

EXAMINING THE EFFECTIVENESS OF SOCIAL
SKILLS TRAINING AND PARENTING
SKILLS TRAINING IN THE
RURAL SCHOOLS

By

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2003

Submitted to the Faculty of the
Graduate College of the
Oklahoma State University
in partial fulfillment of
the requirements for
the Degree of
DOCTOR OF PHILOSOPHY
December, 2006

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ACKNOWLEDGMENTS

I would like to extend my sincerest gratitude to my adviser and mentor Melanie C. Page, Ph.D., for her patience, encouragement, and guidance throughout this process. Additionally, I wish to express my appreciation to my committee members, Maureen Sullivan, Ph.D., Douglas Scambler, Ph.D., and Amanda Harrist, Ph.D. whose guidance, assistance, and suggestions were also invaluable.

I would also like to thank the Oklahoma Psychological Association (OPA) for their generous financial contributions to this study. In addition, I would like to extend my gratitude to the Peer Relationships: Intervention, Development, and Evaluation (PRIDE) team for their assistance. Also, I wish to express my gratefulness to the graduate students who served as therapists for this project and to the research assistants who assisted with coding. Their willingness to help and their contributions to this project will always be remembered. Moreover, I would like to express my appreciation toward the participants in this study.

Additionally, I would also like to thank my family for keeping me balanced and being a constant reminder of my roots. I also want to thank my close friends and confidants who have shared in all my successes and failures, and still managed to find me bearable. I hope we always grow together. Finally I would like to give my special thanks to my fiancé, David Metzger, for being my constant throughout this soul-forming experience and reminding me in subtle ways of what's most important in life.

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NOMENCLATURE

| | |
|------------|--|
| ADHD | Attention-Deficit/Hyperactivity Disorder |
| ADHD-C | Attention-Deficit/Hyperactivity Disorder, Combined Type |
| ADHD-I | Attention-Deficit/Hyperactivity Disorder, Inattentive Type |
| AGG | aggression scale on the BASC |
| ANOVA | one way analysis of variance |
| BASC | Behavior Assessment System for Children |
| BSI | Brief Symptom Inventory |
| CD | Conduct Disorder |
| <i>df</i> | degrees of freedom |
| ECBI | Eyberg Child Behavior Inventory |
| <i>F</i> | <i>f</i> statistic in ANOVA |
| HYP | hyperactivity scale on the BASC |
| <i>M</i> | mean |
| <i>N</i> | total number of participants in sample |
| <i>n</i> | total number of participants in subsample |
| η_p^2 | partial eta squared |
| ODD | Oppositional Defiant Disorder |
| <i>p</i> | <i>p</i> level for statistical significance |
| PSI | Parenting Stress Index |

| | |
|-----------|--|
| PT | parent training |
| <i>SD</i> | standard deviation |
| SESBI-R | Sutter-Eyberg Student Behavior Inventory-Revised |
| SS | total social skills standard score on the SSRS |
| SSRS | Social Skills Rating System |
| SST | social skills training |
| χ^2 | Chi square statistic |

CHAPTER I

Introduction

Disruptive behavior problems, including aggression and violence, are related to numerous difficulties for children within the school environment, including poor academic functioning and peer relationship problems (Barkley, 2003). In addition, disruptive behaviors not only affect the target children, but also their classmates and family members. However, research indicates that interventions aimed at increasing social skills and decreasing aggression among this population are effective (Kazdin, 2003a). Specifically, social skills programs increase the child's repertoire of skills needed to succeed within the school environment, both academically and socially, by improving problem-solving skills (Kazdin, 2003b).

Although a degree of noncompliance, defiance, and aggression is developmentally normative for young children, a small percentage of children experience an increase in disruptive behavior across development, causing significant impairment in social and academic functioning (Kazdin, 1995; Loeber & Hay, 1997). Externalizing behavior disorders, including those in the *Diagnostic and Statistical Manual of Mental Disorders* (4th ed. text revisions; *DSM-IV-TR*; American Psychiatric Association [APA], 2000) as Attention Deficit-Hyperactivity Disorder (ADHD), Oppositional Defiant Disorder (ODD), and Conduct Disorder (CD) are characterized by social behaviors that negatively impact self or others and are the most frequently diagnosed conditions in

mental health facilities for children. Further, children with chronic social difficulties are at high risk for social and emotional problems that continue into adolescence and adulthood (Bloomquist, 1996). Ultimately, seriously aggressive and disruptive children have intense negative effects on others as they victimize peers, disrupt teachers in the classroom, and frustrate parents (Lochman, Whidby, & Fitzgerald, 2000). In addition to social skill deficits contributing to child maladjustment, parental variables have been identified to influence child behavior. Most importantly, poor parenting skills, parent stress, and parent psychopathology have all been noted to adversely affect children's social functioning (Rodgers, 1998).

Many children who have social difficulties simply do not understand how to behave in social situations (Bloomquist, 1996), and often resort to disruptive behaviors for attention (McMahon & Wells, 1998). Further, children with disruptive behavior disorders suffer from a wide range of social problem-solving deficits (Dunn & Herrera, 1997; Lochman & Dodge, 1994). Fortunately, research indicates that social skills training results in reduced disruptive behaviors and improved peer acceptance, with gains often maintained long after the intervention ends (Bierman, 1989). Pfiffner and McBurnett (1997) found that an 8-week social skills training intervention led to gains in children's skill knowledge and to significant improvements in parent reports of social interactions and behavior problems in the home. Additionally, social skills training for children with ADHD or ODD has been shown to reduce teacher reports of aggression and withdrawal (Frankel, Cantwell, & Myatt, 1996). Likewise, evidence suggests that social skills and problem-solving training can decrease aggressive behaviors at home or in school (Kashani, Jones, Bumby, & Thomas, 1999). Furthermore, Smith, Larson, and Knuckles

(2006) found that 28 independent school-based violence prevention programs reduced aggressive behaviors. Some researchers suggest that a combination of parallel child social skills groups and parenting skills groups result in the most promising outcomes (Kazdin, Siegel, & Bass, 1992). Such a multimodal approach has been shown to not only decrease child behavior problems, but also to improve parenting behaviors (Webster-Stratton & Hammond, 1997). However, the literature examining the implementation of such programs in the rural community is lacking. Further, few studies provide adequate controls or thorough program evaluation for interventions within the school setting.

Although several school-based social skills intervention programs have been examined, there is an apparent lack of controlled studies. Further, the need exists for the collection of multi-informant follow-up data, which is necessary to demonstrate long-term effectiveness of interventions. Finally, the literature neglects the considerable behavioral difficulties experienced by rural school-age children. Combined, these limitations within the previous research attest to the need for the scientific evaluation of interventions for the rural school environment.

To address the limitations of previous research and expand the scientific knowledge within this area, the current study is an outcome evaluation of manualized school-based social skills groups and parenting skills groups. As an extension service of the Psychological Services Center (PSC) at Oklahoma State University, the current study offered group social skills training and group parenting training for children in grades 3 and 4 who attend the Cushing public schools and who have difficulties with peer relationships, teacher relationships, or a combination of both. Specifically, the groups will

target children who demonstrate at-risk or significant levels of behavior problems, such as aggression, impulsivity, and hyperactivity.

Moreover, the findings from this study will contribute to the small body of research attesting to the need to evaluate the efficacy of social skills training and parenting training in rural-area school children. Therefore, it is particularly socially significant as it is intended to provide services to a highly underserved population. In doing so, this study will raise awareness for the importance of increasing intervention services for disruptive children of diverse backgrounds. Additionally, evaluating the effectiveness of social skills training and parenting skills training will allow for greater adaptability of the intervention to the needs presented by this population. This will be aided through the collaboration of parents, the school system, and a community agency.

It is also expected that results from the current research can be used to further develop low cost intervention programs that improve functioning of the child in the school and home environment. Thus, it is expected that information gathered from this study will be integrated into future intervention programs to increase the likelihood of successful outcome for participants. Lastly, the study aimed to promote school-based programs that aid children with disruptive behaviors, as individual participants are expected to benefit from a decrease in problem behaviors that may interfere with their functioning.

CHAPTER II

Literature Review

Externalizing behavior problems have the highest rate of mental health referrals in comparison to all other childhood disorders (Achenbach & Howell, 1993). To better understand the complexity of issues faced by children with externalizing behaviors, it is important to briefly review the diagnostic criteria and definitions of these behaviors, explore their suspected etiology and developmental progression, as well as consider the theories behind the maintenance of these behaviors. Although an in-depth analysis of these areas is beyond the scope of the current project, it is important to describe the nature of the problems that the interventions in question target. Additionally, the state of the current research on effective interventions for disruptive behaviors in children will be presented. Finally, the programs of interest for evaluation in the current study will be discussed.

Externalizing Behavior Problems

Definitions

Externalizing behaviors refer to an aggregate of behaviors encompassing noncompliance, aggression, destructiveness, impulsiveness, hyperactivity, and antisocial behaviors (e.g., Achenbach & Edelbrock, 1978; Achenbach & Howell, 1993). According

to the *DSM-IV-TR* (APA, 2000), numerous externalizing symptoms fall under the scope of disruptive behavior disorders for children, more specifically ADHD, ODD, and CD. The essential feature of ODD is “a recurrent pattern of negativistic, defiant, disobedient, and hostile behavior toward authority figures that persists for at least 6 months” (APA, 2000, p. 100), while the essential feature of CD is “a repetitive and persistent pattern of behavior in which the basic rights of others or major age-appropriate societal norms or rules are violated” (APA, 2000, p. 93). Therefore, CD is considered by several researchers to be a more severe expression of antisocial behavior that supersedes ODD (e.g., Lahey, Loeber, Quay, Frick, & Grimm, 1992), as it includes aggressive behaviors toward others. In regards to ADHD, the *DSM-IV-TR* identifies essential features as “a persistent pattern of inattention and/or hyperactivity-impulsivity that is more frequent and more severe than is typically observed in individuals at a comparable level of development” (APA, 2000, p. 85). Despite the categorical representations of disruptive behavior disorders, some researchers (Farmer, Compton, Burns, & Robertson, 2002; McMahon, 1994) cluster externalizing behaviors by the two primary manifestations called conduct problems (i.e., ODD, CD, antisocial behavior, aggression) and impulsivity/hyperactivity (i.e., ADHD). Because these groupings of behaviors are more inclusive for children who exhibit several externalizing behavior symptoms but may not meet clinical diagnostic criteria, the following discussion of etiological factors will examine externalizing behaviors as included in one of the two broadband categories of conduct problems and impulsivity/hyperactivity.

Etiology of Disruptive Behaviors

The current literature identifies several factors related to the development of conduct problems and impulsive/hyperactive behaviors. It is important to note that separate pathways for the development of conduct problems and impulsive/hyperactive behaviors have been proposed, with little genetic evidence emerging as a causal factor for conduct problems, while genetic links to ADHD are quite abundant. Although not discounted as a factor for the development of conduct problems, currently there is little evidence for a genetic basis for these problems. Genetic contributions to childhood aggression appear to be relatively small (Jacobson, Prescott, & Kendler, 2002) and psychobiological influences are at best inconclusive (Hinshaw & Lee, 2003). Instead, a large emphasis is placed on the multifaceted and transactional causal factors for conduct problems (Coie & Dodge, 1998; Hinshaw & Lee, 2003). The literature concerning underlying factors for conduct problems converges on environmental factors. Most importantly, high levels of parental psychopathology, poverty, poor family functioning, dysfunctional parent-child interactions, and child abuse are thought to play a role in the severity of conduct problems in children (Coie & Dodge, 1998). Associated variables with conduct problems include, but are not limited to, cognitive deficits (Moffit & Lynam, 1994), difficulties in social-cognitive information processing (Crick & Dodge, 1994), and peer rejection (Coie & Dodge, 1998).

For impulsive/hyperactive behaviors, strong evidence for genetic and neurological factors exists, with family and social adversity likely contributing to comorbid conditions and developmental trajectories (Barkley, 2003). Research suggests possible genetic risks for executive brain functioning deficits in families of children with ADHD (Seidman,

Bierderman, Faraone, Weber, & Ouellette, 1997). Although psychosocial factors are largely dismissed as possible causes for ADHD, they are credited with the expression of severity of the symptoms (Pfiffner, McBurnett, & Rathouz, 2001). Associated developmental problems include impaired motor coordination, impaired academic functioning (especially reading, spelling, and arithmetic), and reduced intelligence (Barkley, 2003), as well as maladaptive parent-child interactions (Barkley, Fischer, Edelbrock, & Smallish, 1991), poor teacher relations (Barkley et al., 1990), and social skills deficits (Erhardt & Hinshaw, 1994).

In summary, conduct problems appear to be most associated with environmental factors. Hyperactivity/impulsivity seem to be highly related to genetic factors. Despite this, the associated developmental difficulties with both types of behavior problems are interestingly similar in nature.

Developmental Trajectories

Conduct Problems. Although prevalence rates vary depending on definitions of conduct problems, in a literature review conducted by Hinshaw and Lee (2003), prevalence rates in studies of children and adolescents with ODD ranged from 1% to more than 20%, while rates for CD ranged from less than 1% to over 10%. The progression of conduct problems appears to remain somewhat stable from early childhood to later childhood (Broidy et al., 2003; Campbell, 1991; Olweus, 1979). Furthermore, studies have shown that ODD characteristics emerge 2 to 3 years earlier in childhood than do CD symptoms (Lahey et al., 1997; Loeber et al., 1992; Loeber & Farrington, 2000), with the average age of onset for ODD being 6 years compared to 9

years for CD behaviors. Although some evidence exists that ODD is a developmental precursor to CD, a majority of children with ODD symptoms never develop the more severe conduct problems associated with CD (Loeber, Lahey, & Thomas, 1991). Adding evidence to this latter finding, Frick et al. (1993) conducted a meta-analysis of factor analyses of disruptive child behaviors, resulting in four clusters of conduct problems: oppositional, status violations, property violations, and aggression. The behaviors were categorized by the overlay of two continuums representing the dimensions of overt-covert behavior and destructive-nondestructive behavior. As the majority of ODD symptoms fell into the quadrant of overt-nondestructive behaviors, Hinshaw and Lee suggest that ODD appears to be a separate and coherent pattern of behaviors from other antisocial behaviors.

Concerning the developmental pathways of conduct problems, the early starter and late starter pathways are becoming increasingly accepted (McMahon, 1994) and are reflected in the CD subtypes of Childhood-Onset and Adolescent-Onset in the *DSM-IV-TR* (APA, 2000). The early starter pathway is characterized by conduct problems and social skills deficits originating in school-age years with increasingly severe behaviors developing through adolescence and adulthood. This is evidenced by results from the Oregon Youth Study (OYS) longitudinal data demonstrating that antisocial behaviors by boys in grade 4 significantly predicted future delinquency (Patterson, Capaldi, & Bank, 1991). The early starter pathway is thought to consist of a relatively small group of children, mostly boys, who are at high risk for accelerated and chronic conduct problems and psychopathology (Moffit, 1993).

On the contrary the late starter pathway represents a larger group of children and is thought to begin in adolescence rather than childhood, consist of less serious conduct problems, be influenced by a deviant peer group, and have a short duration (Moffit, 1993; Patterson et al., 1991). The tendency for late starters is to experience a surge of antisocial behavior during adolescence; however, they are supposedly at less risk for chronic offending and continued conduct problems into adulthood, as they presumably possess higher levels of social skills. Further, this same research has demonstrated that late starters do not have the childhood history of cognitive deficits, learning difficulties, preexisting family adversity, or motor skill problems such as early starters exhibit (Patterson et al., 1991).

Conclusions regarding the viability of the early and late starter models, although gaining in popularity, are also challenged with competing models. Specifically, Loeber and Hay (1997) found evidence identifying three developmental pathways for conduct problems. These included the Overt Pathway with increasing levels of aggression, the Covert Pathway with concealed problem behaviors, and the Authority Conflict Pathway with oppositional and avoidance behaviors towards authority figures. Much like the early starter model, the overt pathway is thought to better describe children who experience a temporal escalation of conduct problems over time than those who are experiencing transitory or temporary ones. Thus, regardless of the model used to explain the progression of conduct problems, the prognosis appears to worsen with signs of early aggressive acts that are likely to predict more severe problems over time (Moffit, 1993; Serbin, Schwartzman, Moskowitz, & Ledginham, 1991).

Impulsivity/Hyperactivity. In a literature review by Barkley (2003), prevalence rates for children with ADHD ranged from 2% to 7.9% based on varying definitions of the disorder. According to McMahon (1994), research concerning the developmental course of ADHD is lacking. Barkley agrees that discontinuities in measurement of outcomes make it difficult to discern clear evidence of the developmental course of ADHD. However, the suggested typical course of ADHD occurs before age 7, with signs of hyperactivity being apparent before symptoms of inattention. The noticeable difficulties with inattention are thought to be revealed as children encounter growing demands for concentration and organization as they progress through school (Applegate et al., 1997). Although ADHD symptoms as defined by the *DSM* are thought to decrease in severity over its developmental course, levels remain well above those experienced by normal children, implicating ADHD as a “developmentally relative deficiency” (Barkley, 2003, p. 98).

