(1, 92) = 1.005, p = .32$ subscales. In addition, the combination of gender and time did not have a statistically significant influence on the majority of CAFAS subscales. Specifically, the combination of gender and time did not influence total CAFAS $F(2, 211) = 1.188, p = .31$, or the home $F(3, 241) = .248, p = .86$, community $F(3, 235) = .214, p = .86$, behavior toward others $F(3, 276) = 2.496, p = .06$, moods and emotions $F(3, 276) = 1.143, p = .33$, self-harm $F(1, 119) = .682, p = .45$, or thinking $F(2, 229) = .343, p = .76$ subscales across the nine-month period. One exception to this trend is the school subscale $F(3,253) = 3.753, p = .01$.

In summary, differences between males and females did not exist throughout the study period for the total CAFAS, *and the* home, community, behavior toward others, moods and emotions, self-harm, and thinking *subscales*. However, the combination of gender and time (the day treatment program) influenced a child's functioning in school. Thus, statistical tests upheld Hypotheses XIII, XIV, XVI, and part of Hypothesis IV. Table 8 shows the school score by gender and time and Figure 12 shows a line chart of the school score by gender and time.

*Table 8: School Score by Gender and Time (n = 94)***

Months	Gender	<i>M</i>	<i>SD</i>	<i>n</i>
Baseline	Female	19.72	5.1	36
	Male	23.27	6.0	58
Three	Female	18.89	7.9	36
	Male	21.03	6.9	58
Six	Female	19.72	6.1	36
	Male	17.76	6.2	58
Nine	Female	16.67	7.9	36
	Male	17.93	7.2	58

* $F(3,253) = 3.7539, p = .01$ between-within for gender and time

**The sample size used in this analysis ($n = 94$) is different from the entire sample due to 7 missing cases.

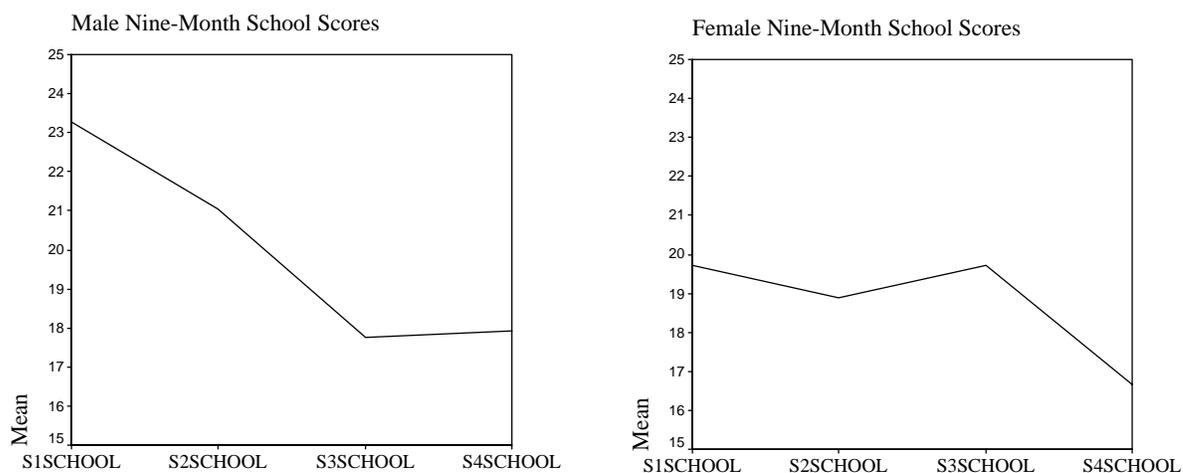


Figure 12: Comparison of Male and Female Nine-Month School Scores ($n = 94$)

Use of medication and changes in functioning

Hypotheses XVII through XX investigated the effect that medication had on changes in CAFAS scores. Specifically, these hypotheses examined whether there were differences over time between children taking medication and not taking medication.

Hypothesis XVII: Taking medication will influence changes in a child's overall functioning as indicated by total CAFAS score

Hypothesis XVIII: Taking medication will influence changes in a child's overall behavioral functioning as indicated by behavior toward others and self-harm subscale scores

Hypothesis XIX: Taking medication will influence changes in a child's social role functioning as indicated by school, home, and community subscale scores

Hypothesis XX: Taking medication will influence changes in a child's cognitive functioning

Repeated Measures Analysis of Variance between-within subjects design indicated statistically significant differences between those taking medication and those not taking medication on the total CAFAS $F(1, 99) = 19.23, p = .001$ score and the home, $F(1, 92) = 12.26, p = .001$, school $F(1, 92) = 4.21, p = .040$, behavior toward others $F(1, 92) = 18.53, p = .001$, moods and emotions $F(1, 92) = 6.25, p = .010$, and thinking $F(1, 92) = 7.32, p = .010$ subscales across the nine-month period. In addition, the combination of medication and the day treatment program had a statistically significant influence on the home subscale score $F(3, 242) = 3.163, p = .030$. In summary, there were differences between those taking medication and those not taking medication for home, school, behavior toward others, moods and emotions, and thinking subscale scores and these differences remained throughout the study period. Further, the combination of medication and time (the day treatment program) influenced the home score. In summary, hypotheses XVII, XIX, XX and part of hypothesis XVIII were upheld. The following tables show the statistically significant CAFAS subscales by medication status. Table 9 shows the CAFAS total by medication status, Table 10 shows the school score by medication status, Table 11 shows behavior toward others score by medication status, Table 12 shows moods and emotions scale by medication status, Table 13 shows thinking score by medication status, and Table 13 shows home score by medication status and time. In addition, Figure 13 shows a line chart of the home score by medication status and time.

Table 9: CAFAS Total By Medication Status ($n = 101$)

Months	Medication?	M	SD	n
Baseline	No	75.48	29.9	31
	Yes	90.29	28.9	70
Three	No	60.97	20.7	31
	Yes	79.86	22.5	70
Six	No	56.45	13.3	31
	Yes	74.14	17.9	70
Nine	No	58.06	19.9	31
	Yes	69.14	19.2	70

* $F(1, 99) = 19.23, p = .00$ for medication

Table 10: School by Medication Status ($n = 94$)

Months	Medication?	M	SD	n
Baseline	No	21.38	6.4	29
	Yes	22.15	5.7	65
Three	No	18.28	5.4	29
	Yes	21.08	7.9	65
Six	No	17.24	5.9	29
	Yes	19.08	6.3	65
Nine	No	15.52	8.3	29
	Yes	18.31	7.0	65

* $F(1, 92) = 4.21, p < .04$ for medication

Table 11: Behavior Toward Others By Medication Status ($n = 94$)

Months	Medication?	M	SD	n
Baseline	No	18.97	7.2	29
	Yes	22.15	6.5	65
Three	No	15.52	5.1	29
	Yes	18.46	5.7	65
Six	No	13.10	4.7	29
	Yes	18.31	5.2	65
Nine	No	13.10	4.7	29
	Yes	16.15	5.8	65

* $F(1, 92) = 18.53, p = .001$ for medication

Table 12: Moods and Emotions By Medication Status ($n = 94$)

Month	Medication?	M	SD	n
Baseline	No	12.41	5.8	29
	Yes	14.31	5.9	65
Three	No	11.38	4.4	29
	Yes	13.38	5.7	65
Six	No	10.34	3.3	29
	Yes	13.38	6.2	65
Nine	No	10.69	5.3	29
	Yes	12.46	5.3	65

* $F(1, 92) = 6.25, p < .014$ for medication

Table 13: Thinking By Medication Status ($n = 94$)

Months	Medication?	M	SD	n
Baseline	No	4.83	8.7	29
	Yes	7.85	8.6	65
Three	No	2.01	4.9	29
	Yes	7.08	8.4	65
Six	No	1.72	4.7	29
	Yes	5.38	8.1	65
Nine	No	2.07	4.9	29
	Yes	6.15	8.0	65

* $F(1, 92) = 7.32, p < .01$ for medication

Table 14: Home by Medication Status and Time ($n = 94$)

Months	Medication?	M	SD	n
Baseline	No	13.45	8.1	29
	Yes	18.46	8.0	65
Three	No	12.41	7.4	29
	Yes	17.38	7.0	65
Six	No	12.41	5.1	29
	Yes	15.23	5.3	65
Nine	No	13.45	5.5	29
	Yes	13.38	5.9	65

* $F(3, 242) = 3.16, p = .03$ for medication and time

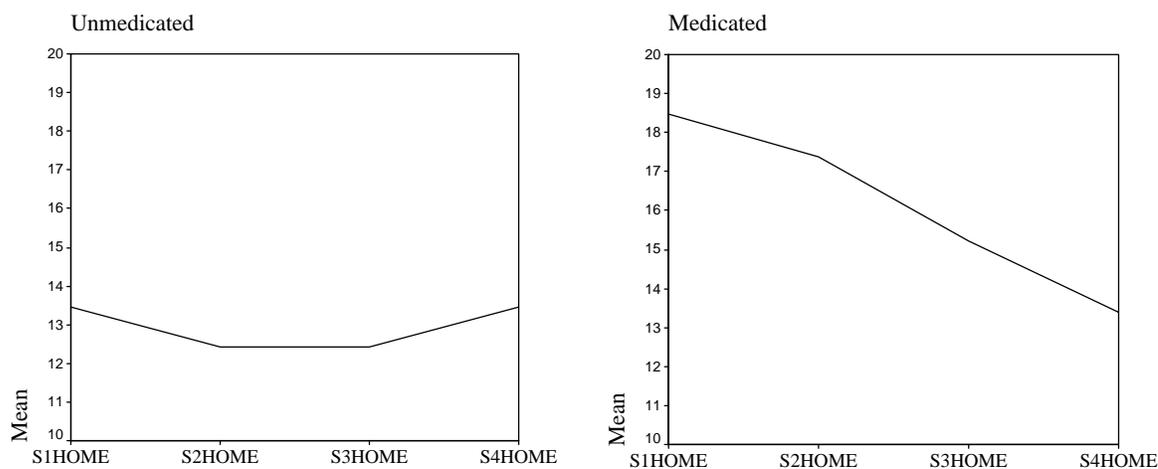


Figure 13: Medication Status and Home Score by Time (n = 94)

Primary diagnosis and changes in functioning

Hypotheses XXI through XXIV investigated the influence of a child's primary diagnosis on changes in CAFAS score. Data did not contain enough cases in each cell to determine if there were differences in functioning between those with different primary diagnoses. However, past research exists that supports the grouping of diagnoses into two categories, internalizing and externalizing (e.g., CBCL; Achenbach, 1991). Thus, analyses were conducted to examine differences between internalizing and externalizing groups.

Hypothesis XXI: Primary diagnosis will influence changes in a child's overall functioning as indicated by total CAFAS score.

Hypothesis XXII: Primary diagnosis will influence changes in a child's behavioral functioning as indicated by behavior toward others and self harm subscale scores.

Hypothesis XXIII: Primary diagnosis will influence changes in a child's social role functioning as indicated by CAFAS school, home, and community subscale scores.

Hypothesis XXIV: Primary diagnosis will influence changes in a child's cognitive functioning as indicated by the thinking and moods and emotions subscale scores.

Repeated Analysis of Variance between-within designs indicated statistically significant differences between internalizers and externalizers in CAFAS total $F(1,99) = 19.64, p = .001$, community $F(1, 92) = 12.95, p = .001$, behavior toward others $F(1, 92) = 6.34, p = .010$, self-harm $F(1, 92) = 29.37, p = .001$, and thinking $F(1, 92) = 6.144, p = .020$ for the nine-month treatment period. In addition, the combination of diagnostic dimension and treatment time was statistically significant for CAFAS total $F(2, 226) = 8.18, p = .001$, home $F(3, 248) = 5.02, p = .001$, and self-harm $F(3, 120) = 8.09, p = .001$.

In summary, there were differences between internalizers and externalizers on total CAFAS, community, behavior toward others, self harm, and thinking and these differences lasted throughout the treatment period. The combination of diagnostic dimension and the day treatment program influenced the children's overall functioning, functioning at home, and the amount of self harming behaviors. Thus, hypotheses XXI, XXII and parts of hypotheses XXIII, and XXIV were upheld. The following tables report the statistically significant CAFAS subscale scores by primary diagnostic dimension. Table 15 shows the community functioning score by primary

diagnostic dimension, Table 16 shows the behavior toward others score by primary diagnostic dimension, and Table 17 shows the thinking score by primary diagnostic dimension, Table 18 shows the CAFAS total by primary diagnostic dimension and time, Table 19 shows the home score by primary diagnostic dimension and time, and Table 20 shows the self-harm score by primary diagnostic dimension and time. The accompanying figures are line charts that show the progression of CAFAS scores by diagnostic dimension and time. Figure 14 shows the CAFAS total score by primary diagnostic dimension and time, Figure 15 shows the home score by primary diagnostic dimension and time, and Figure 16 shows the self-harm score by primary diagnostic dimension and time.

Table 15: Community Functioning by Primary Diagnostic Dimension (n = 94)

Month	Primary Diagnostic Dimension	<i>M</i>	<i>SD</i>	<i>n</i>
Baseline	External	3.12	5.2	77
	Internal	8.82	7.8	17
Three	External	2.21	4.5	77
	Internal	6.47	7.0	17
Six	External	2.34	4.8	77
	Internal	4.71	5.14	17
Nine	External	1.82	4.21	77
	Internal	4.12	5.1	17

* $F(1, 92) = 12.95, p = .00$ for diagnostic dimension

Table 16: Behavior toward others by Primary Diagnostic Dimension (n = 94)

Month	Primary Diagnostic Dimension	<i>M</i>	<i>SD</i>	<i>n</i>
Baseline	External	20.39	6.6	77
	Internal	24.71	7.2	17
Three	External	17.40	5.7	77
	Internal	18.24	5.3	17
Six	External	16.23	5.6	77
	Internal	18.82	4.9	17
Nine	External	14.68	5.5	77
	Internal	17.65	5.6	17

**F(1, 92) = 6.35, p = .01*

Table 17: Thinking by Primary Diagnostic Dimension ($n = 94$)

Month	Primary Diagnostic Dimension	M	SD	n
Baseline	External	5.84	8.3	77
	Internal	11.76	8.8	17
Three	External	4.94	7.54	77
	Internal	8.23	8.8	17
Six	External	3.38	6.8	77
	Internal	8.24	8.8	17
Nine	External	4.29	7.3	77
	Internal	7.65	7.5	17

* $F(1,92) = 6.14, p = .02$

Table 18: CAFAS Total by Primary Diagnostic Dimension and Time ($n = 101$)