Comorbidity of Disruptive Behaviors Conduct problems and impulsivity/hyperactivity have a well-established pattern of co-occurrence. Research suggests that between 54% and 67% of children with ADHD will have comorbid ODD by age 7 years (Loeber, Burke, Lahey, Winters, & Zera, 2000), and with similar rates of comorbidity continuing through adolescence (Barkley et al., 1990). In addition to ODD, ADHD has a high co-occurrence with CD, between 20-50% in children and 44-50% in adolescents by some accounts (Barkley et al., 1990). Offord, Boyle, and Racine (1991) found a 60% comorbidity rate between CD and hyperactivity in a sample of children ages 4 to 11 years, although comorbidity for older children ages 12 to 16 years was significantly lower. Some researchers posit that global dysfunctional patterns of

comorbid conduct problems and impulsivity/hyperactivity in children are associated with a greater degree of social dysfunction and school maladjustment (Stormshak, Bierman, Conduct Problems Prevention Research Group [CPPRG], 1998). However, other researchers have begun to explore the specifics of the developmental pathway for comorbid behaviors and suggest that chronic offenders follow a developmental pathway that begins in the preschool years with hyperactivity and oppositional behavior, advancing to aggressive behavior in the school years, and evolving in adolescence to various forms of delinquency. Nagin and Tremblay (1999) found that early physical aggression emerged as a distinct risk factor for predicting later violent offending when controlling for chronic oppositional behavior and hyperactivity.

Theories for the Maintenance of Disruptive Behaviors

As discussed, there are several possible causal factors and developmental pathways for conduct problems and impulsive/hyperactive behavior in children. Despite the contributing influences to the initial appearance of the disruptive behavior, their maintenance may depend on complex cognitive processes and environmental interactions. Two such well-researched mechanisms for continued behavior problems are described below.

Social Information-Processing

Research findings suggest that children with disruptive behaviors experience extensive social-cognitive distortions, deficiencies, or a combination of both (Lochman & Dodge, 1994). Kendall (1985) defines cognitive deficiencies as “an insufficient amount

of cognitive activity” (p. 36) and cognitive distortions as “misperceptions” (p. 36). The social information-processing model describes how these cognitive difficulties combine with emotional processes and social contexts to result in socially incompetent behavior for children (Crick & Dodge, 1994; Dodge & Crick, 1990; Dodge, Pettit, McClaskey, & Brown, 1986; Lemerise & Arsenio, 2000). The model incorporates encoding and interpreting social cues, developing goals for the desired outcome, accessing memory for previous responses or constructing a new response, evaluating the appropriateness and effectiveness of the response, and choosing a response to enact (Crick & Dodge, 1994). Additionally, Lemerise and Arsenio purport that an individual’s typical intensity of emotions combined with the regulation of emotions ultimately influences their ability to process social information and make decisions in social situations. Evidence supports that children with disruptive behaviors not only exhibit misinterpretations during the cue detection and attributional phases of social information-processing, but also show maladaptive skills in generating and executing effective solutions to problems (Coie & Dodge, 1998; Lochman, Whidby, & FitzGerald, 2000). The process is further governed by the child’s perception of affective cues from the peer and the affective nature of the relationship with the peer, as well as the child’s own level of empathic responsiveness. Moreover, as children’s disruptive behaviors increase in severity, they experience a greater inability to recognize important social and affective cues, which further inhibits their ability to competently perform the subsequent information-processing steps (Lochman & Dodge, 1994).

Thus, using the social information-processing model, the maintenance of disruptive behaviors becomes apparent. A child who displays disruptive behaviors at a

young age may develop cognitive distortions and deficiencies that ultimately affect social competence through poor social problem-solving skills and poor emotional regulation. The solutions resulting from these maladaptive processes are then incorporated into the child's behavioral and emotional repertoire for use in future social contexts, further perpetuating the cycle of social incompetence and troubled relationships with peers. This pattern holds true for both peer-related performance and responses to authority directives (Dodge & Price, 1994). Unfortunately, this cycle of disruptive behavior can ignite a series of negative interactions with important authority figures in the child's social environment.

Coercive Parent-Child Interaction

Previous research indicates that family risk factors (i.e., family stress, family conflict, and parent psychopathology) are related to externalizing behaviors in children (Kazdin, 1995; Prevatt, 2003). Of these risk factors, family conflict has been repeatedly indicated in the literature as a direct contributor to the maintenance of disruptive behaviors. One of the most comprehensive models of negative parent-child interactions is the coercion model by Patterson (1982, 2002; Patterson, Reid, & Dishion, 1992). In this model, the exchanges between the parent and child become increasingly coercive and cyclical in nature, further intensifying the child's disruptive behaviors and the parent's inconsistent discipline practices. As part of the cycle, the parent reacts to the child's expression of disruptive behavior with nonresponsive discipline (e.g., concession to the child's defiant and aggressive behavior), aggressive responses (e.g., yelling, threatening, hitting), or a combination of both practices. The use of aggressive responses results in

temporary cessation of the child's negative behavior, which reinforces the parent to engage in such discipline practices in the future and models the use of aggressive tactics for the child. Similarly, the use of nonresponsive discipline results in the parent negatively reinforcing the child's escalation of oppositional and aggressive behaviors as the child escapes or avoids punishment. Hence, the use of nonresponsive discipline also increases the likelihood that the child will engage in such behaviors in future interactions.

Of importance, coercive parent-child interactions are recognized as bidirectional patterns in that the child's behavior influences the parent's reaction and vice versa (Lytton, 1990; Patterson, Reid, & Eddy, 2002). In essence, over an extended period of time, family members "train each other to be aversive and aggressive" (Patterson, Reid, & Eddy, 2002, p. 9). Regardless of whether the parent initially takes an aggressive or nonresponsive role, with ongoing coercive exchanges, the child's aggression can escalate from minor oppositionality to violent behavior (Snyder & Stoolmiller, 2002). In addition to affecting family functioning, the coercive cycle also begins to generalize to the child's interactions with peers and teachers (Patterson et al., 1992).

With increasingly maladaptive interactions with others, the coercive cycle maintains disruptive behavior through generalization to contexts outside of the home. Unfortunately, using these practices with children who have disruptive behaviors only worsens the problem by teaching them ineffective social skills, rather than achieving the intended amelioration of behavior problems. It is also important to note that although parent and family factors are implicated in the progression of coercive social interactions, exact causal links to conduct problems and impulsivity/ hyperactivity have not been established (Barkley, 2003).

Summary

Identified externalizing behavior disorders include ODD, CD, and ADHD. More generally, disruptive behavior symptomatology can be categorized into conduct problems and impulsivity/hyperactivity. Theories for the developmental pathways for conduct problems include a pervasive early onset course with problematic long term outcomes or a more transient late onset course. Developmental pathway research for impulsivity/hyperactivity is lacking. However, related maintenance factors for both conduct problems and impulsivity/hyperactivity, specifically disruptions in social information-processing and coercive parent-child interactions, have been identified. Given these environmental contributions to externalizing behavior problems, two popular and logical components of interventions for disruptive behaviors include training in social skills and parenting areas.

Social Skills Training

In a review of psychosocial treatments for children with conduct problems, Brestan and Eyberg (1998) found that 51.9% of the interventions were presented in a group format and 78.5% were cognitive-behavioral in nature. In a meta-analysis of the effectiveness of cognitive-behavioral treatments for children with maladaptive behavior, Durlak, Fuhrman, and Lampman (1991) concluded that regardless of the specific components included in the treatment and the duration of the treatment, the cognitive-behavioral interventions were equally effective in addressing several types and severities of childhood behavior problems. Cognitive-behavioral skills interventions including

components such as social skills training (SST) and problem-solving training have been shown to reduce delinquent and aggressive behaviors for children with conduct problems (Kashani et al., 1999; Kazdin, 1987, 2002). Further, researchers have found reductions in deviant behavior and increased prosocial behavior functioning at home and at school using variations of cognitive-behavioral problem solving skills training (Kazdin, Bass, Siegel, & Thomas, 1989; Kazdin, Esveldt-Dawson, French, Unis, 1987). Antshel and Remer (2003) found that SST for heterogeneous groups of children with ADHD-Combined Type (ADHD-C) and ADHD-Inattentive Type (ADHD-I) led to increased reports of cooperative behaviors, assertive abilities, and empathy skills. Further, SST has been shown to improve children's skill knowledge, social interactions, and behavior problems (Piffner & McBurnett, 1997). Although the nuances of SST may differ among interventions with this label, there are several components identified as important aspects of effective SST programs. The following discussion examines some of the more well-researched SST programs.

The program developed by Kazdin and colleagues (Kazdin et al., 1987; Kazdin et al., 1989), which focuses on problem-solving skills training in a small-group format, has shown positive outcomes for children with disruptive behavior disorders. Kazdin's SST program consists of techniques that teach the child how to effectively use perspective-taking to generate several alternative solutions to social problems. The skills are honed through modeling, role-playing, corrective feedback, and reinforcement for appropriate responses. To generalize skills learned in group, children are required to complete homework assignments in which problem-solving skills are employed in real-life situations. Additionally, Lochman et al. (2000) stress the advantages of using a group

format for treatment of childhood conduct problems, including the provision of *in vivo* opportunities to practice and refine social skills with the benefit of peer reinforcement for appropriate use of skills. Similar to Kazdin's SST program, the Anger Coping Program (Lochman, Curry, Dane, & Ellis, 2001; Lochman & Dunn, 1993) emphasizes the acquisition of social problem-solving skills in addition to implementing behavioral contingencies for group behavior and setting weekly goals between small-group sessions. Children are taught skills to accurately infer others' thoughts and intentions, as well as develop an understanding of others' feelings and internal emotional states. In the final stages of the intervention, the children make a video demonstrating the problem-solving process. A 3-year follow-up study of the Coping Anger Program (Lochman, 1992) illustrated positive long-term effects of the intervention on self-esteem and social problem-solving abilities. Specifically, boys in the study increased their ability to avoid illogical solutions that did not result in the intended outcome to the problem. Lochman et al. (2000) stress the flexibility of this program, as it can be implemented in either the clinical setting or the school environment.

A growing body of literature indicates the development and incorporation of successful SST programs within the schools. Previous research indicates that elementary school children who received the intervention produced more solutions to interpersonal problems and better anticipated consequences of solutions after receiving universal training in problem-solving skills compared to those children who did not receive the intervention (Alvarez, Cotler, & Jason, 1984). A meta-analysis of school-based intervention programs suggested that social competence training was related to significant reductions in aggressive behavior (Wilson, Lipsey, & Derzon, 2003). A

prominently cited universal SST program for elementary school children is the Second Step Program (Committee for Children, 1991, 1992a, 1992b). In a review of the Second Step Program, Frey, Hirschstein, and Guzzo (2000) describe it as including curriculum on empathy, social problem-solving, and anger management skills. Initial research demonstrated decreases in observed physical aggression and increases in prosocial behavior, although parent and teacher rating scales did not reflect these changes (Grossman et al., 1997). The finding for decreased problem behavior as evidenced by observational data, but not in teacher report, was replicated in an urban sample of preschool and kindergarten children (McMahon, Washburn, Felix, Yakin, & Childrey, 2000). Concerning the application of the Second Step Program in a rural population of elementary school children, Taub (2001) found that children receiving the intervention did not show improvements in antisocial behaviors as measured by behavioral observations, however, improvements in prosocial behaviors were observed.

Despite these promising findings to support the usefulness of SST for children with conduct problems, the literature is conflicting in the overall efficacy of the intervention. A recent meta-analysis of social skills interventions for students with behavioral disorders (Quinn, Kavale, Mathur, Rutherford, & Forness, 1999) revealed small effect sizes. Additionally, Bullis, Walker, and Sprague (2001) exert that SST may not be effective in treating the social behavior problems of extremely at-risk and antisocial children. However, many of the researchers in this area recognize the limitations of SST research. For example, the SST literature is plagued with small sample sizes and a lack of experienced therapists administering the intervention (Pffifner & McBurnett, 1997). Several researchers (Bullis et al., 2001; Quinn et al., 1999; Spence,

2003) suggest that fitness of the target skills to the population and context, the level of intensity and duration of the training for the children, and the accuracy of the assessment procedures for SST need to be refined, not that SST should be eliminated from the list of viable interventions for conduct problems and impulsivity/hyperactivity.

Summary

Cognitive-behavioral interventions are frequently implemented in treating childhood disruptive behaviors, specifically interventions with SST components. As examples of existing SST programs, Kazdin's SST and Lochman's Anger Coping Program are two well-researched interventions that give preliminary support to the efficacy of this type of intervention. Implementation of SSTs in the schools is a growing area of interest. Limitations for SST research includes unclear definitions of the target population, small sample sizes, training for therapists, and lack of measures sensitive to social skills outcomes. Initial research is promising, but an apparent need for better controlled studies exists.

Parenting Skills Training

Parenting training models have been shown effective in reducing defiance and aggression among preschool and school-age children (Kashani et al., 1999). In traditional parent management training and parenting skills training approaches (hereafter referred to as parent training [PT]), parents are trained to address their child's behavior at home without direct intervention between the child and therapist (Kazdin, 1987, 2002). For example, Forehand and Long (2002) outline a program that teaches consistent discipline

and positive approaches through child-directed and parent-directed activities, ultimately decreasing the child's behavior problems. Decades of research based on Patterson and Gullion's (1968) classic parent-training program, *Living with Children* has shown robust positive effects. PT has been shown to be one of the most promising interventions in treating conduct problems in children and coercive family patterns, as evidenced by its representation of the two most well-established treatments for children with such problems (Brestan & Eyberg, 1998).

A frequently referenced (Brestan & Eyberg, 1998; Connolly, Sharry, & Fitzpatrick, 2001; Farmer et al., 2002; Jackson & Leonetti, 2001; McMahon & Forehand, 2003; Sampers, Anderson, Hartung, & Scambler, 2001) and efficacious PT program is the videotape parent modeling training developed by Webster-Stratton and colleagues (Webster-Stratton, 2000; Webster-Stratton & Hammond, 1997; Webster-Stratton & Hancock, 1998; Webster-Stratton & Herbert, 1994). This group-format PT requires parents to watch video-taped vignettes representing several parenting skills. After viewing the vignettes, the therapist facilitates group discussion and encourages the parents to share their responses. Therefore, a major component of this intervention relies on the parents' group discussion, problem-solving techniques, and support. Parents receiving the videotape modeling parent training were observed to have better parenting skills and their children had greater observed reductions in disruptive behavior than controls (Brestan & Eyberg, 1998). Although studies suggest that parent training or child social skills training produce positive results, combining parent and child training may increase the long-lasting effects of the treatment (Webster-Stratton & Hammond, 1997).

Some researchers have produced successful outcomes by incorporating direct parent-child interactions during the PT sessions (Hembree-Kigin & McNeil, 1995; McMahon & Forehand, 2003) and children are active participants with their parents in this type of intervention. Similar to parent-only versions of PT, an emphasis is placed on correcting the inadvertent maintenance of the child's behavior problems that stem from maladaptive parent-child interactions. This approach has been found to be effective with children ages 3 to 7 years (Hembree-Kigin & McNeil, 1995).

In addition to addressing maladaptive child behavior, PT has been found to decrease parenting stress and psychopathology as well (Kazdin & Whitley, 2003). Previous research suggests that high parental stress and psychopathology are associated with low levels of children's prosocial functioning and high levels of deviant behavior in the home post-treatment (Kazdin, 1995). In addition, parenting stress and psychopathology have been linked to more disruptive externalizing behaviors in children (Prevatt, 2003). As evidence of treatment addressing these factors, Jackson and Leonetti (2001) note in their review that effective PT has been related to positive outcomes for parent psychopathology and parental stress.

Summary

The majority of PT programs target the coercive parent-child interaction. PT has proven to be one of the most promising interventions in treating conduct problems in children and coercive family patterns, as evidenced by its representation of the two most well-established treatments for children with such problems (Brestan & Eyberg, 1998). PT can be offered in individual or group formats, and can include live or videotape

modeling of parenting skills. Although independent PT interventions result in positive outcomes, evidence suggests that it may be most effective to combine PT with SST interventions.

Combined Social Skills and Parenting Skills Interventions

Community SST/PT Programs

Based on previous research of the effectiveness of SST and PT independently, several researchers (van de Wiel, Matthys, Cohen-Ketenis, and van Engeland, 2002; Kazdin, 2003a; Southam-Gerow, Henin, Chu, Marrs, & Kendall, 1997) suggest combining the two interventions to advance clinical practice for disruptive behaviors. Froelich, Doepfner, and Lehmkuhl (2002) posit that combined therapies allow for coinciding increases in child and parent competencies, triggering an additive effect for positive outcomes. For example, Kazdin (2003b) and colleagues (Kazdin et al., 1992) found that PT alone produces consistent decreases in antisocial behavior and improvements in prosocial behavior for children, however, combining PT and SST interventions result in more effective outcomes than either treatment in isolation. In addition, there is evidence of the efficacy of videotape modeling SST and PT interventions delivered in a group format. Specifically, Webster-Stratton and colleagues (Webster-Stratton & Hammond, 1997; Webster-Stratton & Reid, 2003) found that in comparisons of SST, PT, and SST/PT combined, children in the SST alone and the SST/PT combined conditions exhibited significant improvements in problem-solving and conflict management skills. However, children in the PT alone and SST/PT combined conditions experienced more positive parent-child interactions. Therefore, this research

suggests that interventions with an SST component lead to improvements in child functioning while interventions with a PT component lead to better parent-child interactions. It is logically concluded that interventions with combined SST/PT provide the best opportunities for increases in both child and parent functioning (Webster-Stratton & Hammond, 1997; Webster-Stratton & Reid, 2003).