Month	Primary Diagnostic Dimension	M	SD	n
Baseline	External	79.40	24.8	83
	Internal	115.00	34.2	18
Three	External	70.24	21.2	83
	Internal	91.67	26.2	18
Six	External	67.00	18.3	83
	Internal	76.67	17.8	18
Nine	External	64.10	19.1	83
	Internal	73.33	22.8	18

*CAFAS total and treatment time $F(2, 226) = 8.18, p = .001$

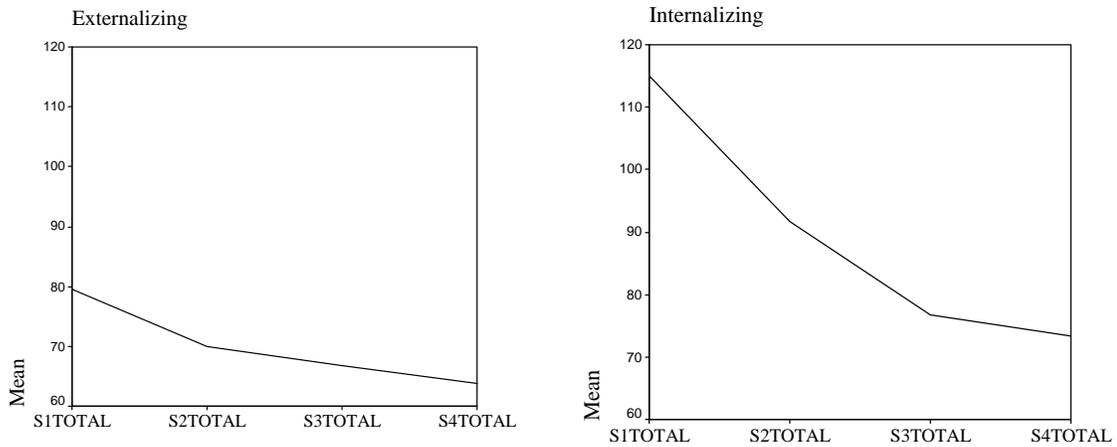


Figure 14: CAFAS Total by Diagnostic Dimension

Table 19: Home Score by Diagnostic Dimension and Time ($n = 94$)

Month	Primary Diagnostic Dimension	M	SD	n
Baseline	External	15.71	8.0	77
	Internal	22.35	7.5	17
Three	External	15.58	7.7	77
	Internal	17.06	5.9	17
Six	External	14.68	5.5	77
	Internal	12.94	4.7	17
Nine	External	13.38	5.8	77
	Internal	13.53	6.1	17

* $F(3,248) = 5.02, p = .001$ for Diagnostic Dimension and Time

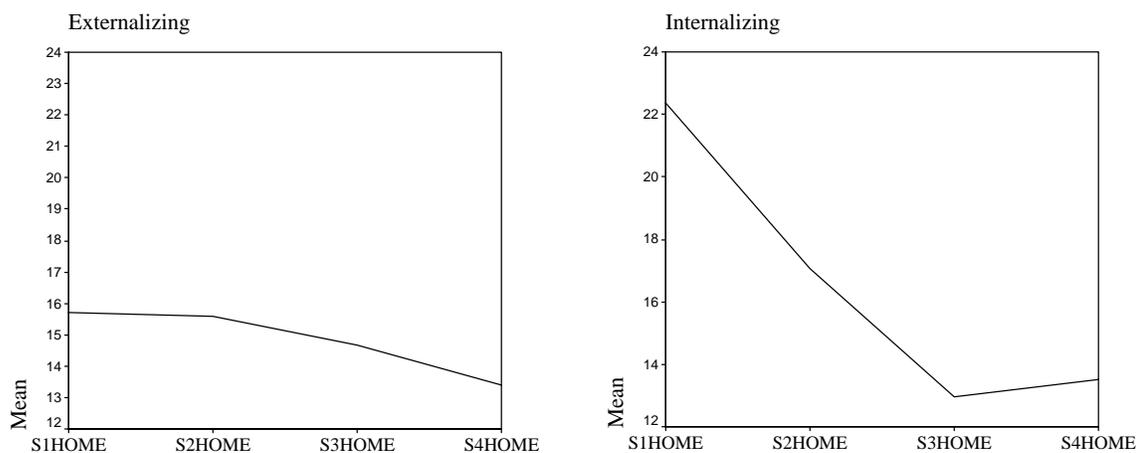


Figure 15: Home by Diagnostic Dimension

Table 20: Self Harm by Primary Diagnostic Dimension and Time ($n = 94$)

Month	Primary Diagnostic Dimension	M	SD	n
Baseline	External	1.04	4.2	77
	Internal	6.47	8.6	17
Three	External	0.00	0.00	77
	Internal	2.35	4.4	17
Six	External	0.13	1.1	77
	Internal	1.18	3.3	17
Nine	External	0.13	1.1	77
	Internal	0.59	2.4	17

*Self-Harm and time $F(1, 120) = 8.09, p = .01$

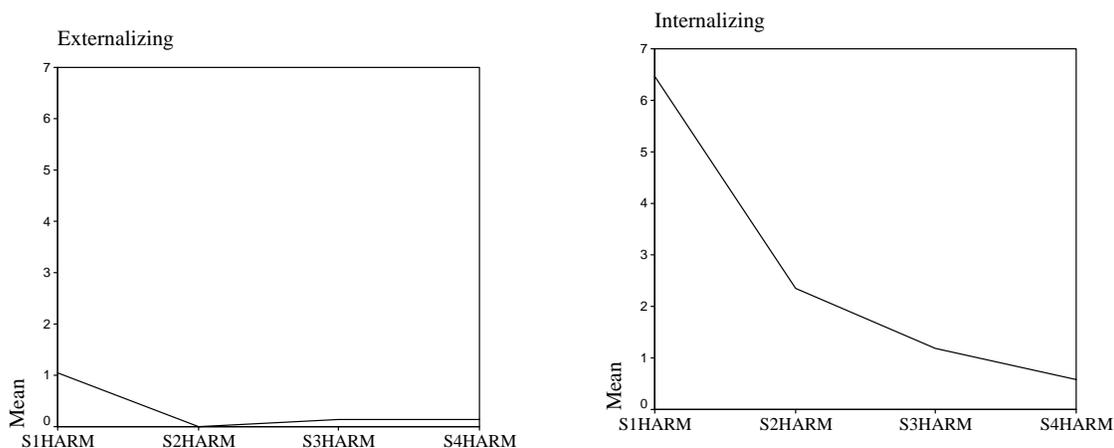


Figure 16: Harm Score By Diagnostic Dimension

Comorbidity and Changes in CAFAS Functioning

Hypotheses XXV through XXVIII investigated the influence of comorbidity on the total CAFAS score. Specifically, these hypotheses examined whether those children with one diagnosis were different from children with multiple diagnoses across the nine-month treatment period.

Hypothesis XXV: Comorbidity will influence changes in a child's overall functioning as indicated by total CAFAS score.

Hypothesis XXVI: Comorbidity will influence changes in a child's behavioral functioning as indicated by behavior toward others and self harm subscale scores.

Hypothesis XXVII: Comorbidity will influence changes in a child's social role functioning as indicated by the school, home, and community subscale scores.

Hypothesis XXVIII: Comorbidity will influence changes in a child's cognitive functioning as indicated by the CAFAS thinking and moods and emotions subscale scores.