School-Based SST/PT Interventions

Even with promising findings for successful outcomes for group SST for children with complimentary PT for parents, comparatively there is a lack of literature regarding the application of these interventions to the elementary school setting. One of the few programs targeting this population, the First Step to Success Program (Walker, Stiller, Kavanagh, Severson, & Feil, 1997) consists of providing a universal school-based group SST intervention and then targeting at-risk students by conducting individual PT in the home. Walker and colleagues (Walker, Kavanagh, Stiller, Golly, Severson, & Feil, 1998) concluded that initial results for the First Step Program delivered to students in regular kindergarten classrooms suggested a decline in aggression over those in a control condition. A review of the literature did not produce any studies that examined a combined school-based SST and PT groups.

Other intervention programs geared toward elementary schools differ in services, intensity, and format. In addition to SST and PT, the Resolving Conflict Creatively Program includes student-mediation groups, teacher training, and administrator training (Lantieri & Patti, 1996). The Early Risers Program is a 6-week summer school intervention that includes teacher consultation, student mentoring, biweekly family

sessions, and child SST groups (August, Hektner, Egan, Realmuto, & Bloomquist, 2002; August, Realmuto, Hektner, & Bloomquist, 2001). Further, the well-researched Fast Track Project (CPPRG, 1992, 2000, 2002a, 2002b) incorporates universal classroom intervention, PT, SST (group and individual formats), home visits, academic tutors, community mentors, and peer mentors. All of these programs demonstrate positive outcomes for decreasing disruptive behaviors; however, many of them are located in major metropolitan areas and are extraordinarily comprehensive in the services offered.

Special Considerations for Interventions in Rural Communities

Unfortunately, such comprehensive programs for rural schools are not reflected in the current literature, which is most likely due to the limits of available resources to implement all-inclusive intervention programs in rural communities. Lack of facilities, coordinated care, and professional, specialized personnel in rural areas obstruct provision of comprehensive mental health services for children and families (Kelleher, Taylor, & Rickert, 1992; McDonald, Harris, & LeMesurier, 2005). According to the American Psychological Association (2001), many rural areas are federally designated as “Mental Health Professional Shortage Areas,” with 55% of the 3072 rural counties having no practicing psychologists, psychiatrists, or social workers—an astounding number given that 20% of the United States population lives in rural areas.

As a result of the professional shortage, it is understandable that new ideas disseminate slowly to rural communities. The lack of mental health awareness in rural areas contributes to the additional phenomenon of stigma associated with seeking mental services. Research on perceived barriers and risk factors in rural communities suggests

that residents in rural areas are likely to forego mental health care due to stigma associated with having a mental condition, a lack of education regarding available services for mental health in their community, and concerns for confidentiality in a small town (Bjorklund & Pippard, 1999; Elliott & Larson, 2004; Kelleher et al., 1992; McDonald et al., 2005). The influences of stigma may be most evident in the lack of mental health provision for children and adolescents. Elliot & Larson found that 57% (500 of 881 participants) of their rural Midwestern adolescent sample reported they needed counseling but did not receive it, which was not only due to their own anxiety related to stigma, but also due to a lack of support from their parents to seek treatment. Additional considerations for working with rural populations can include ethnically homogenous groups and families with low socioeconomic status (APA, 2001; Fish & Stifter, 1999; King & Kirschenbaum, 1990; Taub, 2001). High rates of unemployment, low paying occupations, and uninsured/underinsured families exist in rural areas (Kelleher et al., 1992). Hence, the cost of mental health care is a significant barrier to families receiving services (Elliott & Larson, 2004).

Given the complex array of barriers to treatment apparent in the rural community, it is likely that models of intervention for the treatment of people living in urban areas will not easily transpose to those living in rural areas. Instead, Barbopoulos and Clark (2003) would suggest that as a result of cultural beliefs that mental health services are stigmatizing, foreign, and threatening, a gradual approach to intervention services may yield the best means for gathering community support. Kelleher et al. (1992) suggest that one mechanism for rural mental health providers to overcome attitudinal barriers of the population they serve is to provide educational outreach programs, early intervention

curriculum, and coordination of services with educational professionals. Concerning parents' openness to receiving interventions, they tend to prefer services located at their child's school and delivered through school-affiliated personnel rather than through independent mental health professionals (Linfoot, Martin, & Stephenson, 1999). Considering the unique cultural factors and financial limitations represented in the rural population, it may be most appropriate to initiate school-based SST and PT intervention programs that require relatively few resources, are perceived as less stigmatizing than services housed in a mental health agency, and are deemed to be cost-effective in a group format.

Summary

Although SST is an important factor in effectively treating disruptive behaviors in children, addressing the parent and family dysfunction that contributes to the child's problem behaviors has been indicated by research to be a beneficial intervention. Thus, combined SST and PT interventions have been shown to result in greater positive outcomes and better generalization of skills than either component alone. With this in mind, the need to examine the effectiveness of SST/PT groups in the schools has been indicated. In particular, the need for implementation of these groups in underserved rural schools with special considerations for the population's unique combination of treatment barriers is apparent.

Programs of Interest

School-Based SST

The school-based SST intervention implemented covered a variety of topics concerning how to improve peer and teacher relationships. It is based on an unpublished manualized treatment (Hartung et al., 2003) derived from well researched social cognitive-behavior principles and techniques for children (e.g., Barkley, 1990; Kazdin, 1987; Kazdin et al., 1989; Lochman, 1992; Lochman & Curry, 1986). Over the course of eight weekly child group sessions, the following topics were covered: problem-solving, perspective taking, initiating conversations, complimenting others, recognizing and controlling anger, entering groups, and communicating negative feelings. Typical groups followed the format of a brief review of the child's homework, introduction of a new skill, the therapist modeling the new skill, the child role-playing the new skill, and a free period for the children to use positive social skills with each other. Children were assigned homework to practice the new skill at home and at school. Example homework projects included practicing giving compliments to others and using social problem-solving skills to resolve a conflict at school.

Three separate parent generalization sessions were conducted at Weeks 1, 4, and 8. Parent generalization groups cover four main information areas: the course of the children's intervention, methods for the children's groups, a brief description of target skills for the groups, and a discussion of assessing and monitoring their child's homework. Parents were taught how to complete weekly Home Report Cards that assessed the child's progress on individualized targeted skills. Parents received

information on how to establish a contingency plan that rewarded the child for meeting his/her goals for targeted skills.

School-Based PT

The school-based PT was an 8-week adaptation of the Community Parent Education Program (COPE) manualized treatment (Cunningham, Bremner, & Secord, 1998). In comparisons with individual clinic-based PT and wait-list control participants, parents in a community-based PT group reported greater decreases in behavior problems at home and better retention of behavioral gains at 6-month follow-up (Cunningham, Bremner, & Boyle, 1995). The COPE Program relies on a social-cognitive approach that incorporates family systems theory and group theory to provide cost-effective community-based parent training (Cunningham, 1998; Cunningham, Bremner, & Secord-Gilbert, 1993).

Over the course of the eight 90-minute weekly PT group sessions, the following topics were covered: observing and defining child behavior, monitoring school and home behavior, developing parent-child negotiation skills, and establishing discipline techniques. Typical PT groups followed the format of a brief review of the parent's homework, introduction and discussion of a new parenting skill with the use of video-taped vignettes, the therapist modeling the new skill, parents rehearsing the new skill, and discussion of homework for the upcoming week. Example homework projects included identifying and recording problem child behaviors, and developing a daily behavior report card to be exchanged between parents and teachers to monitor the child's progress.

Additional supportive aspects of the PT included encouraging contact among parents and providing information on community resources.

Summary of Reviewed Literature

Children are most commonly referred for clinical services due to externalizing behavior problems. Such behaviors include those indicated in *DSM-IV-TR* (APA, 2000) diagnoses of ADHD, ODD, or CD, but are more generally defined as conduct problems and impulsivity/hyperactivity within the child literature. The suggested etiological factors for conduct problems differ from impulsivity/hyperactivity, with the former possibly containing fewer genetic factors but more environmental factors than the latter. However, early developmental trajectories and similar maintenance cycles of these disruptive factors have been indicated. Most importantly, early signs of disruptive problems, social-information processing difficulties, and coercive parent-child interactions seem to contribute to the complexity of the overall development of disruptive behaviors.

Fortunately, several effective interventions for conduct problems and impulsivity/hyperactivity have been identified in previous literature. Specifically, SST has been found to increase prosocial behaviors in children and PT has been found to result in the improved quality of parent-child interactions. Furthermore, some research indicates that combining SST and PT interventions provides the most promising outcomes for children with disruptive behaviors and their families.

Although the majority of literature is supportive of SST and PT as important components in interventions treating conduct problems and impulsivity/hyperactivity, the question remains as to the effectiveness of these interventions in light of the lack of well

designed, controlled studies and insensitive assessment procedures used to determine treatment outcome. Further, previous literature neglects study of the effectiveness of SST and PT in the rural schools. Thus, there is an apparent need for further research of these interventions in such underserved populations.

Purpose of the Current Study

The purpose of the present study was to examine the effectiveness of school-based SST and PT groups in a rural community. From the above review, it is noted that these two interventions can be effective in isolation and in combination (Kazdin, 2003b; Kazdin et al., 1992; Webster-Stratton & Hammond, 1997; Webster-Stratton & Reid, 2003). Thus, the current protocol extended the research to date by supplementing the research design with experimental controls, including treatment provision by trained therapists using manualized interventions, having ongoing supervision, and randomly assigning participants to the treatment groups.

Additionally, previous literature indicates that parent psychopathology and parent stress are associated with overall parent functioning. Most importantly, these variables are thought to affect parenting behavior and parent-child interactions (Eyberg, Boggs, & Rodriguez, 1992; Rodgers, 1998). The current study statistically explored these factors and their association with treatment outcomes. Previous literature also indicates the need for sensitive and adequate assessment measures in determining the outcomes of SST and PT interventions. Therefore, the current study used multiple informant assessment instruments that measure both broadband child disorders and specific behaviors related to conduct problems, impulsivity/hyperactivity, and social skills as indicators of outcome.

Moreover, the previous literature focuses mostly on interventions implemented in urban settings and neglects implications for rural service provision. Thus, this study attempted to add to the small body of research evaluating the efficacy of SST and PT in rural-area school children. Specifically, the groups targeted children in five rural Oklahoma elementary schools who demonstrated at-risk or significant levels of behavior problems, such as aggression, impulsivity, and hyperactivity.

In the current study, the following hypotheses were evaluated:

Hypothesis 1

Children participating in the SST/PT group will have a greater decrease in reported aggressive behaviors pre to post treatment than children randomly assigned to the SST-only group. Decreases in aggressive behaviors for Hypothesis 1 were defined as the following:

Hypothesis 1a. Lower scores on the Aggression (AGG) subscale of the parent report Behavioral Assessment System for Children (BASC) pre to post treatment.

Hypothesis 1b. Lower scores on the AGG subscale of the teacher report BASC pre to post treatment.

Hypothesis 2

Children participating in the SST/PT group will have a greater decrease in reported hyperactive behaviors pre to post treatment than children randomly assigned to

the SST-only group. Decreases in hyperactive behaviors for Hypothesis 3 were defined as the following:

Hypothesis 2a. Lower scores on the Hyperactivity (HYP) subscale of the parent report BASC pre to post treatment.

Hypothesis 2b. Lower scores on the HYP subscale of the teacher report BASC pre to post treatment.

Hypothesis 3

Children participating in the SST/PT group will have a greater decrease in reported negative conduct behaviors pre to post treatment than children randomly assigned to the SST-only group. Decreases in negative conduct behaviors for Hypothesis 2 were defined as the following:

Hypothesis 3a. Lower scores on the Intensity subscale of the Eyberg Child Behavior Inventory (ECBI) pre to post treatment.

Hypothesis 3b. Lower scores on the Intensity subscale of the Sutter-Eyberg Student Behavior Inventory-Revised (SESBI-R) pre to post treatment.

Hypothesis 4

Children participating in the SST/PT group will have a greater increase in reported prosocial behaviors pre to post treatment than children randomly assigned to the

SST-only group. Increases in prosocial behaviors for Hypothesis 4 were defined as the following:

Hypothesis 4a. Higher scores on the Social Skills (SS) scale of the parent report Social Skills Rating System (SSRS) pre to post treatment.

Hypothesis 4b. Higher scores on the Social Skills (SS) scale of the teacher report SSRS pre to post treatment.

Hypothesis 4c. Higher scores on the Social Skills (SS) scale of the student report SSRS pre to post treatment.

Exploratory Question 1

How will children randomly assigned to the SST/PT group versus the SST-only group differ in terms of observed in-session disruptive behaviors pre to post treatment? The observational data was coded from video-taped sessions.

Exploratory Question 2

How will children randomly assigned to the SST/PT group versus the SST-only group differ in terms of observed in-session prosocial behaviors pre to post treatment? The observational data was coded from video-taped sessions.

Exploratory Question 3

How will parents randomly assigned to the SST/PT group versus the SST-only group differ in terms of parenting stress, as measured by the Parenting Stress Index (PSI), pre to post treatment?

Exploratory Question 4

How will parents randomly assigned to the SST/PT group versus the SST-only group differ in terms of psychological functioning, as measured by the Brief Symptom Inventory (BSI), pre to post treatment?

Exploratory Question 5

What is the relationship of parenting stress (as measured by the PSI), parent psychological functioning (as measured by the BSI), and parent reported child outcome measures (BASC AGG, BASC HYP, ECBI, and Parent SS) at both pre and post treatment?

CHAPTER III

Method

Participants

A total of 11 children participated in the fall and 3 children participated in the spring. Participants for the school-based SST and PT groups were students attending regular or special education classes, their parents, and their teachers. Participants were solicited during the first month of the fall semester from four separate schools in Cushing, OK, and during the first month of the spring semester from school districts within a 30-mile radius of Cushing. The majority of referrals for participation were generated by parents and school officials for children who demonstrated symptoms of one or more disruptive behavior disorders. Participants were also recruited by newspaper advertisements, community flyers, referrals from previous participants, and clinical referrals. Ultimately, children comprising the sample attended the third or fourth grades at rural schools in Oklahoma and were referred on the basis of complaints for aggressive behavior, poor social skills, impulsivity, and/or hyperactivity.

Of the child sample, 12 identified as Caucasian, while 2 identified as biracial. The children ranged in age from 8-years-old to 10-years-old, with an average age of 8.71 years ($SD = .61$). Interestingly, almost twice as many girls than boys participated (9 and 5, respectively). There were 5 children in the SST-only group and 9 children in the

SST/PT group. All 5 children in the SST only group attended six or more of the eight scheduled groups, while 3 children in the SST/PT attended five of the eight scheduled groups and 6 children in the same treatment condition attended six or more of the groups. Regarding primary diagnosis at intake as determined by clinical interview, previous diagnostic history, and the measures described in the Measures section, disruptive behavior disorders were indicated in 5 children, mood/anxiety disorders in 4 children, pervasive developmental disorders in 2 children, and general adjustment/social problems in 3 children. In terms of previous treatment, 6 of the children received psychological treatment prior to participating in the current study and 4 children were taking psychotropic medications at the time of the study.

For some children, more than one parent took part in the parenting sessions either all or part of the time. However, for the purposes of statistical analysis, a primary parent was determined based on biological relationship to the child, the number of sessions attended, and the data completed at pre and post treatment. The following information regarding parent characteristics refers only to the identified primary parents. Eight mothers and six fathers served as the primary parent, with all but one parent identifying himself or herself as Caucasian. Two of the primary parents reported being married to the child's other biological parent. While 11 primary parents reported being divorced/separated from the child's other biological parent, 5 of these primary parents remained unmarried in a single-parent household and 6 of these primary parents remarried, indicating a step-parent in the home. One additional parent reported that the child's other biological parent was deceased, with the primary parent remarrying and the step-parent living in the home.

Primary parent ages ranged from 27 to 57, with a mean age of 37.43 years ($SD = 8.39$). The average reported household income was \$34,409 and ranged from \$5,500 to \$85,000 ($n=12$). The median reported household income for the sample was \$33,500, which is comparable to the median household income of \$33,168 reported by the U.S. Census Bureau (2000) statistics for the county in which 13 of the children lived. Although parents' educational level was not assessed as part of the current study, estimates for the 2000 Census show that 77.6% of residents in the county graduated high school, while 11.7% of residents attained a bachelor's degree. The breakdown of primary parents for each treatment condition mirrors their child's random assignment to the SST-only or SST/PT group. Of the parents assigned to the SST-only group, 80% attended two or more generalization sessions. Of the parents assigned to the SST/PT group, 78% attended five or more of the eight scheduled parent training sessions, while 56% of the parents attended six or more of the scheduled sessions.

Measures

Demographic Questionnaire

All participating parents completed a demographic information form at intake. Demographic information collected includes participant characteristics for the child such as age, grade, ethnicity, gender, medications, and previous therapeutic experiences. In addition, information about the parents and family, including household income, source of referral to the program, and number of children, as well as the parents' marital status, age, and ethnicity was collected. See Appendix A for the Demographic Questionnaire.

Behavioral Assessment System for Children (BASC)

The Behavioral Assessment System for Children (BASC) is a broad-band measure of the major dimensions of child psychopathology, including personality and behavioral problems and emotional disturbance (Reynolds & Kamphaus, 1998). Each item contributes to only one scale and is placed on the same scale across all versions (parent, teacher, and self-report) of the BASC. General norms were developed using children ages 4 to 18 years attending 116 public and private schools and daycare centers. Clinical norms were established using samples of children being served for emotional or behavioral problems in community mental health centers, self-contained classrooms or programs within the public schools for children with behavioral or emotional disorders, residential schools for children with behavioral or emotional problems, university-based or hospital-based inpatient and outpatient mental health services, and juvenile clinical settings in the United States. The representative sample was diverse in geographic region, socioeconomic status, and culture and ethnicity. Norms for the BASC are also differentiated for age and gender. Scale and composite score classifications for the Clinical Scales indicate a *T*-Score range of 60-69 for At-Risk and a range of 70 and above for Clinically Significant. For Adaptive Scales, a *T*-Score range of 31-40 is At-Risk and a range of 30 and below is Clinically Significant.

The BASC Teacher Rating Scales for Children ages 6-11 years (TRS-C) has 148 items and assesses both adaptive and problem behaviors in the school setting, while the Parent Rating Scales (PRS-C) has 138 items and assesses these behaviors in the community and home settings. Both versions use a four-point scale (*1 = Never, 2 = Sometimes, 3 = Often, 4 = Almost Always*) to rate the frequency of the indicated

behaviors in the past 6 months. Both the PRS-C and the TRS-C include a validity scale (*F* Index) that measures the responder's tendency to be overly negative about the child's behaviors. The estimated administration time for each the parent and teacher versions is 10 to 20 minutes. The PRS-C and the TRS-C both contain scales measuring aggression, hyperactivity, conduct problems, anxiety, depression, somatization, attention problems, atypicality, withdrawal, adaptability, leadership, and social skills. Composite scores resulting from both parent and teacher questionnaires include Externalizing Problems, Internalizing Problems, Adaptive Skills, and the Behavioral Symptoms Index. Additionally, the TRS-C contains scales for learning problems and study skills, as well as a composite score for School Problems. The BASC is frequently cited within the child literature and is considered to be comprehensive in nature and psychometrically sound of use in research applications (Flanagan, 1995; Gladman & Lancaster, 2003; Merenda, 1996.)

Overall, both parent and teacher versions of the BASC demonstrate acceptable levels of reliability and validity (Reynolds & Kamphaus, 1998). Internal consistency and test-retest reliability for the composite scores were high across the two adult report versions. Although teacher ratings have been shown to be more stable across time than parent ratings for some subscales, temporal stability for both the PRS and the TRS has been demonstrated to be in the moderate to excellent range (Mereduth, 2001). Further, the validity of all the versions demonstrated similar constructs to existing instruments for children. For the current study, the hyperactivity and aggression scales were used as measures of disruptive behavior. In the analyses, they are referred to as the BASC HYP and BASC AGG scale. For the current study, the Cronbach's alpha of the BASC HYP

scale at pre treatment for the parent version was .74 and for the teacher version was .94, while alphas were .15 for the parent version and .97 for the teacher version at post test. Although data for the parent BASC HYP was reviewed for entry errors, none were found. Additionally, no clear patterns within the inter-item correlations were revealed to explain the poor reliability for this scale. Although the parent BASC HYP scale at pre and post treatment were significantly correlated, there were several negative internal consistency correlation coefficients. For the BASC AGG scale, alphas were .92 for the parent version and .87 for the teacher version at pre treatment. Reliabilities at post treatment were .77 for the parent version and .96 for the teacher version.

Child Symptom Inventory-4 (CSI-4)

The Child Symptom Inventory-4 (CSI-4) Parent Checklist is a 97-item screening instrument based on the *Diagnostic and Statistical Manual of Mental Disorders (4th ed.; APA, 1994)*. The Parent Checklist assesses over a dozen childhood psychiatric disorders including behavioral, affective, and cognitive symptoms (Gadow & Sprafkin, 1998). Normative data for the CSI-4 Parent checklist was derived from an original sample of children attending a pediatric visit at one of 11 sites (Gadow & Sprafkin, 1997). A supplemental normative sample consisted of children attending one of three elementary schools from Long Island, New York (Gadow & Sprafkin, 1999). The total norm sample consisted of 552 children ages 6 to 12 years, with none receiving special services. Parents reported that 3.6% of the children in the sample received medication for a behavioral or emotional problem.

The CSI-4 Teacher checklist is a 77-item screening measure for childhood psychiatric disorders. The Teacher Checklist differs from the Parent Checklist in that the former version pertains to the educational setting, includes areas of academic performance, and excludes symptoms that the teacher is unlikely to see in the school setting (e.g., sleep patterns, staying out late at night, separation anxiety). The normative sample consisted of 1,520 students from three geographically diverse sites. The children were in regular classrooms in kindergarten through sixth grade, with ages ranging from 5 to 12 years. Approximately 5% of the sample was reportedly taking medication for behavioral or emotional problems at the time of data collection.

Scoring for both versions of the CSI-4 is based on two methods. The first, the Screening Cutoff score, represents a categorical model of symptoms and generally assigns responses as either being not present (*never* = 0, *sometimes* = 0) or present (*often* = 1, *very often* = 1). Cutoff scores, indicating the presence or absence of a particular disorder, parallel the DSM-IV number of symptoms necessary to warrant a diagnosis. The second scoring method, the Symptom Severity score, represents a dimensional model of symptoms in which the responses receive the following values: *never* = 0, *sometimes* = 1, *often* = 2, and *very often* = 3. When the response set is either “yes” or “no,” *yes* = 2.5 (average of “often” and “very often”) and *no* = .5 (average of “never” and “sometimes”). Symptom Severity scores adopt a *T*-Score range of 60-69 for moderate severity and a range of 70 and above for high severity. Using both the cutoff and severity scores, it is possible for a child’s Screening Cutoff score to indicate few endorsements for a particular disorder but a Symptom Severity score to demonstrate symptoms of high severity.

In terms of reliability and validity, for the Parent Checklist, Sprafkin and colleagues (Sprafkin, Gadow, Salisbury, Schneider, & Loney, 2002) found satisfactory levels of test-retest reliability and internal consistency, as well as temporal stability across a 4-year period for all but two symptom categories. The Parent Checklist demonstrated good concurrent validity in respect to appropriately corresponding scales of the CBCL and Diagnostic Interview for Children and Adolescents-Parent Version (Gadow & Sprafkin, 1997; Sprafkin et al., 2002). Similarly, the Teacher Checklist was found to have good reliability and validity (Gadow & Sprafkin, 1997, 1998). Specifically, Sprafkin et al. found Cronbach's alpha for a group of clinically referred boys to range from nonsignificant findings (Schizophrenia) to .88 (ADHD, Inattentive Type) for the CSI-4 Parent Checklist Symptom Count scores. Regarding the Symptom Severity scores, Cronbach's alpha ranged from .45 (Schizophrenia) to .92 (ADHD, Inattentive Type). Additionally, preliminary support for validity and reliability, including convergent and divergent validity with the CBCL-TRF has been demonstrated (Mattison, Gadow, Sprafkin, Nolan, & Schneider, 2003). For the current study, the CSI-4 was not used in the main analyses; however, it was used to assist with diagnosis at intake.

Social Skills Rating System (SSRS)

The Social Skills Rating System (SSRS) is a screening instrument that identifies children at-risk for significant social behavior problems, and aids professionals in developing appropriate interventions for these children (Gresham & Elliot, 1990). In addition to assessing social skills, the SSRS measures problem behaviors that might interfere with the acquisition or performance of such skills, as well as academic

competence, which often coincides with social skills functioning. The SSRS was normed on a large, national sample of 4,170 children ages 3 through 18 years providing self-report, as well as ratings by 1,027 parents and 259 teachers. The normative sample includes students from special education classes, in addition to mainstreamed special education students and regular class students.

SSRS ratings are based on two types of scales: Frequency (*0 = Never, 1 = Sometimes, or 2 = Very Often*) and Importance (*0 = Not Important, 1 = Important, or 2 = Critical*). Interpretation levels for the Social Skills and Problem Behaviors Scales are categorized as Fewer, Average, and More; for the Academic Competence Scale, levels are determined as Below Average, Average, and Above Average. In general, raw scores greater than or equal to one standard deviation above the mean fall in the More (Social Skills and Problem Behaviors) or Above Average (Academic Competence) range. Conversely, raw scores less than or equal to one standard deviation below the mean fall within the Fewer (Social Skills and Problem Behaviors) or Below Average (Academic Competence) range. Different versions of the SSRS specifically at the Elementary Level are available for parents (grades K-6), teachers (grades K-6), and students (grades 3-6).

Both the SSRS 55-item Parent form and 57-item Teacher form assess cooperation, assertion, and self-control in the domain of Social Skills; as well as externalizing, internalizing, and hyperactivity for Problem Behaviors. The Parent form measures the additional social skill of responsibility, while the Teacher form measures the domain of Academic Competence. Ratings are given for Frequency and Importance for all subscales except items contributing to Academic Competence, which use a 5-point scale that corresponds to percentage clusters of students in the class (1 = lowest 10%; 5 = highest

10%). Administration time for both the Parent and Teacher forms is estimated to be less than 25 minutes. The SRSS Student form has 34 items and an estimated administration time of 15 minutes. The student form assesses the domain of Social Skills with subscales for cooperation, assertion, empathy, and self-control. The indicated child provides Frequency ratings based on how often they report engaging in specific described behaviors.

Validity studies were conducted for each of the three versions of the SSRS at the Elementary Level. The Teacher form was compared to the Social Behavior Assessment (SBA; Stephens, 1978), the CBCL-TRF (Achenbach, 1991b) Achenbach & Edelbrock, 1983), and the Harter Teacher Rating Scale (TRS; Harter, 1985), with moderate to high correlations. Correlations for the Parent forms of the SSRS and the CBCL (Achenbach, 1991a) were also in the moderate to high range. Validity for the Student form was demonstrated through comparisons with CBCL-Youth Self-Report form ([CBCL-YSR]; Achenbach, 1985; Achenbach & Edelbrock, 1983) and the Piers-Harris Children's Self-Concept Scale ([PHCSCS]; Piers, 1984), although correlations were within the low to moderate range. Overall, the parent, teacher, and student forms all possess moderate to excellent levels of validity (Gresham and Elliot, 1990). Stability for ratings ranged from adequate to excellent across all three versions. For the current study, the Social Skills composite scale was used as a measure of children's prosocial behavior as reported by parents, teachers, and children. In analyses, it is referred to as the SSRS SS scale. In terms of reliability of the SS scale at pretreatment in the current study, Cronbach's alpha was .86 for the parent version, .83 for the teacher version, and .80 for the child version.

Post treatment alphas for the parent, teacher, and child version were .86, .93, and .91, respectively.

Eyberg Child Behavior Inventory (ECBI) and Sutter-Eyberg Student Behavior Inventory–Revised (SESBI-R)

The Eyberg Child Behavior Inventory (ECBI) and the Sutter-Eyberg Student Behavior Inventory-Revised (SESBI-R) are rating scales that measure the frequency and severity of conduct problems for children ages 2 through 16 years (Eyberg & Pincus, 1999). Each instrument takes approximately 10 minutes to complete. The ECBI is a 37-item behavior rating scale assessing the intensity and severity of common problem behaviors of children with conduct disorders. The SESBI-R is the 38-item teacher report companion to the ECBI. For both measures, behaviors are rated on a 7-point Intensity scale (*1 = never; 7 = always*) indicating the frequency of the behaviors and a *yes/no* Problem scale designating the severity of the behavior.

The ECBI was restandardized in 1999 (Eyberg & Pincus) with a sample of 798 children ages 2 through 16 years gathered from six outpatient pediatric settings in the Southeast. The normative sample demonstrated socioeconomic and ethnic diversity. The ECBI has an Intensity scale raw score cutoff of 131 and a Problem scale raw score cutoff of 15 or higher, with both cutoffs being equivalent to a *T*-score of 60. A high Intensity score indicates potential conduct problems for the identified child, while a high Problem score identifies a parent who is significantly concerned by the child's conduct problems.

Concerning the teacher version of the measure, the SESBI-R normative sample consisted of 415 elementary school children in regular and special education classes at

multiple sites in Gainesville, Florida. The sample included a diverse ethnic representation of teachers and children. Cutoff scores for the SESBI-R are also equivalent to a *T*-score of 60; however, the raw score cutoffs are 151 and 19 for the Intensity scale score and the Problem scale score, respectively.

Psychometrics for the ECBI and SESBI-R are reported in the professional manual for the instruments (Eyberg & Pincus, 1999). Overall, the ECBI and SESBI R demonstrate high levels of reliability and validity. These instruments are suggested to be sensitive to treatment outcomes concerning oppositional/defiant, inattentive, and conduct problem behaviors. The ECBI and SESBI-R contain a similar rating scale and provide professionals with useful screening information of the child's behavior across home and school environments. For the current study, the ECBI and SESBI-R are both used as measures of children's disruptive behavior. In the analyses, the Intensity scale is simply referred to as the ECBI for the parent version, and as the SESBI-R for the teacher version. Cronbach's alpha at pre treatment was .93 and .74 for the ECBI and SESBI-R, respectively. Reliability at post treatment showed alphas of .88 for the ECBI and .99 for the SESBI-R.

Brief Symptom Inventory (BSI)

The Brief Symptom Inventory (BSI) is a 53-item brief form of the Symptoms Checklist-90-Revised (SCL-90-R), with an estimated administration time of 10 minutes (Derogatis, 1993). Selected questions from the SCL-90-R are used verbatim on the BSI. The BSI assesses psychological symptom patterns across nine primary dimensions and three global indices of distress for adults and adolescents. The dimensions include

Somatization, Obsessive-Compulsive, Interpersonal Sensitivity, Depression, Anxiety, Hostility, Phobic Anxiety, Paranoid Ideation, and Psychoticism. The three global indices Global Severity Index, Positive Symptom Total, and Positive Symptom Distress Index, provide an overall assessment of psychological well-being. Ratings are measured on a 5-point scale (*0 = Not at all, 1 = A little bit, 2 = Moderately, 3 = Quite a bit, 4 = Extremely*) in response to each item as to “how much that problem has distressed or bothered you during the past 7 days including today” (Derogatis, 1993). Separate norms were developed using a diverse sample of 1,002 adult psychiatric outpatients, 974 adult nonpatients, 423 adult psychiatric inpatients, and 2,408 adolescent (ages 13 to 18 years) nonpatients for standardization purposes. Norms are also specified by gender. BSI scores are represented by *T*-scores, with a mean of 50 and a standard deviation of 10. Therefore, individuals with a *T*-score of 60 are at the 84th percentile of the normative sample and individuals with a *T*-score of 70 are at the 98th percentile of the normative sample. In terms of validity and reliability, Derogatis (1977) found high correlations between the SCL-90-R and the BSI, suggesting that the BSI is a valid measure of the SCL-90-R constructs. Further, psychometrics for the BSI indicate good internal consistency (Aorian & Patsdaughter, 1989; Croog et al., 1986), test-retest reliability (Derogatis, 1993), and temporal stability (Derogatis, 1993). For the current study, the General Severity Index of the BSI is used as a measure of parent psychological functioning. In the analyses, the General Severity Index is simply referred to as the BSI. Regarding reliability of the scale in the current study, Cronbach’s alpha was .95 at pre treatment and .93 at post treatment.

Parenting Stress Index-Short Form (PSI/SF)

The Parenting Stress Index-Short Form (PSI/SF) is a 36-item brief version of the Parenting Stress Index full-length test (Abidin, 1990). Selected questions on the PSI full-length test were used verbatim on the PSI/SF. The estimated administration time is 10 minutes, using a 5-point response scale (*Strongly Disagree, Disagree, Neutral, Agree, or Strongly Agree*) to the directions, “For each statement, please focus on the child you are most concerned about, and circle the response that best represents your opinion.” Scale scores resulting from the PSI/SF include Parental Distress, Parent-Child Dysfunctional Interaction, and Difficult Child. All three scores combine to form the Total Stress Score. Scores indicate clinically significant levels of stress when they are greater than or equal to 90% of the normative sample. In addition to scale scores, the PSI/SF includes the Defensive Responding scale as a validity measure, which identifies parental response sets that portray the individual in a favorable light or minimize the typical stressors related to parenting.

The PSI/SF is a reliable and valid measure of stress related to parenting (Abidin, 1990, 1995). All items for the short-form were taken from the full-length PSI, which was originally developed based on existing research literature and a panel of experienced clinicians. Additionally, the psychometrics of the PSI/SF in a low income, minority population was examined in an independent study conducted by Reitman, Currier, and Stickle (2002). Results supported high internal consistency and a three-factor structure (Parental Distress, Child Domain, and Parent-Child Dysfunctional Interaction) for the PSI/SF. For the current study, the Total Stress Score of the PSI is used as a measure of parental stress. In the analyses, the Total Stress Score is simply referred to as the PSI.

Reliability of the PSI in the current study is demonstrated by a Cronbach's alpha of .90 at pretreatment and .90 at post treatment.