Repeated Analyses of Variance between-within subjects designs indicated statistically significant differences between children with comorbidity and those without comorbidity on behavior toward others $F(1, 92) = 4.11, p = .050$, home $F(1, 92) = 4.38, p = .040$, and community $F(1, 92) = 4.20, p = .040$ subscales. Repeated Analysis of Variance between-within subjects analyses failed to indicate statistically significant interaction effects between comorbidity and time on any of the CAFAS subscales. In summary, only parts of hypotheses XXVI and XXVII were upheld. The following tables demonstrate CAFAS subscale scores by comorbidity status.

Table 21: Behavior Score by Comorbidity Status (n = 94)

Months	Comorbidity?	<i>M</i>	<i>SD</i>	<i>n</i>
Baseline	No	22.60	7.2	67
	Yes	22.59	5.9	27
Three	No	17.16	5.2	67
	Yes	18.52	6.6	27
Six	No	16.42	5.4	67
	Yes	17.41	5.9	27
Nine	No	14.33	5.6	67
	Yes	17.41	5.3	27

* $F(1, 92) = 4.11, p = .05$

Table 22: Home Score By Comorbidity Status ($n = 94$)

Months	Comorbidity?	<i>M</i>	<i>SD</i>	<i>n</i>
Baseline	No	15.67	8.0	67
	Yes	20.00	8.3	27
Three	No	15.22	7.3	67
	Yes	17.41	7.6	27
Six	No	14.03	5.2	67
	Yes	15.19	5.8	27
Nine	No	13.28	5.9	67
	Yes	13.70	5.7	27

* $F(1, 92) = 4.38, p = .040$

Table 23: Community Score by Comorbidity Status ($n = 94$)

Months	Comorbidity?	<i>M</i>	<i>SD</i>	<i>n</i>
Baseline	No	2.99	5.2	67
	Yes	7.04	7.2	27
Three	No	2.54	4.7	67
	Yes	4.07	6.34	27
Six	No	2.54	5.0	67
	Yes	3.33	4.8	27
Nine	No	1.94	4.0	67
	Yes	2.96	5.4	27

* $F(1, 92) = 4.20, p = .040$

Summary

In summary, children began the day treatment program with a significant degree of functional impairment. However, after nine months of treatment, children did show improvement as indicated by statistical analyses. Tables 21, 22, and 23 summarize results. Table 24 shows initial differences between children, table 25 shows the differences that remained between groups of children throughout the nine-month treatment period, and table 26 shows which variables combined with time influenced scores.

Table 24: Initial differences in Children

	Gender	Medication	Comorbid	Dimension	Age
<i>School</i>	X				
<i>Home</i>		X	X	X	
<i>Community</i>			X	X	X
<i>Behavior toward others</i>		X		X	X
<i>Moods and emotions</i>				X	
<i>Self harm</i>				X	
<i>Thinking</i>				X	
<i>Total CAFAS</i>		X		X	X

Table 25: Nine Months of Treatment Impact Matrix for individual variables

	Gender	Medication	Comorbid	Dimension
<i>School</i>		X		
<i>Home</i>		X	X	
<i>Community</i>			X	X
<i>Behavior toward others</i>		X	X	X
<i>Moods and emotions</i>		X		
<i>Self harm</i>				X
<i>Thinking</i>		X		X
<i>Total CAFAS</i>		X		X

Table 26: Nine-months of Treatment Impact Matrix for Individual Variables Plus Time

	Gender and Time	Meds and Time	Comorbid and Time	Dimension and Time
<i>School</i>	X			
<i>Home</i>		X		X
<i>Community</i>				
<i>Behavior toward others</i>				
<i>Moods and emotions</i>				
<i>Self harm</i>				X
<i>Thinking</i>				
<i>Total CAFAS</i>				X

Chapter four presented the results from the statistical analyses. Chapter five provides a discussion of these results. Specifically, chapter five examines and results in an effort to answer the evaluation questions.

CHAPTER 5

Discussion

Chapter four presented results from the statistical analyses outlined in chapter three. This chapter provides a discussion of results, implications for social work practice and future research. Finally, this chapter concludes with a discussion of the limitations of this study.

It is important to reiterate that due to the research design, the researcher may not infer causality. The researcher will state whether there are changes before, during, or at the end of nine months, but will not make a definitive statement attributing cause to the day treatment program.

Initial Characteristics and Functioning

Gender

In the current study, the gender distribution of 60% male and 40% female is similar to the gender distribution of past studies (e.g., Hodges et al., 1999). However, what is different from past research (e.g., Garland et al., 2001; Liu et al., 2001; Romano et al., 2001) is that statistical analyses indicated an absence of initial gender differences in children identified as SED. In the current study, externalizing disorders were common for boys and girls and gender was not related to medication use. In addition, gender differences in initial functional impairment were absent except for functioning at school where boys were more impaired than girls.

There are several explanations for the absence of gender differences. First, the current study's racial/ethnic demographic composition is different from past studies. Past studies included diverse racial and ethnic groups. For example, Romano and colleagues' sample was predominately Canadian and Liu and colleagues' sample was predominately Chinese. In addition, other studies such as one of the largest studies examining child mental health (SAMHSA, 1999) included a mix of black, white, and other-raced children. The current study's sample is predominately lower income African American.

However, attributing the absence of gender differences to the difference in ethnic/racial demographic characteristics is erroneous. Studies with African-American samples have identified initial gender differences. For example, SAMHSA (1999) determined that males were more impaired at intake and demonstrated more negative behaviors at intake.

Another possibility is that an absence of gender differences exists because of the type of child referred for day treatment. In order to enter the program children must have a degree of functional impairment that makes it difficult to complete age appropriate activities. Thus, only those children with marked functional impairment are referred. Therefore, girls with externalizing disorders are more likely to participate in treatment. In summary, the day treatment program may overrepresent girls with externalizing disorders while underrepresenting those with internalizing disorders.

Finally, an absence of gender differences may be due to the way in which different studies operationalize gender differences. Some studies examine behavioral symptoms only while others identify behavioral symptoms and the level of impairment

that these symptoms caused. For instance, studies may determine that there are differences in the number of negative behaviors by gender, but the number of negative behaviors may not be correlated with the severity of the specific behaviors. Thus, in order to make an accurate assessment, the researcher must examine behaviors and functioning separately and then make a determination concerning the impact of behavior on functioning. The current study examines impairment only.

Comorbidity

The current research findings, similar to findings obtained by Lewinshohn, Rohde, and Seley (1995) and Bird, Gould, and Staghezza (1993) indicate that children with comorbidity are different from those without comorbidity. Specifically, children with more than one disorder demonstrate increased impairment. In the current study, differences between those with comorbidity and those without comorbidity were noted on the home and community subscales. However, past studies such as Lewinshohn et al. identified statistically significant differences between groups on academic performance (i.e., school), suicide attempts (i.e., self harm), and overall global functioning (i.e., total CAFAS).

The absence of significant differences between children with and without comorbidity on school, self-harm, and total CAFAS may be due, in part to the limited number of children in the current sample who were identified as “comorbid” At intake, clinicians have a limited amount of time during which they must take a detailed case history and assign a diagnostic label to a child. One option that clinicians have is to assign a primary diagnosis and then designate a “rule out” label for other diagnoses that

he or she believes may be accurate for the child. This is done when clinicians believe further investigation is needed to eliminate a specific diagnosis. In the current study, children had rule-outs that were not resolved; these rule out diagnoses were not included in the current study. Consequently, the number of children in this sample with two or more disorders may be underrepresented.