Semi-Structured Interview

The Clinical Interview-Parent Report Form (Barkley, 1997) was used to gather information on family composition, as well as developmental, psychosocial, medical, family, school, and treatment history. Furthermore, the semi-structured interview includes detailed DSM-IV criteria for childhood disorders, including disruptive behavior disorders, mood disorders, and anxiety disorders. The clinical interview provided the parents with the opportunity to report more detailed accounts of specific behaviors exhibited by the child that could not be revealed in checklists or rating scales alone.

Video-taped Observations

All child SST sessions were video-taped and each child was coded by a pair of research assistants for their in-session behavior in terms of disruptive behaviors and prosocial behaviors. For the purposes of behavioral coding, disruptive behaviors were grouped into two categories: interrupting and not respecting the rights of others. Interrupting was defined as any behavior that disrupted the flow of the group by drawing inappropriate attention to the individual child or preoccupied the individual child's attention for greater than 30 seconds on something other than the topic at hand. Examples of interruptive behavior for children included excessive fidgeting, out of seat behavior, speaking out of turn, laughing inappropriately, off-topic participations, and raising their hand with responses of "I don't know" or "I forgot" when called on by the therapist. Not

respecting the rights of others was defined as any behavior that could hurt others' feelings, violated another individual's personal space, was noncompliant with authority, or caused harm to property. Examples of behaviors that constituted not respecting others' rights included making derogatory or sarcastic comments, touching others, destroying property, and noncompliance with a therapist's directive.

Children's behavior was also coded for prosocial behaviors. For the purposes of the current study, prosocial behavior was grouped into two categories: saying nice things and participation. Saying nice things was defined as any comment or behavior that positively reinforced another child's prosocial behavior or participation. Examples of nice things that a child could say included encouraging others to do their best, complimenting others, and using manners (i.e., please, thank you, you're welcome). Participation was defined as any behavior that was a relevant contribution to the specific topic of the group. Examples of participation included contributing a spontaneous or prompted response to discussion, participating in a role-play or other group activity, and asking questions for clarification. See Appendix B for a complete listing of the behavioral coding definitions.

A total of six research assistants were grouped into 3 pairs of coders. Each coder pair was assigned to code 4 to 5 identified children for both an earlier session (Time 1) and a later session (Time 2). Session 2 was chosen as a measure of behavioral functioning at Time 1, as the children had discussed the group rules in the previous session and began the core curriculum of the SST protocol during the second session. Due to attendance difficulties in the fall participants and scheduling complications in the spring participants, Session 5 was used for the fall participants as the measure of behavioral functioning at

Time 2, while Session 6 was used for the spring participants. The curriculum was coordinated so that both Fall Session 5 and Spring Session 6 covered the same manualized topic.

Coders received approximately 10 hours of training in the coding system. Coders were required to achieve 100% agreement in their pairs on two training coding cases before they were allowed to code participant behavior. Coder pairs viewed video tapes together, but independently coded the participant's frequency of behavior. At 5-minute intervals, coders compared their frequency counts for the designated behaviors for the identified child. If a discrepancy in the frequency of a given coded behavior occurred, the coder pair reviewed the 5-minute interval of the video-tape and recoded the behaviors for that segment. For each discrepancy they had, the coders recorded the type of behavior coded, the discrepancy in frequencies, and the reconciled frequency of the behavior. This coder procedure was used to decrease coder drift while allowing for efficient reconciliation of independent coded behaviors within the pairs of coders. The reliability of coded behaviors for each coder pair is listed in Table 1.

Table 1

Reliability for Behavioral Coders

| Coder Pair | Time 1 | | | Time 2 | | |
|----------------------|-------------|-----|-------|-------------|------|-------|
| | % Agreement | ICC | Kappa | % Agreement | ICC | Kappa |
| Pair 1 | | | | | | |
| Disruptive Behaviors | 95.88 | .99 | .97 | 97.62 | .97 | .95 |
| Prosocial Behaviors | 98.39 | .98 | .96 | 99.27 | .99 | .99 |
| Pair 2 | | | | | | |
| Disruptive Behaviors | 98.65 | .99 | .99 | 100.00 | 1.00 | 1.00 |
| Prosocial Behaviors | 98.40 | .98 | .96 | 99.29 | .99 | .98 |
| Pair 3 | | | | | | |
| Disruptive Behaviors | 96.43 | .99 | .98 | 94.23 | .97 | .94 |
| Prosocial Behaviors | 98.09 | .99 | .98 | 98.77 | .99 | .98 |
| All pairs | | | | | | |
| Disruptive Behaviors | 96.99 | .99 | .98 | 97.10 | .98 | .97 |
| Prosocial Behaviors | 98.28 | .98 | .97 | 99.00 | .99 | .98 |

Note: % Agreement = Percent agreement before reconciliation; ICC = intraclass correlation coefficient.

Procedure

Pre and post intervention assessment using the previously mentioned instruments with the child, his/her teachers, and his/her parents was conducted. All children were

enrolled on a first-come-first-serve basis for the study. Although children who participated in the fall were randomly assigned to a treatment condition, all children who participated in the spring received the combined SST and PT treatment condition, as only one group could be formed from the low number of participants. In terms of ethical treatment delivery, it was decided by the primary researcher and clinical supervisors that children in this latter group should receive all components of the possible treatments.

The psychological associate (graduate student therapist) explained consent procedures to parents and teachers (see Appendix C for consent and assent forms). Specifically, parents and teachers were informed that agreeing to be in the study allowed the information collected during the pre and post assessments and the systematic observations of behavior taken during each session to be used in statistical analyses. Furthermore, adult participants were advised that this data may be used anonymously in the form of group statistics to be presented at conferences or in journal articles. Parents and teachers were told that participation in the study would not involve any additional procedures and that their decision regarding the study will not affect their child's or student's eligibility for the group. Children participating in the study were asked at the end of the pre-intervention assessment to assent to having their records used for research purposes. Both parents and teachers participating in the study signed consent forms, while child participants completed assent forms. If a child had met criteria for inclusion in the group but refused to assent or their parents or teachers refused to consent to research participation would have been permitted to participate in the group and their data would have been used for clinical purposes only. Participants were charged a

minimal fee of \$25.00 to attend the groups to recuperate the costs of the pre and post assessment batteries.

Participation in the SST condition was for approximately 2 months and included a pre-assessment session, eight 2-hour child sessions conducted weekly over an 8-week period, three parent generalization sessions designed to inform parents of the skills their children were learning during the group, and a post-intervention assessment. Participants who received SST and PT attended similar sessions and completed the same assessments as outlined above, in addition to receiving eight concurrent 2-hour sessions of PT for parents with children exhibiting disruptive behaviors.

Intervention Conditions

Each of the SST intervention teams consisted of two psychological associates who led the groups, one supervisor, and one research assistant who observed the group. The PT intervention team consisted of two psychological associates and one supervisor. All psychological associates leading the groups had at least 1 year of clinical experience or previous experience leading group interventions. The psychological associates were under the direct supervision of a licensed psychologist who was a faculty member at Oklahoma State University associated with the Psychological Services Center (PSC) and who was available during all sessions to assist the psychological associates. Each of the parent groups were also be led by the psychological associates and overseen by the supervisor who was associated with the corresponding child group. Psychological associates were trained by attending workshop sessions and watching videos covering the manualized SST and PT treatment procedures and protocol. The psychological associates

received weekly supervision in both individual and group formats from the licensed psychologist mentioned above who was proficient in these treatment protocols. The manualized protocols included session outlines and a list of common materials to be used during session.

SST

The SST only intervention covered a variety of topics included in an unpublished manualized treatment (Hartung et al., 2003). As previously described, the eight weekly child group sessions covered several SST topics using social problem-solving and cognitive-behavioral techniques. Methods of the intervention included didactic instruction, modeling, role-playing, and *in vivo* practice of the skills. The three parent sessions covered techniques for the parents to use to increase the child's generalization of the skills learned during group.

SST/PT

The second intervention included all the sessions as outlined in the SST intervention in addition to supplementary parent group sessions that were an 8-week adaptation of the COPE manualized treatment (Cunningham, Bremner, & Secord, 1998). Parents were taught skills to improve parent-child interactions through the use of effective discipline practices. The parenting groups were presented in a collaborative format rather than a didactic one. In addition, skills were presented in the form of video-taped-vignettes with the group leader facilitating parent reactions to the viewed material. The leader modeled the new skill for the parents and the parents rehearsed the skills using

role-play with group members. Finally, parents completed homework assignments based on the skills learned during group and provided support to other group members through extracurricular contact.

CHAPTER IV

Results

Analyses were conducted for the four main hypotheses and three exploratory questions. Although the total sample for the study existed of 14 children and their primary parents, missing data resulted in unequal subsample sizes across analyses depending on the variables included in the comparison. Reasons for missing data included experimenter error (i.e., intake personnel not gathering complete data, poor quality video-tapes), participant error (i.e., not completing questionnaires or omitting items), and attrition. For example, only 10 of the primary parents and 8 of the teachers completed the BASC pre and post treatment. Any changes in variable coding due to low frequency groups are explained in the specific description of the analysis. For all the analyses, due to the low overall sample size ($N = 14$), results must be interpreted with caution.

Analyses were conducted to determine differences between participants with missing data and those with complete data. Differences for primary parent age, gender, ethnicity, marital status, custody of child, household income, treatment condition, number of sessions attended, and parent functioning scores (i.e., BSI and PSI) were explored for each subsample. Also, differences between parent participants with missing data and those with complete data were explored in terms of their child's characteristics, such as school attended, semester attending treatment, previous treatment provided to child,

medication status for child, and scores of child outcome measures (i.e., BASC, ECBI, and SSRS) at pre treatment. Of note, only one family did not finish the intervention; however, this family accounted for two child and two parent participants in the SST/PT condition. The reason was unknown why the family ceased treatment. Participants who completed the pre and post treatment measures ($M = 40.3$, $SD = 8.04$) were significantly more likely to be older than participants who did not complete the pre and post treatment measures ($M = 30.25$, $SD = 3.862$), $F(1,13) = 5.52$, $p = .037$. Also, fewer than expected primary parents who shared custody of their child with the child's stepparent did not complete pre and post measures ($\chi^2(2, N = 14) = 7.47$, $p = .024$). No other significant differences in parent characteristics or child characteristics between parent participants completing and those not completing pre and post measures were found.

All hypotheses and exploratory questions concerning group differences over time were tested with separate mixed design ANOVAs for each dependent variable [intervention was a between subjects factor with two levels (SST and SST/PT) and time was a within subjects factor with two levels (pre and post)]. Tables of means and standard deviations for parent, teacher, and child measures for each analysis are summarized in Appendix D.

Hypothesis 1

Hypothesis 1 stated that children participating in the SST/PT group would have a greater decrease in reported aggressive behaviors pre to post treatment than children randomly assigned to the SST-only group. Decreases in aggressive behaviors for Hypothesis 1 were further defined as: a) lower scores on the BASC AGG of the parent

report pre to post treatment, and b) lower scores on the BASC AGG of the teacher report pre to post treatment. The hypothesis was not supported (see Tables 2 and 3).

Table 2

Summary of ANOVA Findings for Hypothesis 1a: Parent BASC AGG

| Source | <i>df</i> | <i>F</i> | η_p^2 | <i>p</i> | Power |
|-------------------------------|-----------|----------|------------|----------|-------|
| Between Subjects | | | | | |
| Intervention ^a (I) | 1 | 0.50 | .06 | .50 | .10 |
| I within group error | 8 | (373.26) | | | |
| Within Subjects | | | | | |
| Time ^b (T) | 1 | 3.01 | .27 | .12 | .33 |
| I X T | 1 | 1.16 | .13 | .31 | .16 |
| I X T within group error | 8 | (153.62) | | | |

Note: *n* = 10; values enclosed in parentheses represent mean square errors.

^aIntervention levels = SST and SST/PT. ^bTime levels = pre and post treatment.

Table 3

Summary of ANOVA Findings for Hypothesis 1b: Teacher BASC AGG

| Source | <i>df</i> | <i>F</i> | η_p^2 | <i>p</i> | Power |
|-------------------------------|-----------|----------|------------|----------|-------|
| Between Subjects | | | | | |
| Intervention ^a (I) | 1 | 1.02 | .15 | .35 | .14 |
| I within group error | 6 | (237.66) | | | |
| Within Subjects | | | | | |
| Time ^b (T) | 1 | 0.86 | .13 | .39 | .12 |
| I X T | 1 | 2.05 | .25 | .20 | .23 |
| I X T within group error | 6 | (14.72) | | | |

Note: $n = 8$; values enclosed in parentheses represent mean square errors.

^aIntervention levels = SST and SST/PT. ^bTime levels = pre and post treatment.

Hypothesis 2

Hypothesis 2 stated that children participating in the SST/PT group would have a greater decrease in reported hyperactive behaviors pre to post treatment than children randomly assigned to the SST-only group. Decreases in hyperactive behaviors for Hypothesis 3 were further defined as: a) lower scores on the parent BASC HYPpre to post treatment, and b) lower scores on the teacher BASC HYPpre to post treatment. Poor internal consistency at post treatment for the parent BASC HYP scale did not allow for a meaningful analysis of this variable. The hypothesis for the teacher BASC HYP was not supported (see Table 4).

Table 4

Summary of ANOVA Findings for Hypothesis 2b: Teacher BASC HYP

| Source | <i>df</i> | <i>F</i> | η_p^2 | <i>p</i> | Power |
|-------------------------------|-----------|----------|------------|----------|-------|
| Between Subjects | | | | | |
| Intervention ^a (I) | 1 | 2.14 | .26 | .19 | .24 |
| I within group error | 6 | (325.49) | | | |
| Within Subjects | | | | | |
| Time ^b (T) | 1 | 0.05 | .01 | .84 | .05 |
| I X T | 1 | 1.49 | .20 | .27 | .18 |
| I X T within group error | 6 | (7.27) | | | |

Note: *n* = 8; values enclosed in parentheses represent mean square errors.

^aIntervention levels = SST and SST/PT. ^bTime levels = pre and post treatment.

Hypothesis 3

Hypothesis 3 stated that children participating in the SST/PT group would have a greater decrease in reported negative conduct behaviors pre to post treatment than children randomly assigned to the SST-only group. Decreases in negative conduct for Hypothesis 3 were further defined as: a) lower scores on the ECBI pre to post treatment, and b) lower scores on the SESBI-R pre to post treatment. The hypothesis was not supported (see Tables 5 and 6).

Table 5

Summary of ANOVA Findings for Hypothesis 3a: ECBI

| Source | <i>df</i> | <i>F</i> | η_p^2 | <i>p</i> | Power |
|-------------------------------|-----------|----------|------------|----------|-------|
| Between Subjects | | | | | |
| Intervention ^a (I) | 1 | 0.71 | .08 | .42 | .12 |
| I within group error | 8 | (230.60) | | | |
| Within Subjects | | | | | |
| Time ^b (T) | 1 | 0.19 | .23 | .68 | .07 |
| I X T | 1 | 0.32 | .04 | .59 | .08 |
| I X T within group error | 8 | (169.10) | | | |

Note: $n = 10$; values enclosed in parentheses represent mean square errors.

^aIntervention levels = SST and SST/PT. ^bTime levels = pre and post treatment.

Table 6

Summary of ANOVA Findings for Hypothesis 3b: SESBI-R

| Source | <i>df</i> | <i>F</i> | η_p^2 | <i>p</i> | Power |
|-------------------------------|-----------|----------|------------|----------|-------|
| Between Subjects | | | | | |
| Intervention ^a (I) | 1 | 0.96 | .14 | .37 | .13 |
| I within group error | 6 | (180.43) | | | |
| Within Subjects | | | | | |
| Time ^b (T) | 1 | 2.95 | .33 | .14 | .30 |
| I X T | 1 | 2.95 | .33 | .14 | .30 |
| I X T within group error | 6 | (9.06) | | | |

Note: $n = 8$; values enclosed in parentheses represent mean square errors.

^aIntervention levels = SST and SST/PT. ^bTime levels = pre and post treatment.

Hypothesis 4

Hypothesis 4 stated that children participating in the SST/PT group would have a greater increase in reported prosocial behaviors pre to post treatment than children randomly assigned to the SST-only group. Increases in prosocial behaviors for Hypothesis 4 were defined as: a) higher scores on the parent SS pre to post treatment, b) higher scores on the teacher SS pre to post treatment, and c) higher scores on the student SS pre to post treatment. The hypothesis was not supported for the teacher and child SS. Although the hypothesis was not supported for the parent SS, there was a main effect of time, such that primary parents reported an increase in their children's social skills from pre to post treatment. See Tables 7, 8, and 9 for detailed results concerning Hypothesis 4.

Table 7

Summary of ANOVA Findings for Hypothesis 4a: Parent SS

| Source | <i>df</i> | <i>F</i> | η_p^2 | <i>p</i> | Power |
|-------------------------------|-----------|----------|------------|----------|-------|
| Between Subjects | | | | | |
| Intervention ^a (I) | 1 | 0.74 | .10 | .42 | .12 |
| I within group error | 7 | (723.35) | | | |
| Within Subjects | | | | | |
| Time ^b (T) | 1 | 12.63 | .64 | .009** | .86 |
| I X T | 1 | 3.62 | .34 | .10 | .38 |
| I X T within group error | 7 | (30.20) | | | |

Note: *n* = 9; values enclosed in parentheses represent mean square errors.

^aIntervention levels = SST and SST/PT. ^bTime levels = pre and post treatment.

***p* < .01.

Table 8

Summary of ANOVA Findings for Hypothesis 4b: Teacher SS

| Source | <i>df</i> | <i>F</i> | η_p^2 | <i>p</i> | Power |
|-------------------------------|-----------|----------|------------|----------|-------|
| Between Subjects | | | | | |
| Intervention ^a (I) | 1 | 0.40 | .01 | .85 | .05 |
| I within group error | 6 | (849.00) | | | |
| Within Subjects | | | | | |
| Time ^b (T) | 1 | 0.60 | .09 | .47 | .10 |
| I X T | 1 | 0.55 | .08 | .49 | .10 |
| I X T within group error | 6 | (473.22) | | | |

Note: $n = 8$; values enclosed in parentheses represent mean square errors.

^aIntervention levels = SST and SST/PT. ^bTime levels = pre and post treatment.

Table 9

Summary of ANOVA Findings for Hypothesis 4c: Student SS

| Source | <i>df</i> | <i>F</i> | η_p^2 | <i>p</i> | Power |
|-------------------------------|-----------|----------|------------|----------|-------|
| Between Subjects | | | | | |
| Intervention ^a (I) | 1 | 0.02 | .00 | .89 | .05 |
| I within group error | 9 | (463.80) | | | |
| Within Subjects | | | | | |
| Time ^b (T) | 1 | 3.27 | .27 | .10 | .37 |
| I X T | 1 | 0.39 | .04 | .55 | .09 |
| I X T within group error | 9 | (256.80) | | | |

Note: $n = 11$; values enclosed in parentheses represent mean square errors.

^aIntervention levels = SST and SST/PT. ^bTime levels = pre and post treatment.

Exploratory Question 1

Exploratory question 1 examined how children who were randomly assigned to the SST/PT group versus the SST-only group differed in terms of observed in-session disruptive behaviors pre to post treatment. Due to the low occurrence of behaviors previously defined as not respecting others, the frequency of these coded behaviors was summed with the frequency of coded interruptions for each child to allow for a more meaningful interpretation of the analysis. The ANOVA results were not significant (see Table 10).

Table 10

Summary of ANOVA Findings for Exploratory Question 1: Observational Data for Disruptive Behaviors In-Session

| Source | <i>df</i> | <i>F</i> | η_p^2 | <i>p</i> | Power |
|-------------------------------|-----------|----------|------------|----------|-------|
| Between Subjects | | | | | |
| Intervention ^a (I) | 1 | 0.59 | .06 | .46 | .11 |
| I within group error | 10 | (535.43) | | | |
| Within Subjects | | | | | |
| Time ^b (T) | 1 | 1.45 | .13 | .26 | .19 |
| I X T | 1 | 0.00 | .00 | .99 | .05 |
| I X T within group error | 10 | (190.68) | | | |

Note: $n = 12$; values enclosed in parentheses represent mean square errors.

^aIntervention levels = SST and SST/PT. ^bTime levels = pre and post treatment.

Exploratory Question 2

Exploratory Question 2 examines how children randomly assigned to the SST/PT group versus the SST-only group differed in terms of observed in-session prosocial behaviors (defined as a combination of behaviors concerning saying nice things and participation). The ANOVA results were not significant (see Table 11).

Table 11

Summary of ANOVA Findings for Exploratory Question 2: Observational Data for Prosocial Behaviors In-Session

| Source | <i>df</i> | <i>F</i> | η_p^2 | <i>p</i> | Power |
|-------------------------------|-----------|----------|------------|----------|-------|
| Between Subjects | | | | | |
| Intervention ^a (I) | 1 | 0.29 | .03 | .60 | .08 |
| I within group error | 11 | (175.16) | | | |
| Within Subjects | | | | | |
| Time ^b (T) | 1 | 3.63 | .25 | .08 | .41 |
| I X T | 1 | 0.25 | .02 | .63 | .07 |
| I X T within group error | 11 | (215.31) | | | |

Note: *n* = 13; values enclosed in parentheses represent mean square errors.

^aIntervention levels = SST and SST/PT. ^bTime levels = pre and post treatment.

Exploratory Question 3

This question sought to answer if parents whose children were randomly assigned to the SST/PT group versus the SST-only group differed in terms of PSI scores pre to post treatment. Results were nonsignificant (see Table 12).

Table 12

Summary of ANOVA Findings for Exploratory Question 3: PSI

| Source | <i>df</i> | <i>F</i> | η_p^2 | <i>p</i> | Power |
|-------------------------------|-----------|----------|------------|----------|-------|
| Between Subjects | | | | | |
| Intervention ^a (I) | 1 | 1.06 | .12 | .33 | .15 |
| I within group error | 8 | (443.85) | | | |
| Within Subjects | | | | | |
| Time ^b (T) | 1 | 2.51 | .24 | .15 | .29 |
| I X T | 1 | 0.64 | .07 | .45 | .11 |
| I X T within group error | 8 | (127.85) | | | |

Note: *n* = 10; values enclosed in parentheses represent mean square errors.

^aIntervention levels = SST and SST/PT. ^bTime levels = pre and post treatment.

Exploratory Question 4

Exploratory Question 4 looked at how parents whose children were randomly assigned to the SST/PT group versus the SST-only group differed in terms of BSI scores pre to post treatment. No significant results were found (see Table 13).

Table 13

Summary of ANOVA Findings for Exploratory Question 4: BSI

| Source | <i>df</i> | <i>F</i> | η_p^2 | <i>p</i> | Power |
|-------------------------------|-----------|----------|------------|----------|-------|
| Between Subjects | | | | | |
| Intervention ^a (I) | 1 | 0.14 | .02 | .72 | .06 |
| I within group error | 7 | (222.96) | | | |
| Within Subjects | | | | | |
| Time ^b (T) | 1 | 0.06 | .01 | .81 | .06 |
| I X T | 1 | 0.98 | .12 | .36 | .14 |
| I X T within group error | 7 | (51.00) | | | |

Note: $n = 10$; values enclosed in parentheses represent mean square errors.

^aIntervention levels = SST and SST/PT. ^bTime levels = pre and post treatment.

Exploratory Question 5

To investigate the relationship between parenting stress (as measured by the PSI), parent psychological functioning (as measured by the BSI), and parent reported child outcome measures (BASC AGG, BASC HYP, ECBI, and Parent SS) at both pre and post treatment, a correlation matrix was constructed to compare the pre and post treatment scores on the PSI and BSI to the child outcome scores at pre and post treatment. The Pearson's r correlations were significant between PSI Time 1 and BASC AGG Time 1, BASC HYP Time 1, SS Time 2, and BASC HYP Time 2. In addition, correlations were significant between PSI Time 2 and ECBI Time 1 and ECBI Time 2. There were no significant correlations with the BSI Time 1 or Time 2. See Table 14 for the complete correlation matrix. It should be noted that many nonsignificant correlations were of a moderate size, but sample sizes for each analysis were very small.

Table 14

Correlation Matrix for BSI and PSI at Time 1 and Time 2

| Variable | 1 | 2 | 3 | 4 |
|---------------------|--------------------|-------------------|--------------------|-------------------|
| 1. PSI Time 1 | | | | |
| 2. BSI Time 1 | .42 ^a | | | |
| 3. PSI Time 2 | .57 ^b | .34 ^a | | |
| 4. BSI Time 2 | .45 ^b | .62 ^c | .61 ^b | |
| 5. BASC AGG Time 1 | .66 ^{d*} | .02 ^a | .51 ^b | .12 ^b |
| 6. BASC HYP Time 1 | .67 ^{d**} | .38 ^a | .34 ^b | .31 ^b |
| 7. ECBI Time 1 | .44 ^d | -.20 ^a | .37 ^b | -.25 ^c |
| 8. SS Time 1 | -.61 ^{a*} | -.05 ^a | -.62 ^c | -.26 ^c |
| 9. BASC AGG Time 2 | .37 ^b | .11 ^c | .03 ^b | .28 ^b |
| 10. BASC HYP Time 2 | .86 ^{b**} | .27 ^c | .63 ^b | .59 ^b |
| 11. ECBI Time 2 | .58 ^b | .14 ^c | .80 ^{b**} | .49 ^b |
| 12. SS Time 2 | -.47 ^b | .11 ^b | -.49 ^b | -.20 ^b |

Note: ^a $n = 13$; ^b $n = 10$; ^c $n = 9$; ^d $n = 14$.

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

CHAPTER V

Discussion

The purpose of the present study was to examine the effectiveness of school-based social skills training (SST) and parenting training (PT) groups in a rural community. More specifically, the study examined the differences in disruptive behaviors, aggressive behaviors, and prosocial behaviors for children who were randomly assigned to an SST-only group compared to children who were randomly assigned to an SST/PT combination group. Additionally, the study explored the relationship between a number of participant characteristics, pre and post treatment assessment measures, parenting stress, and parent psychological functioning. Finally, all results must be interpreted with caution as the total number of participants was 14 for the groups combined. In addition to the total sample of primary parents and children for the study being small, missing data resulted in unequal subsample sizes across analyses depending on the variables included in the comparison. With minimal power for almost all analyses, few conclusive statements can be made and generalizability of the results is nominal. However, some medium effect sizes lend hope to the future of continued research in the area and overall findings provide important insights for research within rural communities.

Summary of Results and Implications of Findings

Analyses conducted to determine differences between parent participants with missing data compared to those with complete data showed that parent participants who completed the pre and post treatment measures were generally older than parent participants who did not complete the pre and post treatment measures. Such a phenomenon has also been exhibited in previous studies with longitudinal data regarding parent-child relationships in pediatric samples (Janus & Goldberg, 1997) Possible confounding variables that were not assessed in the current study that may have contributed to the relationship of age and attrition could have included older parents being more established in terms of housing, financial, and personal resources, which all may ultimately influence prognosis for treatment adherence. Additionally, older parents who have chronologically had the opportunity to parent longer may be more likely to have other children to whom they are able compare the target child's behavior. With such a natural comparison, older parents may more readily acknowledge that their target child needs to be in treatment and thus may be more motivated to complete treatment.

In terms of other significant findings relating parent characteristics to attrition, fewer than expected primary parents who shared a household with the child's stepparent did not complete pre and post measures. Previous research conducted by Hofferth and Anderson (2003) suggests that stepfathers, in particular, may be less involved in stepchildren's lives depending on a number of variables (i.e., child's age, composition of blended family, and responsibilities to nonresidential children). Anecdotally, in the current study, at least one primary parent reported that the stepparent felt the responsibility of the child's treatment was that of the primary parent and thus did not

attend parent sessions or complete research measures. Stepparents' roles not only in supporting the primary parent, but also as an active participant in treatment should be considered in future studies. In clarifying these roles, it would be important to distinguish how stepparents may serve as barriers versus supports for treatment and how having stepparent involvement in some regard may be related to the family's motivation to change. For the current study, there were no other significant differences in parent characteristics or child characteristics between parent participants completing and those not completing pre and post measures.

Hypotheses 1 and 2

Hypothesis 1 stated that children participating in the SST/PT group would have a greater decrease in parent and teacher reported aggressive behaviors on the BASC pre to post treatment than children randomly assigned to the SST-only group. However, results did not support this hypothesis. Interestingly, although power was not sufficient to detect significant differences, parent reported aggression scores decreased over time for both groups. Previous studies suggest that children receiving interventions that include problem-solving techniques (as did the current study) significantly reduce their aggressive behaviors across environments and involvement in parenting programs results in improvements on parent and teacher reports of children's conduct problems (Kazdin, 2002). Obviously, with a larger sample size, more conclusive statements could be made regarding the effects of the current interventions on aggressive behavior. Another possible factor that may have hampered support for this hypothesis was the use of the BASC as an outcome measure. Although prominently used throughout child research

(Flanagan, 1995; Gladman & Lancaster, 2003; Merenda, 1996), perhaps the BASC was not as sensitive of a measure for change as is necessary for an 8-week program. Particularly, the BASC instructions are specific to rating a child's behavior over a 6-month period; however, in the current study, parents were asked at post treatment to rate their child's behavior as compared to when the child entered the program, which is a 2-month time period. Also, the BASC is a 4-point Likert scale rating the frequency of the child's behavior as *never*, *sometimes*, *often*, and *always*. Appropriate scales to measure outcomes for brief interventions may need to detect more subtle changes or may need to be worded in terms specific to a given frequency (i.e., instead of "often," questionnaire offers "3-5 times daily" as a response).

A final consideration that may have contributed to a lack of support for Hypothesis 1 may be the heterogeneity of the group in terms of diagnosis. For example, diagnoses in the current study included disruptive behaviors, pervasive developmental disorders, mood/anxiety problems, and general adjustment issues. Although the research indicates that some homogenous group interventions for children with conduct problems are not beneficial (Rhule 2005), the literature is less clear on whether combining children with differing sequela of social skills problems in groups is advantageous. As previously discussed in the review of the literature, Durlak and colleagues (1991) concluded cognitive-behavioral interventions were equally effective regardless of specific treatment components in addressing several types and severities of childhood behavior problems. Likewise, Antshel and Remer (2003) found that SST for heterogeneous groups of children with ADHD-C and ADHD-I generally led to increased parent reports of prosocial behaviors; however, a small cohort of children with ADHD-I who were in a

heterogeneous group were rated by parents to have a decrease in social skills pre to post intervention. It was hypothesized that heterogeneous group interventions were contraindicated for the small cohort of children due to the phenomenon of social contagion. Rhule further indicates that although some deviant behaviors increase as a result of group intervention, this does not preclude that some group interventions are effective. Instead, it indicates the importance of adequate evaluation measures and appropriate comparison groups to determine the iatrogenic versus beneficial effects of group treatment. It may also indicate the necessity of adequately defining the types of problems the intervention will treat. For example, Kazdin (2002) states that aggressive acts can vary greatly in terms of qualitative content and quantitative features, thus, identifying effective treatments can be difficult.

Additionally, results did not support the hypothesis for teacher report; however, the intervention by time interaction demonstrated a medium effect size. It is important to note that while the teacher reported levels of child aggression for the SST-only participants decreased from pre to post treatment and the reported levels of child aggression slightly increased (1 point) from pre to post treatment in the SST/PT group, each of these groups had extremely low subsample sizes ($n = 3$ and 5 , respectively). While it is possible that children in the SST-only group experienced greater clinical gains, one must consider possible reporting biases. In particular, the same teacher rated the 3 children in the SST-only group, while different teachers rated the children in the SST/PT group. With such small sample sizes, no conclusive statements can be made, but possible confounds to consider in future research are implicated. For instance, when conducting research in rural schools, the researcher should consider which teacher will

complete the questionnaires and whether or not the teacher will be rating children in one or both treatment conditions.

Hypothesis 2 stated that children participating in the SST/PT group would have a greater decrease in parent and teacher reported hyperactive behaviors on the BASC pre to post treatment than children randomly assigned to the SST-only group. Although the analyses were not conducted for the parent report of hyperactivity due to poor reliability of the measure at post treatment and findings were nonsignificant for the teacher report, one pattern of interest arose in the teacher reports. Specifically, the main effect of intervention for teacher report had a medium effect size and the means indicated that the children in the SST-only group demonstrated lower levels of hyperactivity than children in the SST/PT group. The results for the teacher report of hyperactivity and aggression suggest that children in the SST-only group demonstrated greater decreases in negative behaviors. Although teacher reporting bias as discussed in Hypothesis 1 is also a factor here, the pattern in the nonsignificant data for the current study indicates the possibility that interventions with only an SST component may be equally or more effective than programs with combined child SST and PT components in decreasing negative behavior at school. Such a finding would be particularly important in determining appropriate interventions for underserved populations, such as rural communities, where resources are limited and implementation of programs often depends on funding and coordination of services (Kelleher et al., 1992; McDonald et al., 2005).

Hypothesis 3

Hypothesis 3 stated that children participating in the SST/PT group would have a greater decrease in parent and teacher reported disruptive behaviors pre to post treatment than children randomly assigned to the SST-only group. As with Hypotheses 1 and 2, this hypothesis was not supported. Effect sizes were small for parent reported disruptive behaviors for all comparisons; however, effect sizes were in the medium range for the main effect of time and in the intervention by time interaction for teacher report of child behavior. Specifically, teachers reported a slight decrease in children's disruptive behaviors pre to post treatment, and further indicated that these differences were most pronounced in children receiving the SST-only intervention. Again, similar considerations as discussed above regarding the individuals completing the teacher report on the BASC apply to the SESBI-R. The ECBI and SESBI-R are gaining in popularity for use in child clinical work, have demonstrated good reliability and validity, and have been shown to be sensitive to treatment effects occurring over a short period of time (Eyberg & Pincus, 1999). The questionnaire instructions do not refer to a specific time period and delineates changes in behavior with a 7-point Likert scale. Hence, with the combined psychometrics and flexibility in design of the questionnaire, it is thought that the ECBI and SESBI-R are appropriate measures of children's disruptive behavior for the current study. With a larger sample size and greater power, it would be interesting to see if the teacher reported differences would continue with the pattern demonstrated in the nonsignificant data of the current study.