Similar to other samples, the current sample contained a majority of comorbid children with externalizing disorders. In particular, a dual diagnosis of ADHD and ODD was common for children with comorbidity in the current study and in past studies. According to one casemanager at the day treatment program, “children with ADHD and ODD tend to be some of the most disrespectful children and it is not always easy to separate behaviors associated with ADHD from those associated with ODD” (personal communication, 2002).

It is important to note that past studies have used different measurement tools to assess functional impairment. For example, studies have used instruments such as the Diagnostic Interview Schedule for children (Costello et al., 1987) and Children’s Global Assessment Scale (Shaffer et al., 1983) to assess functional impairment. For instance, one instrument may use a scale called academic problems to denote problems in school whereas the CAFAS identifies this psychosocial area of functioning as school. In summary, comparing findings from studies that use different instruments is possible, yet difficult.

These results should be evaluated with extreme caution. The proportion of comorbid children in this sample is small. Thus, it is difficult to compare children with

comorbidity to children without comorbidity. A better examination may occur with sample containing a larger proportion of comorbid children.

Medication

The majority of children in the sample used psychotropic medications at intake. The high percentage of children with SED using psychotropic medications is similar to the percentage in other studies (e.g., Milin et al., 2000). In addition, similar to past research, children taking medications were more impaired at intake than those not taking medications. In the current study, children who used medications were more impaired on behavior toward others, home, and total CAFAS.

What does the initial impairment of children taking medication mean? First, children using medications may have demonstrated behaviors significant enough to warrant medication. In essence, they may require medication because they demonstrate a higher degree of functional impairment than children not taking medications. However, this is difficult to assess because this study does not provide information concerning the child's level of impairment *before* beginning medication.

Next, results may be inaccurate because some children in the group using medications may be inappropriately prescribed medications. As research conducted by Angold et al. (2000) indicates, some children may receive medication without meeting the DSM requirement for the illness for which the medication was prescribed. Day treatment staff members have noted a rise in parent's willingness to allow children to take psychotropic medications. Conversely, day treatment staff members have noted a decrease in the number of parents willing to take parenting classes or participate in

parenting groups (personal communication, 2001). Further, day treatment staff members have noted an increase in teachers recommending that children take medications. All of these factors, although anecdotal, may indicate a tendency toward medication for behavioral problems; thus, increasing the probability that children will be incorrectly prescribed medications. Therefore, in order to understand these results, researchers must first determine whether children are in appropriate groups. Unfortunately, that is beyond the scope of this study.

Finally, the researcher did not collect data documenting the type of psychotropic medication, the strength, or the frequency of dosage. The most frequently prescribed psychotropic medications for children are stimulants and antidepressants. These medications are indicated for different conditions and have different reactions on the brain. In addition, data on medication usage were collected at intake; thus, some children not on medication at intake may have started medication during the study. Additionally, some of the children on medication at intake may have discontinued or modified it during the study.

Primary Diagnosis and Primary Diagnostic Dimension

Most children in the sample had an externalizing disorder such as ADHD or disruptive behavior as their primary diagnosis. This finding is consistent with findings in other studies (e.g., Hodges et al., 1999; Milin et al., 2000; SAMHSA, 1999; Svedin & Wadsby, 2000) that examined children with SED. However, what is interesting is that in the current study, the most impaired children were those with internalizing disorders. Specifically, children with disorders such as depression and anxiety had greater

functional impairment at intake than those with externalizing disorders on all of the CAFAS scales except school.

Why were the internalizers the most impaired in every area except school? First, as researchers such as O'Shaughnessy, Lane, and Beebe-Frankenberger (2002) believe, the easiest disorders to identify are those that cause disruptions for others. For instance, children with ADHD may disrupt a classroom setting and children with ODD may disrupt the entire family's functioning. However, as researchers reveal, many children with internalizing disorders are overlooked. For instance, a sullen, yet depressed child who fails to complete her class work may not disrupt classroom processes. Thus, this child may be identified as shy instead of requiring an intervention. Consequently, the children in this sample who present with internalizing disorders may have been referred because their disorder was so severe that it disrupted the classroom or home environments. A review of the correlations between CAFAS scales indicates that the school scale is only correlated with the behavior toward others subscale and total CAFAS scale. Thus, teachers may identify children with the mildest externalizing disorders while only identifying the most severe internalizing disorders because those with the most severe internalizing disorders demonstrate inappropriate and disruptive behaviors. Consequently, teachers may compare the mild or moderate externalizers to the most severe internalizers and not recognize functional differences between the children. In addition, children with internalizing disorders who have been referred to the day treatment program may be more severe than other internalizers to begin with.

It is important to note that the number of children in the sample with internalizing disorders is small and that the sphericity assumption was violated in some tests; therefore, the Greenhouse-Geisser correction was used.

Age

Past research (e.g., Hodges & Wong, 1996; Liu et al., 2001; Zill & Schoenborn, 1990) provided evidence that age was related to functioning. Specifically, older children demonstrated higher levels of impairment. The current study supports this. However, age was related only to total CAFAS, community, and behavior toward others scores and statistically significant differences were noted only between the older age groups.

Of community, behavior towards others, and total CAFAS, the strongest correlation with age was with the community score. The community score has been called the delinquency indicator (Hodges, 1999). Thus, in order to have a high community score, children must have the opportunity to commit acts of delinquency. For instance, younger children are more likely to have supervision; thus, the opportunity for delinquency is reduced. In addition, older children generally use more complex thinking skills to plan acts of delinquency. Thus, the connection between age and delinquency makes sense intuitively. However, why would differences in community score be noted only between the older age groups? For community, behavior toward others, and total CAFAS, the average score for the five to six year olds is greater than the average score for the seven to eight year olds. A possible explanation for this may exist in an analysis of the assessment and referral process. Each group at the day treatment center has a limited number of spaces available. In order to be referred for services, the five and six year olds

must demonstrate impairment that is different from the impairment noted by peers.

Perhaps, five and six year olds in the sample represent extreme cases.

In addition, past studies such as Liu and colleagues (2001) identified that age was related to diagnostic dimension. In the current study, age was not related to whether a child was diagnosed with an internalizing or externalizing disorder.

All diagnoses used in the current study were recent diagnoses; children were assessed within two to four weeks of beginning the intervention. In past studies, researchers may or may not have conducted current assessments; rather, some relied on past diagnoses or diagnoses determined from a third party. In addition, some studies used different diagnostic criteria to identify children with mental health diagnoses. In summary, the discrepancy between age and diagnostic dimension may occur due to inconsistent assessment tools and procedures.

In addition, in psychometric testing, Hodges (1999) demonstrated that the internalizing scales of the CAFAS (e.g., mood and thinking) had lower reliability than the externalizing scales (e.g., behavior toward others). Further, some researchers agree that younger children with certain internalizing illnesses such as depression, have symptoms that are different from the symptoms witnessed in older children. Both of these factors may complicate researchers' understanding of the CAFAS internalizing scales' results for different age groups.

Functioning

At intake, the current sample had a significant degree of functional impairment ($M = 85.74$), with the most prevalent impairment occurring at school and the least

impairment occurring in the community and with self-harm. The current sample's functional impairment at school is consistent with other studies using the CAFAS. However, the high degree of baseline total functional impairment is greater than the amount of impairment identified in other samples.