Hypothesis 4

Hypothesis 4 stated that children participating in the SST/PT group would have a greater increase in parent, teacher, and self-reported prosocial behaviors pre to post treatment than children randomly assigned to the SST-only group. Although results for the teacher and child social skills were nonsignificant and Hypothesis 4 was not supported in terms of differences among intervention groups, primary parents reported a significant increase in their children's social skills from pre to post treatment with a large effect size and adequate power to detect significance. This finding is promising in light of the overall limitations of the study. In particular, based on the parent report, the interventions were successful in improving targeted social skills and problem-solving techniques. To further support this contention, the self report scores generally increased from pre to post treatment and exhibited a medium effect size. With a larger sample size, it would be interesting to see if further changes are revealed across the treatments by time, as the interaction for the parent report in the current study approached significance with a medium effect size. Specifically, although children in both groups experienced increases in social skills, the children in the SST-only group demonstrated the greatest change in social skills from pre to post treatment. Although such a finding could be interpreted as evidence that SST-only groups are most effective in increasing social skills, it should be noted that the mean for the children in the combined group was the higher of the two groups at both pre and post treatment. Therefore, the children in the combined group began treatment with a higher level of social skills and had fewer social deficits to amend throughout treatment. With respect to previous research the literature strongly suggests that although either SST or PT alone can improve child functioning,

SST and PT combined interventions demonstrate greater improvements in reducing deviant behavior and increasing prosocial competence (Kazdin, 2003b; Kazdin et al., 1992; Webster-Stratton & Hammond, 1997; Webster-Stratton & Reid, 2003). However, one should also consider that SST-only groups, as compared to combined interventions, are most useful within the rural context. For example, stressors unique to rural families may inhibit parents from being formally involved in their child's treatment. Thus, if the current study had implemented SST-only groups during school hours, perhaps more children would have been served by the interventions. In the end, it is possible that treating more children with higher compliance to treatment may be preferable to treating fewer families with higher attrition.

Exploratory Questions 1 and 2

Both Exploratory Questions 1 and 2 investigated how children who were randomly assigned to the SST/PT group versus the SST-only group differed in terms of observed in-session behaviors pre to post treatment. Disruptive behaviors and prosocial behaviors were coded from video taped sessions. Results were nonsignificant. However, prosocial behaviors generally increased from pre to post treatment and exhibited a medium effect size, demonstrating a similar pattern to the parent and child report of increasing prosocial skills over time. Spence (2003) suggests that behavioral observations are an important component of research, as they serve as an additional modality for measuring change. Especially when evaluating the effectiveness of SST, which is inherently aimed at improving social interactions, behavioral observation data become an informative portion of a multimodal assessment.

Interestingly, few of the prominently cited studies in the SST and PT literature included behavioral observations for the purposes of determining outcome of the interventions, and none included in-session coding of behavior. The few examples of independently coded behavioral observations include the Dyadic Parent-Child Interactive Coding System (DPICS; used by Hembree-Kigin & McNeil, 1995; Webster-Stratton & Hammond, 1997) and the Academic Engagement Time (AET) observations (used by the First Step Program; Golly, Stiller, and Walker, 1998; Walker, Kavanah, et al., 1998; Walker, Stiller, et al., 1998). However, neither of these observational coding systems examines the interaction between peers. Structured behavior observation systems that are specifically designed with peer relations in mind are the PLAY classroom-based observation system (Farmer-Dougan & Kaszuba, 1999) that assesses solitary, parallel, associative, and cooperative play behaviors in pre-school children, and the in-patient psychiatric peer interaction coding system (Michelson & Dilorenzo, 1981) that assesses adaptive peer interaction, maladaptive peer interactions, solitary independent play, and response to staff. Of the extensive literature reviewed for SST and PT interventions, only one research group included independent observations of child interactions with peers. Webster-Stratton and Hammond conducted a 20-minute observation to evaluate children ages 4 to 7 years in terms of skills for cooperative play and competitive play. The Peer Problem-Solving-Interaction Communication-Affect Rating Coding System (PPS-I CARE) used by Webster-Stratton and Hammond includes total negative social skills, negative conflict management, and positive conflict management. These categories are further divided into codes for items such as disagreements, commands, criticisms, demanding attention, threatening, intruding in other child's space, yelling, compromise,

and offer a prosocial solution to the problem. Using the PPS-I CARE observation system, Webster-Stratton and Hammond found that children in SST-only and SST/PT interventions used conflict management strategies with peers at a higher ratio than controls. The study indicated that the PT component did not significantly contribute to the children's improvements in observed behavior; however, the additional component did contribute to parent report of child improvements.

Having the PPS-I CARE system as the lone exemplar of behavioral observation for peer interactions as part of an SST/PT study, there is an apparent lack of available structured observational measures for peer interactions and limited use of behavioral observations for peer interactions in the SST and PT literature within the last decade. Although an important aspect of the study, several improvements could be implemented to the current in-session behavioral coding system to improve its value for detecting behavioral change within session. Particularly, the definitions for disruptive and prosocial behaviors could be honed to better distinguish the qualitative nature of behaviors exhibited in-session. For example, disruptive behaviors for the study were categorized as either interruptions or not respecting others. The latter proved to be a low occurrence behavior (coded 11 times for the study), while interruptions occurred quite frequently (coded 429 times for the study). Perhaps the observational data would be more informative if behaviors that constituted interruptions (e.g., out of seat behavior, talking out of turn, off-topic participations) were distinctly classified as separate codes. In addition, it is possible that one of the existing coding systems, such as the PPS-I CARE, could be modified to assess peer interactions within session.

Exploratory Questions 3 and 4

Exploratory Questions 3 and 4 examined how parents whose children were randomly assigned to the SST/PT group versus the SST-only group differed in terms of parent functioning pre to post treatment. The dependent variable for Exploratory Question 3 was parenting stress, while the dependent variable for Exploratory Question 4 was parent psychological functioning. Neither hypothesis was supported and results demonstrated insufficient power and minimal effect sizes for both sets of analyses. This suggests that the SST and PT interventions used in this study were not particularly adept at decreasing parenting stress or parent psychological functioning within the targeted rural population. This is contrary to previous literature indicating that PT interventions decrease reported levels of parenting stress and improved parent psychological functioning (see review by Jackson & Leonetti, 2001; Kazdin & Wassell, 2000b). Notably, the previous literature differs from the current study in that the former demonstrated decreases in children's negative behavior due to the intervention. Such improvements in child behavioral functioning likely decreased parent stress levels. It is also possible that previous studies exhibited changes in parenting stress due to the specific content of the treatment components implemented. For example, Kazdin and Whitley (2003) found that augmenting the PT component of SST/PT interventions with skills specifically designed to increase the parent's repertoire of problem-solving techniques contributed to changes in parenting stress and parent psychological functioning. Specifically, in the SST/PT that only addressed how to deal with children's behavior problems, parents experienced reduced parenting stress and improved psychological functioning over time. Interestingly, families receiving the SST/PT with

the additional intervention focused on parent problem-solving demonstrated even greater decreases in parenting stress and increases in parent psychological functioning. Such an augmentation to the PT used in the current study may more effectively address issues related to parenting stress and parent psychopathology.

Exploratory Question 5

To further investigate parenting stress and parent psychological functioning, the relationships between these variables and parent reported child outcome measures at both pre and post treatment were explored. Several correlations were of moderate size, but due to small sample size, the correlations were nonsignificant. In particular, positive relationships were found between parenting stress and parent psychological functioning for all combinations of time points. Of interest for the parent psychological functioning variable, positive relationships were found between parent psychological functioning at pre treatment and children's hyperactivity at pre and post treatment. Similar positive relationships were found between children's hyperactivity at both time points and parent psychological functioning post treatment. A strong positive connection also existed at post treatment between children's disruptive behaviors and parents' psychological functioning.

In terms of interesting nonsignificant relationships between the parenting stress variable and children's outcome variables, parenting stress at pre treatment was positively linked to children's disruptive behaviors at pre treatment and children's aggressive and disruptive behaviors at post treatment. Pretreatment parenting stress was also negatively related to social skills at post treatment. Parenting stress at post treatment was positively

associated with children's aggression, hyperactivity, and disruptive behaviors, as well as negatively correlated to social skills at pre treatment. Additionally, at post treatment, parenting stress was positively related to children's hyperactivity and negatively related to social skills. In terms of significant findings for the current study, high levels of parenting stress at intake were positively related to high levels of children's aggression at intake and high levels of hyperactivity at both intake and completion of services. Further, levels of parenting stress at intake were negatively related to levels of children's prosocial behaviors at intake. Finally, levels of parenting stress at the completion of services were positively related to levels of children's disruptive behaviors at post treatment.

Both the significant findings and the nonsignificant patterns are consistent with previous literature showing that parenting stress and psychopathology have been linked to more disruptive externalizing behaviors in children (Prevatt, 2003). Additionally, Kazdin and Wassel (2000a, 2000b) indicate that greater parenting stress may moderate less therapeutic change in children. Specifically, higher levels of parent stress at pre treatment predicted children's higher levels of antisocial behavior after therapy. Knowing that parenting stress moderates children's behavior and treatment outcome, credence is lent to target parenting stress as an important aspect of SST/PT interventions (Kazdin & Whitely, 2003). It is important to note that the pattern of correlations demonstrated in the current study is consistent with theories of the coercive cycle in parent-child relationships. The activating direction for the relationships found in the current study is unknown and unclear, but it is likely that the ongoing association is cyclical in nature. For example, a child's disruptive behaviors are likely to increase parent stress as the

parent attempts to decrease the child's acting out. Likewise, a child may respond to parent stress by increased attention-seeking behaviors. Overall, the findings in the current study suggest an important link between parent psychological functioning, parenting stress, and therapy outcomes for children. By further exploring such associations in future studies, researchers may be able to hone treatment components to address parent psychological needs as well as children's behavior problems, which in combination could ultimately disrupt negative parent-child relations and improve families' responsiveness to interventions.

Methodological Considerations and Future

Research Directions

Interpreting findings from the current study must be done with the following considerations in mind. Most obviously, the current study is limited by its small sample size. This not only hinders the detection of significant findings, but also greatly decreases the generalizability of the few significant findings. Although the initial design of the study included a waitlist control group to determine the effects of time versus treatment, the small sample size did not allow for such a comparison group. Thus, the study is limited in what can be concluded as an effect of treatment compared to spontaneous reduction in symptoms due to the passage of time.

Qualitatively, concerns for therapist integrity to treatment arose. Although the study incorporated training seminars, individual supervision, and group supervision for therapists involved in the interventions, the study did not include a random sampling of video-taped sessions to conduct integrity checks. Informally and anecdotally, a review of

taped sessions indicated that therapists varied in their reinforcement schedule of identifying children's disruptive behaviors, an important aspect of labeling children's misbehavior and attaching a consequence to it. Without this redirection, some participants maintained a consistently high frequency of disruptive behavior. This ultimately may have affected results for the behavioral coding analyses as it appeared that therapists were less likely to intervene with redirection as the sessions progressed.

One of the most striking implications of the current study was the apparent barriers to treatment in the targeted rural community. Although extensive attempts were made to recruit participants and services were offered for a nominal fee, the anticipated number of children did not participate. Additionally, for those who did initiate services, attaining completed assessment measures pre and post treatment proved difficult. Knowing that this particular community was mostly underserved in terms of mental health services, conducting a needs assessment to determine the perceived resources and openness to seeking psychological services may have been advantageous. Forehand et al. (2000) impart the necessity of ascertaining perceived community risks (e.g., gangs, drugs, dirty, and crowded) and community resources (e.g., library, police station, outdoor parks, and health center). It is emphasized that these perceptions are most informative as "it is not the community per se but rather the risks and resources operating within a community that are associated with child psychosocial adjustment" (Forehand et al. 2000, p. 410). Other researchers (Bjorklund & Pippard, 1999) emphasize the likelihood that what constitutes as a resource within a rural community may need to be flexible as some avenues for service delivery may be informal. Hence, knowing the perceived mental health resources within the targeted community for the current study may have aided in

development and implementation of the interventions. For example, if a needs assessment had been conducted and the community had not identified the school as a likely entity to provide mental health services, the interventions could have been implemented in a more preferable setting.

Another possible barrier for families to become involved in the current interventions may have been the cost. Elliot and Larson (2004) indicate that cost of treatment, including cost of travel and possible missed work for the parents, is a common barrier prohibiting individuals in rural communities from receiving services. Even though the cost for this study's groups was intentionally established to be low enough to allow access to the groups, and yet possess a monetary value that would likely motivate families to remain engaged due to their financial investment, the amount still may have been unaffordable in a rural community where there are large numbers of families categorized as low SES (Fish & Stifter, 1999). Unfortunately, mental health service implementation can be costly, especially in remote areas. Without supplemental financial resources such as grant funding, specialized services in the rural community may not be economically feasible (Bjorklund & Pippard, 1999).

It has been noted in the literature that the traditional values and attitudes usually present in rural communities can serve to reinforce stigma regarding mental health services (Kelleher et al., 1992; McDonald et al., 2005). Linfoot et al. (1999) report that parents in rural areas are most likely to seek informal contacts as a source of support for their child's problem behaviors. Further, parents in rural areas are more inclined than parents in urban areas to use educational and self help resources to gain advice as to how to manage their children. Even if some children are open to receiving services, a lack of

parent support for the child to initiate services may exist (Elliot & Larson, 2004). A further concern for both parents and children alike in rural communities is the issue of confidentiality (Bjorklund & Pippard, 1999). In small towns "where everyone knows everyone" and mental health services are provided at highly identifiable locations, it is difficult for clients to maintain their anonymity to the general public.

As a means to introducing mental health services in rural communities, Barbopoulos and Clark (2003) suggest using a gradual approach (e.g., pilot programs) to allow for the growth of community support, without creating resistance from the community or those in authority who might be threatened by change. When initially implementing intervention programs, the use of "natural helpers" (identified persons in the rural community who are known to community members as a social support) may be useful in decreasing stigma and increasing trust associated with the psychological provider and/or program (Bergstrom, 1982). As an additional method to promote awareness and understanding of the new mental health services being implemented, introductions to the community through educational groups may be beneficial (Fox, Blank, Rovnyak, & Barnett, 2001). Regarding the current study, the primary researcher had worked in the rural school system providing mental health services for one year prior to introducing intervention program. However, it is likely that it may take several years to gradually establish an intervention program within the rural community. Although a natural helper had been identified through the school to assist in the implementation of the services, the relationship of her connection and support of the program may not have been apparent to participants.

Other considerations for barriers to treatment in rural communities are the investment of time and effort required of the participants outside of the intervention setting, the nature of family relationships, the extent of social support available to the family, and the expectations and attitudes about interventions held by the family (Prinz & Miller, 1991). The Barriers to Treatment Participation Scale (BTPS; Kazdin, Holland, & Crowley, 1997; Kazdin, Holland, Crowley, et al. 1997) is an interview designed to independently assess participants' and therapists' views of the client's barriers to treatment. The measure is used to evaluate four areas related to treatment participation: stressors and obstacles that compete with coming to treatment, treatment demands and issues, perceived relevance to treatment, and relationship with therapist. (Kazdin & Wassel, 1999, 2000). In studies using this assessment tool, results have shown that the more barriers to treatment experienced by the parents, the less likely they are to consider the treatment methods as acceptable (Kazdin, 2000), which ultimately influences the therapeutic progress for the child (Kazdin & Wassell, 1999, 2000).

A final area to consider in terms of improving the current study may be to examine the clinical significance of the interventions. Two suggested ways for conducting such an analysis are through the use of qualitative assessments for consumer satisfaction (Hugdahl & Ost, 1981; Kazdin, 1999) and statistically determining how individuals receiving the intervention are comparable to "normal" individuals (Kendall, Marrs-Garcia, Nath, & Sheldrick, 1999). Using consumer satisfaction questionnaires can provide the researcher with qualitative insights regarding how participants perceive the effects of the intervention. For example, even though two participants may experience the same quantitative decrease in symptoms, their qualitative experience of this change may

be very different (Kazdin, 1999). Such questionnaires may also impart useful suggestions for improving the intervention that is otherwise not represented in the statistical data. On the other hand, additional statistical analyses specific to the clinical significance of the interventions may prove useful. Various approaches for clinical significance are offered in the literature (Jacobson & Truax, 1991; Kazdin, 1999; Kendall, 1999; Kendall et al., 1999). One popular method is the reliable change index (RCI), which measures the statistical reliability of the degree of improvement for a participant (Jacobson, Roberts, Berns, & McGlinchey, 1999). In light of the current study, this approach to examining outcomes of treatment could be a beneficial tool in determining the overall effects of SST and PT interventions in future research.

Conclusions

The purpose of the present study was to investigate the effectiveness of school-based SST and SST/PT groups in a rural community. Although such interventions have demonstrated effectiveness in previous studies for more urban populations, the small number of participants in the current study dramatically limited the ability to make conclusive statements regarding the usefulness of such interventions within the rural community. Despite this limitation, promising findings emerged in that moderate effect sizes were found for several main effects of time and intervention, as well as some intervention by time interactions. In particular, parents reported that children's prosocial skills increased pre to post treatment. To further support this finding, nonsignificant results with medium effect sizes were found for child report and in-session behavior observations that indicated a pattern of increased prosocial skills. Firm conclusions

regarding if participants receiving the SST/PT intervention would demonstrate greater improvements than participants receiving the SST-only intervention or if the particular interventions used in this study effectively decreased aggressive and disruptive behaviors over time could not be determined. Given the study's limitations, it is premature at this time to establish clinical recommendations as to the preferred components for treatment. However, an apparent strength of the study is demonstrated in its innovative implementation of SST and PT interventions in a highly underserved rural population with the use of multi-informant and multimodal assessments. Future studies in rural communities will need a larger sample size, intervention integrity checks, and a control group to establish more conclusive results. Additionally, tests of clinical significance may be appropriate in regard to continued research in the area.