The high level of overall functional impairment noted at baseline may be influenced by several factors. First, the day treatment serves children from some of the most economically disadvantaged areas in the city. These children are constantly exposed to drug abuse and violence and many have experienced placements in foster homes. Thus, as research confirms (e.g., Reinherz et al., 1993; Tiet et al., 2001), these environmental stresses may increase the severity of functional impairment exhibited by children.

Next, according to a casemanager in the program, "YDT is the last community-based option for some of these kids" (personal communication, 2002). Thus, many higher functioning children labeled with SED may improve with less intensive interventions. Consequently, the children that attend YDT are deemed some of the most behaviorally-disordered by family, school personnel, and staff at less-intensive programs.

The prevalence of impairment at school may be explained by understanding the primary referring agencies. In a parent satisfaction survey ($N = 74$; Lee, 2002), 80% of parents reported that they became aware of YDT from an agency representative or from their child's school. These results indicate that teachers are a primary referral source for the program. Teachers have the opportunity to witness negative behaviors and functioning and refer students to the program. Thus, perhaps the high prevalence of

functional impairment at school is due to the strong role that teachers assume in the referral process.

The absence of impairment in the community and self-harm subscales may have several explanations. First, children with significant impairment are those who have current suicidal ideation and are actively seeking ways to commit suicide. These children require constant supervision; thus, an inpatient care facility is the most appropriate therapeutic setting for them. In summary, children with self harm scores over 20 would require more supervision and therapeutic support than the day treatment program could provide. Therefore, these children with high self harm scores are not permitted to begin the intervention.

The absence of impairment on the community subscale for the sample is due to the age of the children served by the program. Past research identified the community score as an indicator of delinquency (Hodges, 1984) and increases with age. The mean age of the current sample is nine years. Thus, it is possible that the average community score for the sample would increase if the program served an older population.

Changes in Functioning

After participating in the day treatment program, children reduced their total CAFAS score as well as their school, home, community, thinking, behavior toward others, and self-harm scores. This means that nine months after initiating treatment, children had increased functioning in several psychosocial areas, including their social role functioning. The greatest changes occurred with total CAFAS, home, and school

scores. These findings are consistent with past findings evaluating behaviorally-based interventions.

It was hypothesized that there would be an absence of change in scales investigating internal functioning (e.g., moods and emotions and thinking). However, there were statistically significant changes in thinking. This may be due in part to the diverse activities provided by the day treatment program. The day treatment program is predominately behaviorally-based. However, each child participates in a therapeutic group in which he or she is encouraged to verbalize feelings and engage in critical thinking with peers. One premise is that participating in the therapeutic group is beneficial and provides opportunities for children to develop and refine thinking skills. Thus, the day treatment program, although behaviorally-based may have an impact on participants' thinking skills.

Children showed increased functioning on all scales that examined social role performance (school, home, community). This finding may be a result of the social skills education component of the intervention. Social skills education teaches children those skills necessary to interact with others in a variety of settings. In addition, social skills education emphasizes the importance of discerning between formal and informal settings and interactions with peers versus adults. The comprehensiveness of the social skills program increases the probability that children will demonstrate mastery of social skills and be able to transfer these skills from one situation to another. Thus, the finding that all social roles scales decreased is not unexpected.

Gender

As demonstrated in chapter four, initial gender differences were absent from all scales except the school scale. In addition, gender differences were absent throughout the nine-month period; this was true even for school score. This means that we are unable to demonstrate that boys were consistently more impaired throughout the intervention. However, when the combination of gender and time was examined, an interesting finding emerged. The combination of time and gender was significant for school. Boys in the sample had greater net functional improvement (5.34 points) than girls (3.05 points).

Why is the combination of gender and time significant for school? Perhaps day treatment program staff members or school personnel unintentionally treat boys and girls differently over the intervention period. This may be due to different gender expectations for boys and girls. For instance, staff members or school personnel may allow children to play outside during their free play time. Children may have the option of playing touch football, jumping rope, or constructing chalk drawings. These activities tend to be gender-segregated with boys playing football and girls jumping rope or creating chalk drawings. Playing team sports such as football may offer boys increased opportunities to work together in a team. In summary, the day treatment staff and school personnel may unintentionally provide boys with more opportunities to practice certain social skills.

Another premise is that gender role expectations influence the way in which the severity of behaviors is assessed. For instance, the researcher has overheard some day treatment staff members processing with children after mixed-sex physical altercations. During the processing sessions, boys have been warned that, “hitting girls is wrong” or that girls should “act like young ladies and not get into fights.” These actions, while

unintentional, create differing expectations for boys and girls and contribute to the possibility that boys and girls will experience the intervention differently.

Comorbidity

The current results demonstrate that before beginning the day treatment program, differences between children with one disorder and children with more than one disorder existed on the home and community subscales. During the nine months of treatment, these differences remain; however, differences between those with and without comorbidity emerged for the behavior towards other subscale. Further, statistical tests failed to indicate that the combination of time and comorbidity was significant for any scale.

These results indicate that on average, children with comorbidity are more impaired than children without comorbidity in the home and community environments. In addition, children with comorbidity have more difficulty demonstrating appropriate behavior toward others. However, the current study is unable to determine that children without comorbidity improve any faster than children with comorbidity.

These findings may have many implications for children with SED participating in the intervention. First, these findings indicate that differences between those with and without comorbidity existed during the nine months of treatment. However, the statistical analyses failed to prove that children without comorbidity get better faster. Rather, at the end of treatment, the net differences between those with and without comorbidity was less than 1 point for the home and community scales and about three points for the

behavior toward others subscale. This indicates that children with comorbidity, regardless of their baseline scores, can and do improve their functioning.

Medication

There were initial differences between those taking medications and those not taking medications on total CAFAS and the home and behavior toward others subscales. The initial differences remained throughout the nine-month intervention period for total CAFAS, home, and behavior toward others. In addition, during the intervention period, differences between the medicated and unmedicated groups emerged on the school, moods and emotions, and thinking subscales.

What do these results indicate about the differences between medicated and unmedicated children participating in the intervention? First, these results indicate that whether a child takes medication or not has a significant impact on initial and continued functioning for children in the sample. Thus, differences between medicated and unmedicated children persist on total CAFAS as well as the school, home, behavior toward others, moods and emotions, and thinking subscales.

Interestingly, when the combination of medication and time in the day treatment program was examined, significant group differences were apparent only on the home subscale. Specifically, the children who did not take medication had a net change of 0 points on the home subscale whereas the children who took medications had a net change of 5.08 points on the home subscale over the nine-month treatment period. These results indicate that medicated children although more impaired at the end of treatment than unmedicated children, improved at a faster rate than unmedicated children.

There may be several explanations for this. One explanation is that parents of those children on medication have more contact with the day treatment staff and during this contact, parents are provided with additional opportunities to receive parenting education. For instance, the parents of children on medication must speak regularly with the day treatment staff to (a) provide current instructions on how to administer their child's medication, (b) inform them of any medication changes, and (c) discuss any unanticipated side effects of the medication. During discussions, YDT staff members listen, provide encouragement when needed, and discuss behavioral interventions that parents may implement at home to supplement the day treatment program.

Another plausible explanation is that the medication provides a sense of normalcy for the child and this translates into better ability to control negative impulses or behaviors. However, if this explanation was correct, a greater rate of improvement would be identified in other subscales besides home.

It is important to mention that these results may actually be influenced by regression toward the mean. Regression toward the mean is the tendency extreme scores to move towards the actual population mean with repeated testing. For example, some of the movement seen by those using medication may be a result of the natural progression towards the true population mean. For discussion of this phenomenon see Streiner (2001).

Primary Diagnostic Dimension

There were initial differences between those with internalizing disorders and those with externalizing disorders for total CAFAS and all of the CAFAS subscales except school. However, after nine-months of treatment, these differences remained for

total CAFAS, community, and behavior toward others, self-harm, and thinking. Finally, when the combination of diagnostic dimension and time was examined, there were statistically significant differences between those with internalizing and those with externalizing disorders for total CAFAS, home, and self-harm subscales. On total CAFAS, internalizers had a net improvement of 41.67 points and externalizers had a net improvement of 6.18 points. On home, internalizers had a net improvement of 8.82 points and externalizers had a net improvement of 2.33 points. On self-harm internalizers had a net improvement of 5.88 points while externalizers had a net improvement of less than one point (.91 points).

Similar to the findings regarding medication, these results must be evaluated with caution. The differences in improvement rates between internalizers and externalizers may be influenced by regression toward the mean.

Importance of Study Results to Social Work Practice

This study is important to social work practice and knowledge building. As primary mental health practitioners, social workers are sometimes faced with situations deemed as hopeless by many in popular culture. For instance, the population of children labeled as SED is stigmatized and marginalized and identified as a population of “criminals” or “hopeless delinquents” without a thorough understanding of their circumstances or their capacity for improvement. This study demonstrates that (a) moderate to severely impaired children have the capacity to improve, (b) children may demonstrate poor functioning in areas while improving in others, (c) children ending the program with moderate impairment (40- 60 point CAFAS) should not be considered

“program failures,” rather, they may have made significant functional gains. In addition, this study illustrates that some of the most impaired children may improve at a faster rate than those with mild or moderate impairment. Thus, children labeled as SED are not hopeless; rather, with intervention, they have the ability to make significant improvements and social workers can have an important role in these improvements.

Of particular importance is that this study identified certain characteristics that influence functioning. Specifically, this study identified two characteristics, medication use and diagnostic dimension, that are influential to participant functioning. As a result of this study, staff members may consider medication use and internalizing disorders as risks for poor current functioning for children with SED. Thus, this evaluation increases social workers’ understanding of the role that medication and diagnostic dimension play in functional impairment.

Finally, the current study demonstrates that even three months of treatment is beneficial to children with SED. The CAFAS can detect changes in functioning at three month intervals. Most studies using the CAFAS (Hodges, 1996; Hodges, 1997; SAMHSA, 1999) assess children at six month intervals. However, shortening the time between assessments demonstrates that short periods of treatment (e.g., three months) can produce positive changes in functioning.

Recommended Program Changes/Maintenance

The day treatment program is a worthwhile intervention. Upon program completion, children have increased functioning in several psychosocial areas. In addition, it appears that there are some characteristics that may increase the likelihood of

success in the program. However, conducting this study revealed several areas for improvement.

First, the program needs to reevaluate the assessment process. Children are assessed at the central office and then sent to the day treatment facility. At best, the therapeutic staff may have one and a half to two hours to assess and diagnose a child. The therapeutic staff members realize the probability of mistakes; therefore they make “rule out” designations for clients with the understanding that these designations will be reconciled within a reasonable amount of time. However, many times these cases are not reconciled. A realistic change would be for master’s level day treatment staff members to evaluate “rule outs” and make a final determination about their accuracy.

The current study provides information concerning the role of teachers in the lives of children with SED. Teachers, whether intentional or unintentional have assumed a significant role in the identification of children for YDT services. Therefore, the program needs to ensure a few things. First, the program needs to continue to communicate with teachers and remain receptive to referrals. Next, the program needs to ensure that children with internalizing disorders are referred without overburdening teachers or alienating them. One way in which this may be accomplished is to network with principals and offer to provide speakers for teacher trainings or in-services. This suggestion is feasible; YDT staff currently makes visits to school as a part of their case management role. In addition, the YDT staff has begun to develop partnerships with school principals. These efforts should be expanded to include education on SED.

Next, the current study demonstrates that children completing the primarily behaviorally-based day treatment program improve their thinking ability. Improved thinking means that children have the capacity to learn new coping skills; thus increasing the ability that positive changes will remain even after discontinuing the intervention. The YDT staff should ensure that children have increased opportunities to process with staff and receive interactive social skills education that includes an age-appropriate critical analysis component. These changes would increase children's ability to increase their thinking ability within a predominately behaviorally-based intervention.

The current study reveals that there are opportunities for the day treatment staff to incorporate the strengths perspective into the assessment and monitoring processes. For instance, day treatment staff members fail to utilize those scales on the CAFAS that identify client and caregiver strengths and resources. Consequently, the assessment and monitoring processes are guided by a "deficit model of functioning." Staff members must receive training on identifying client and caregiver strengths and how to integrate these into the therapeutic process.

Finally, the YDT staff must recognize the limitations of the program. Children make significant increases in functioning. However, may leave the program with an average CAFAS score between 40- 60 indicating a moderate degree of functional impairment. Staff members must realize that positive changes may be observed even in children still exhibiting functioning identified as "moderately impaired."

Recommended Policy Changes

The current study reveals the need for an examination of current policies that affect children labeled as SED. First, as mentioned in Chapter 2, there are numerous ways in which systems identify children with emotional or behavioral difficulties. As a result, children with difficulties may be eligible for services in some systems and omitted in others. A new definition of SED should be developed, one that incorporates the existing definitions used by different systems. This would increase the criterion validity of the SED label and increase the probability that children with emotional or behavioral difficulties would be properly identified and enrolled in appropriate services.

In addition, policies that encourage collaboration between agencies should be developed. For instance, the system-of-care philosophy discussed in Chapter 1 has demonstrated effectiveness in work with children with SED. However, not all agencies or systems have the human and financial resources to cultivate and maintain these partnerships. Policies that allocate additional funding and training for agencies willing to collaborate would increase the feasibility of sustainable partnerships.

Finally, national policies that require agencies working with children with SED to have measurable objectives and demonstrate effectiveness are needed. For instance, funding for the day treatment program is related to how many contact hours are spent with clients. The day treatment program requires casemanagers to administer the CAFAS, but these results are not tied to funding. In addition, before this evaluation, the CAFAS results were evaluated only by the individual casemanagers working with their individual clients. Thus, day treatment staff did not have the ability to determine if the group of clients was different after experiencing the program.

Linking funding to program success would increase the probability that (a) staff members would be motivated to use empirically proven interventions, (b) programs would hire qualified staff to administer services, and (c) programs would be required to collect and examine outcome-based data. In addition, linking program success to funding would make agencies more willing to network with agencies that have proven program effectiveness. Each of these would improve programs for children with SED.

Future Research

The future of the profession of social work depends on the conceptualization and commencement of theoretically sound basic and applied research. The current study increases the knowledge base concerning children with emotional and behavioral disorders. However, there are gaps that future research could ameliorate. First, additional research evaluating social work interventions for children with SED is needed. In particular, research examining the long-term effects of interventions on children *and* their families. Researchers such as Svedlin & Wadsby (2000) evaluated children four years after attending a day treatment program, but they did not include information about how or if the child's participation in the program influenced long-term family functioning. Also, the current research study shows that there were differences in the level of functioning based on medication status or diagnostic dimension. Research is needed to determine whether these variables maintain their importance upon termination from the program.

This study investigated the functioning level of children participating in an intervention and the variables that influenced functioning. However, what is missing is an

investigation of the interaction of the study variables. This study was guided by the needs of the program administration; thus, understanding the interactive effects of variables was not part of the study's goals. Nevertheless, a future study examining the interaction would produce specific information regarding the patterns of influence of specific variables.

Next, the current study stimulates thinking concerning children's performance at school, home, and in the community. In the current study, the school scale had several peculiar qualities; qualities not noted in other scales. For instance, gender differences were noted only on the school scale and the school subscale was not as strongly correlated with other CAFAS subscales. Past research studying the intercorrelations between CAFAS subscales (Hodges & Wong, 1996) identified correlations between most of the subscales. However, Hodges and Wong conducted the analyses by collapsing the school, home, and community subscales into the "role subscale." Consequently, the school subscale was not analyzed alone. The current study's results indicate that there may be differences between the scales classified as social role indicators. Future research should explore this possibility.

The current study raises questions regarding how children are classified into groups for service. At the day treatment program, children were divided in age-related peer groups without regard for diagnostic dimension or medication status. The current study demonstrates those with internalizing disorders and those taking medication were more impaired. Research investigating whether forming age-related peer groups based on

medication status or diagnostic dimension provides additional improvements in functioning is needed.

Finally, additional research is needed that continues to examine the risk factors contributing to a label of SED and how to reduce their influence. The recent increase in numbers of children may indicate that social workers and other human service professionals lack the information necessary to stem the increase. Further, understanding the risk factors associated with SED mandates that social workers and other helping/human service professionals create interventions that address the environment as well as the individual child. This may include providing therapeutic interventions to the entire family, not just the individual child and may also include working with systems in a child's life such as the school to increase environments which reduce exposure to risk factors.

In summary, studying risk factors forces social workers to reevaluate their professional role. The recent trend has been for social workers to focus on clinical practice instead of policy or planning and administrative practice. The result is that there are few social workers (an exception being NASW's legislative body) advocating on a national level to improve the environments in which children live. Reviewing the literature concerning risk factors clearly demonstrates a link between environmental situations and the individual child. If social workers are to reduce the prevalence of children with SED, they must become involved in advocacy, program development, and evaluation. In essence, understanding individual and environmental risk factors means that social workers must broaden their roles.

Study Limitations

There are several limitations in this study. Many have been discussed throughout the individual chapters. However, a thorough discussion of these limitations is necessary. First, the absence of a control group means that it is impossible to indicate whether the intervention alone caused changes in the sample. However, the study design was important because it did answer questions that funders required. Funders wanted to know whether those participating in the program were different after at least six months of treatment. This study, although limited, did answer that question.

Next, the researcher served as the primary evaluator for this project and this may have influenced the objectivity of this study. The researcher did not administer the CAFAS to any clients; however, there is still the possibility that her knowledge of the program may have influenced her interpretation of the results. In order to minimize this possible effect, the researcher had two peers review her findings and provide feedback concerning the results. However, it is important to acknowledge that the “proximity” of the researcher to the results has the possibility to influence the interpretation.

Another limitation of this study is the nonprobability sample. This limited the ability to generalize the results to the entire population of children with serious emotional disorders. Also, the statistical tests used were more appropriate for probability samples.

Another limitation of this study involves the way in which initial data were collected. Each casemanager was trained to administer the CAFAS to his or her clients. Therefore, there were six persons administering the instrument. Casemanagers participated in a rigorous CAFAS training; however, as Hodges (1999) mentioned, the

CAFAS does require a small degree of subjectivity. Thus, different persons administering the CAFAS may have inadvertently influenced results.

There was some missing subscale data. These data were missing because the original completed instrument was misplaced. Therefore, the sample size for some analyses differed from the total sample size ($N = 101$).

The demographic data used were the data indicated at intake. For example, if clients took medication at intake they were part of the medicated group. However, this did not take into account that clients may have changes medication statuses during the nine month treatment period. For instance, clients may have switched medications or stopped or started medications during the intervention period. In addition, as mentioned previously, rule out diagnoses were not resolved at the time that the intervention began.

According to Campbell and Stanley (1963), “history” is the greatest threat to internal validity in this design. It is difficult to determine whether changes in the dependent variable are caused by the intervention or whether these changes are a result of external influences (e.g., history) acting upon the dependent variable. In the current study, history was a concern because according to the literature, children with SED experience a greater probability of significant life events than non-SED children. It is not possible to determine whether these events or history contributed to the identified changes.

Other potential threats to the internal validity of the longitudinal design include the effects of mortality and testing. Mortality occurs when research participants leave the study whether voluntarily, such as they decide to discontinue treatment, or involuntarily,

such as death or moving to a different school district (Rubin & Babbie, 2001). Approximately 10 to 15% of children participating in YDT end treatment prematurely. This may occur because a child moves out of the school district, refuses to attend treatment, or is deemed inappropriate for treatment by YDT staff. However, mortality was not a problem for this study. In order to be included in the sampling frame, clients had to attend YDT for at least six months. If a child was inappropriate for the program, he or she was referred to other services within one month of beginning YDT. Thus, clients who were not appropriate for YDT or did not attend for at least six months were not included in the study.

The testing effect occurs due to repeated testing (Rubin & Babbie, 2001). Participants become familiar with the instrument and their familiarity skews the results that participants give. However, the training that casemanagers received and the way in which they completed the CAFAS, reduced the occurrence of the testing effect. Casemanagers participated in eight hours of CAFAS training that taught them how to engage parents in conversations that were non-confrontational. Thus, parents were more comfortable, more engaged in the process, and more likely to give candid and honest answers instead of merely repeating previous responses.

Finally, an important limitation to discuss concerns multiple hypothesis testing. The current study used a single dataset to test multiple hypotheses. Multiple tests conducted on the same data may increase the risk of type I errors (for a discussion of this phenomenon see Tabachnick and Fidell, 2001). For example, the current study contains 24 hypotheses that are tested using either t-test or ANOVA analyses. Using a .05 level of

significance, the expected number of spurious results is $24(.05)$, or 1.2. In order to correct for this, a Bonferroni type adjustment was made. Specifically, in order to set the entire set of tests at .05, the alpha level (.05) was divided by the number of tests (24). Thus, the Bonferroni type adjustment alpha level was established as .0021.

In summary, different results are ascertained using the Bonferroni alpha level of .0021 instead of the alpha level of .05. Specifically, the Bonferroni correction reduces the number of hypotheses that are upheld. Some researchers (e.g., Perneger, 1998; Sankoh, Huque & Dubey) write about difficulties of the Bonferroni method. Specifically, these researchers caution that the Bonferroni correction may be too conservative and increases the risk of Type II errors in which true differences are not detected. In the current research, the Bonferroni correction was not used because the hypotheses were expected to be related. However, it is important to mention the Bonferroni correction and the limitations possibly caused by multiple hypothesis testing.

Final Summary

Children with SED represent a distinct subset of children with mental health challenges. These children have identifiable impairment across a range of psychosocial areas. Without treatment, the current and future ability of these children to successfully contribute to their communities is diminished.

The current study demonstrates that the Youth Day Treatment Program is an effective intervention for children with SED. After completion, children increased their overall functioning as well as their functioning at school, home, and in the community.

Children increased their positive behaviors towards others as well as their thinking. In addition, children participating in the intervention decreased their self harming behaviors.

This study advances social work by increasing the knowledge base on children with SED. In addition, this study stimulates additional research questions that require examination.

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