Importantly, the current study provides implications regarding attrition and barriers to treatment within rural communities. Specifically, younger parents and children with a stepparent in the home were less likely to complete assessment measures. Several barriers to treatment in rural communities, including stigma related to mental health services, risks and resources of the community, and gradual introduction of services to the rural community are considered. Moreover, notable relationships between psychological functioning and stress for parents and children's therapeutic change were identified and should be explored in future research.

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APPENDIX A

DEMOGRAPHIC FORM

Date: _____

CHILD /ADOLESCENT INTAKE FORM

Child's Name: _____ Name of Person Completing Form _____
Last First Middle Relationship to Child: _____
Who has Custody of the Child: _____

Address: _____
Street or Post Office Box City State County Zip

Phone: _____ Birthdate: _____ Age _____ Gender _____ Male _____ Female
Home Parent's Work

Ethnicity: _____ Caucasian _____ African American _____ Native American _____ Asian _____ Hispanic _____ Pacific Islander Other _____

Biological Mother: _____ Age: _____ Biological Father: _____ Age _____

Father's Occupation: _____ Yearly Income: _____

Mother's Occupation: _____ Yearly Income: _____

Stepparent in the home:

Name: _____ Age _____ Occupation/Employer: _____
Yearly Income: _____ Age of child when stepparent entered family _____

Total Household Income for the past year: _____ *For Office Use* Assessed Fee: _____

Insurance Coverage _____ Yes _____ No If Yes: _____
Company Address Policy Number

OSU Status: Are you or your spouse a student, faculty, or staff member? _____ If "yes", please indicate which: _____

Current Residence: Please list the names, gender, ages, and relation of all individuals living at your current residence

| Name | Gender | Age | Relation |
|------|--------|-----|----------|
| | | | |
| | | | |
| | | | |
| | | | |

IF CHILD IS IN FOSTER HOME COMPLETE FOLLOWING INFORMATION

Length of time in this placement _____ Total number of placements _____

CHILD'S MEDICAL & DEVELOPMENTAL HISTORY

Child's Physician: _____
Name Address City State Phone

Date of last physical exam _____ Has child had any physical or health problems? _____ If so, please explain:

HOSPITALIZATIONS:

| Hospital | Dates | Reason |
|----------|-------|--------|
| | | |
| | | |
| | | |

List All Medications within the last six months, both prescription and non-prescription

| Name | Quantity/Frequency | Reason Taken | Start Date to Finish Date |
|------|--------------------|--------------|---------------------------|
| | | | |
| | | | |
| | | | |

PREGNANCY AND DELIVERY

| | |
|-------------------------------------|--|
| Drugs used in pregnancy | |
| Problems during pregnancy | |
| Problems during labor/delivery | |
| Drugs used during labor/delivery | |
| Birth Weight | |
| Child's physical condition at birth | |

DEVELOPMENTAL MILESTONES: age at which your child

| | |
|-------------------------|--|
| sat alone | |
| crawled | |
| stood alone | |
| walked alone | |
| said single words | |
| said 2-3 word sentences | |

In case of emergency contact: _____
Name Address City State Phone Relation

FAMILY RELATIONS:

What kinds of discipline are used in your family? (check all that apply)
 spanking try to talk or reason with child deny privileges
 put by self (in corner, in own room, etc.) rules are set and enforced nothing works
 other (explain) _____

Have there been any family disruptions, or significant stressors (e.g., deaths, divorces), which might have affected your child?
If so, please explain and give dates _____

SCHOOL HISTORY

School _____
Name Address Phone

Present grade placement _____ Teacher _____

How many schools has child attended? _____ Did child attend kindergarten? _____ Preschool? _____

PREVIOUS TREATMENT:

Has your child previously been:
 In therapy/counseling Tested On medication for behavior problems
Name of therapist/agency/hospital _____ Dates: _____

Has your child ever been involved with legal authorities? _____ (describe) _____

Did you prepare your child for his/her visit to the PSC? describe) _____

Reason for seeking services? _____

APPENDIX B
BEHAVIORAL CODING
DEFINITIONS

Social Skills Group Behavior Coding Definitions

Coding Scheme:

- Code “I” for each occurrence of the behavior
- Code “I” and circle it for each occurrence that the group leader addresses (even if they label it as something else; code participations this way if prompted or praised by the therapist)
- If a behavior begins during one time interval, but crosses over into another time interval, only code the behavior as one occurrence and code it within the interval that the behavior is completed.

Interrupting

Any behavior that disrupts the flow of the group by drawing inappropriate attention to the individual child or preoccupies the individual child’s attention for greater than 30 seconds on something other than the topic at hand

Examples:

- Excessive fidgeting
 - e.g., playing with clothes or object, out of seat
 - Fidgeting that continues for more than 30 seconds
- Clowning around, laughing inappropriately
- Speaking out of turn
- Off-topic participations
- Saying “I don’t know,” “I forgot,” shrugging shoulders, etc. when called on by therapist

Not Respecting the Rights of Others

Any behavior that could hurt others’ feelings, violates another individual’s personal space, is noncompliant with authority, or causes harm to property

Examples:

- Making derogatory or sarcastic comments
- Touching others
- Destructive behavior
- Noncompliance with a therapist’s directive

Saying Nice Things

Any comment or behavior that positively reinforces another child’s prosocial behavior or participation

Examples:

- Encouraging others to do their best
- Complimenting
- Using manners (please, thank you, etc.)

Participating

Any behavior that is a relevant contribution to the specific topic of the group

Examples:

- Contributing a response to discussion
- Participating in a role-play or other activity (one point for each appropriate participation per round of activity)
- Asking questions for clarification
- Individual can be prompted by group leaders
 - If child does not have hand raised and therapist calls on child, OR
 - Therapist tells child that they will come back to them, or therapist tells child in advance to be ready to provide an answer in the near future

APPENDIX C

CONSENT & ASSENT FORMS

PARENT INFORMED CONSENT STATEMENT

Project Title: Evaluation of a School-Based Social Skills Program for Children with Peer Problems

Investigators: Christina M. Warner, M.S., Douglas J. Scambler, Ph.D.

Purpose: You and your child are being asked to take part in a research study of the effectiveness of a school-based social skills training intervention for children with peer relationship problems in which you and your child have already agreed to participate. You and your child are being asked to participate in this research study because we are interested in knowing how effective this program is at changing the behavior of school children with problems similar to those your child experiences.

Procedures: If you agree to participate in this study, you will be agreeing to allow us to use the information provided by you, your child, and your child's teacher as part of the **pre-, post-, and 3-month follow-up** intervention assessments for research purposes. If you agree to participate, we will make photocopies of the evaluation forms completed by the child's parent(s), the child, and the child's teacher. We will remove all identifying information (e.g., names, school) from the evaluation forms and we will assign a participant number. We will keep a list of names and associated participant numbers in order to match the **pre-, post-, and 3-month follow-up** intervention data. This list will be kept in a location separate from where the data with the numbers is stored. Once the assessment data has been matched, we will destroy the names-numbers list and no one will be able to identify your child's data.

If you agree to participate, we will also use systematic **video-taped** observation data collected as part of the social skills intervention as part of our research data. The systematic observation data is collected to monitor changes in the number of positive and negative behaviors (i.e., rules followed and rules violated) each child displays within each session as the group progresses. If you agree to participate, we will assign this data to your child's participant number and no one will be able to associate your child's systematic observation data with him or her.

After we have collected the data from the evaluation forms and from the systematic observations, we will then conduct statistical analyses to determine if the social skills group intervention had a significant impact on the behavior of all of the children in the group. The results of these statistical analyses may be discussed in journal articles or in presentations at scientific meetings; however, we will never use your name or your child's names when discussing the data.

This study is completely voluntary in nature. Agreeing or not agreeing to participate in the research project will not affect your child's eligibility for participating in the group. Children will receive the exact same treatment regardless of their participation in the

research project. Participation in the research project only allows us to evaluate statistically the information collected as part of the social skills intervention program.

If you agree to participate in the research, you will be asked not to begin any new therapies during the time your child is enrolled in active treatment in the study. If you do begin another therapy that specifically involves social skills, your child will no longer be eligible to participate in the research study. **Although you would not be part of the research study, your child could still attend the social skills groups.** If you agree to participate in the research study and later decide to enroll your child in additional treatment, please notify us so that we can remove your child's data from the research study.

Discomforts and Risks: Participation in the research program involves no additional risk beyond the minimal risks associated with participating in the social skills intervention.

Benefits: Research suggests that social skills and problem solving interventions decrease inappropriate behaviors and provide children with the skills necessary to interact positively with parents, teachers, and peers. This study may increase parents' awareness of ways in which they may facilitate their child's social development and maintain improvements in their child's social behavior. Additionally, information regarding the effectiveness of interventions benefits society in terms of resource allocation and the refinement of interventions. However, there is no guarantee that you or your child will receive any benefit from participating in this research study.

Costs: There is no cost associated with the current research study.

Study withdrawal: You may choose not to enter the study or withdraw from the study at any time without penalty. The investigators may withdraw your child from the study if you begin another treatment focused on social skills while your child is enrolled. **Although you would not be part of the research study, your child could still attend the social skills groups.**

Invitation for questions: You will receive a copy of this consent form. Please ask questions at any time about this research project or consent form. You may direct your questions to Dr. Douglas J. Scambler at (405) 744-6027. If you have questions regarding your rights as a research subject, please contact Carol Olson, Institutional Review Board, 415 Whitehurst, OSU, (405) 744-5700.

Confidentiality: All information about you and your child will be kept confidential and anonymous and will not be released. Questionnaires will have code numbers, rather than names on them. All information will be kept in a locked file cabinet in the lab that is only used by the researchers, the group leaders, and the research assistants. The information will be kept for 5 years after the results are published. The results of this study may be presented at meetings or in publications; however, your family's identity will not be disclosed in those presentations.

If information is revealed concerning child abuse or neglect, or potentially dangerous future behavior to others where the patient has told a health care provider a serious threat of imminent physical violence against a specific person or persons, it is required by law that this be reported to the proper authorities. In addition, should any information contained in this study be the subject of a court order or lawful subpoena, Oklahoma State University might not be able to avoid compliance with the order or subpoena.

Authorization: I have been fully informed about the procedures listed here. I am aware of what my child and I will be asked to do and of the benefits of my participation. I also understand the following statement:

I affirm that I am 18 years of age or older.

I understand that I may contact any of the researchers at the following addresses and phone numbers, if I want to discuss my or my child's participation in the study and/or request information about the results of the study: Christina M. Warner, M.S. and Douglas J. Scambler, Ph.D., 215 North Murray Hall, Dept. of Psychology, Oklahoma State University, Stillwater, OK 74078-0250, (405) 744-6027 or Larry L. Mullins, Ph.D., Psychological Services Center, 118 North Murray Hall, Oklahoma State University, Stillwater, OK 74078-0250, (405) 744-5975. I may also contact Carol Olson, Institutional Review Board, 415 Whitehurst, OSU, (405) 744-5700. I have read and fully understand this consent form. I sign it freely and voluntarily. A copy of this form will be given to me. I hereby give permission for my child's and my participation in this study.

Signature of Parent/Legal Guardian

Date

I certify that I have personally explained this document and answered any questions that the participant had before requesting that the participant sign it.

Signature of Researcher

Date

TEACHER INFORMED CONSENT STATEMENT

Project Title: Evaluation of a School-Based Social Skills Program for Children with Peer Problems

Investigators: Christina M. Warner, M.S., Douglas J. Scambler, Ph.D.

Purpose: You are being asked to provide information on a student in your class that is taking part in a research study of the effectiveness of a school-based social skills training intervention for children with peer relationship problems. You are being asked to participate in this research study because we are interested in knowing how effective this program is at changing the behavior of school children with problems similar to those your child experiences.

Procedures: The student's parent has signed a release form for you to provide us with the requested information. If you agree to participate in this study, you will be agreeing to allow us to use the information provided by you as part of the **pre-, post-, and 3-month follow-up** intervention assessments for research purposes. If you agree to participate, we will make photocopies of the evaluation forms. We will then remove all identifying information (e.g., names, school) from the evaluation forms and we will assign a participant number. We will keep a list of names and associated participant numbers in order to match the **pre-, post-, and 3-month follow-up** intervention data. This list will be kept in a location separate from where the data with the numbers is stored. Once the assessment data has been matched, we will destroy the names-numbers list and no one will be able to identify the student's data.

After we have collected the data from the evaluation forms, we will then conduct statistical analyses to determine if the social skills group intervention had a significant impact on the behavior of all of the children in the group. The results of these statistical analyses may be discussed in journal articles or in presentations at scientific meetings; however, we will never use your name when discussing the data. This study is completely voluntary in nature.

Discomforts and Risks: Participation in the research program involves no risk.

Benefits: Research suggests that social skills and problem solving interventions decrease inappropriate behaviors and provide children with the skills necessary to interact positively with parents, teachers, and peers. This study may increase parents' awareness of ways in which they may facilitate their child's social development and maintain improvements in their child's social behavior. Additionally, information regarding the effectiveness of interventions benefits society in terms of resource allocation and the refinement of interventions. However, there is no guarantee that the participating student will receive any benefit from participating in this research study.

Costs: There is no cost associated with the current research study.

Study withdrawal: You may choose not to enter the study or withdraw from the study at any time without penalty.

Invitation for questions: You will receive a copy of this consent form. Please ask questions at any time about this research project or consent form. You may direct your questions to Dr. Douglas J. Scambler at (405) 744-6027. If you have questions regarding your rights as a research subject, please contact Carol Olson, Institutional Review Board, 415 Whitehurst, OSU, (405) 744-5700.

Confidentiality: All information obtained from you will be kept confidential and anonymous and will not be released. Questionnaires will have code numbers, rather than names on them. All information will be kept in a locked file cabinet in the lab that is only used by the researchers, the group leaders, and the research assistants. The information will be kept for 5 years after the results are published. The results of this study may be presented at meetings or in publications; however, your identity will not be disclosed in those presentations.

If information is revealed concerning child abuse or neglect, or potentially dangerous future behavior to others where the patient has told a health care provider a serious threat of imminent physical violence against a specific person or persons, it is required by law that this be reported to the proper authorities. In addition, should any information contained in this study be the subject of a court order or lawful subpoena, Oklahoma State University might not be able to avoid compliance with the order or subpoena.

Authorization: I have been fully informed about the procedures listed here. I am aware of what I will be asked to do and of the benefits of my participation. I also understand the following statement:

I affirm that I am 18 years of age or older.

I understand that I may contact any of the researchers at the following addresses and phone numbers, if I want to discuss my participation in the study and/or request information about the results of the study: Christina M. Warner, M.S., and Douglas J. Scambler, Ph.D., 215 North Murray Hall, Dept. of Psychology, Oklahoma State University, Stillwater, OK 74078-0250, (405) 744-6027 or Larry L. Mullins, Ph.D., Psychological Services Center, 118 North Murray Hall, Oklahoma State University, Stillwater, OK 74078-0250, (405) 744-5975. I may also contact Carol Olson, Institutional Review Board, 415 Whitehurst, OSU, (405) 744-5700. I have read and fully understand this consent form. I sign it freely and voluntarily. A copy of this form will be given to me. I hereby give permission for my participation in this study.

Signature of Teacher

Date

I certify that I have personally explained this document and answered any questions that the participant had before requesting that the participant sign it.

Signature of Researcher

Date

CHILD ASSENT TO PARTICIPATE IN RESEARCH

You and your parents have agreed to your participation in our social skills program. One of the things that you, your parent(s), and your teacher will do as part of this group is answer questions about your behaviors and emotions. These questions help us understand how you think, feel, and behave. You, your parent(s), and your teacher will answer these questions before the group starts and at the very end of the group when we are finished. Another thing that we will do as part of the group is to keep track of how many times you follow the rules during the group like saying nice things to other people or participating in the group. We will also count the number of times that you break the rules like interrupting or teasing others.

We would like to use the information that we collect about you from the questions and from the group in a research project. This research project will help us understand if our program is helpful to school children. If you say it is okay for us to use the information that we collect about you in our research project, we will not put your name on the information so no one will know that the information is about you. We do not think that anything bad will happen to you if you say it is okay for us to use your information. You can say that it is not okay for us to use the information about you and you can still participate in our group.

Do you have any questions?

_____ Yes, it is okay for you to use the information about me.

_____ No, it is not okay for you to use the information about me.

Print your name

Today's date

Write your name in cursive

Researcher's name

APPENDIX D

MEANS TABLES

Table 15

Means and Standard Deviations for Parent Report

| | Pre | | Post | | <i>n</i> |
|--------|----------|-----------|----------|-----------|----------|
| | <i>M</i> | <i>SD</i> | <i>M</i> | <i>SD</i> | |
| AGG | | | | | |
| SST | 52.67 | 12.10 | 35.67 | 27.65 | 3 |
| SST/PT | 52.86 | 16.49 | 48.86 | 11.28 | 7 |
| Total | 52.80 | 14.62 | 44.90 | 17.18 | 10 |
| HYP | | | | | |
| SST | 60.00 | 7.00 | 55.33 | 5.69 | 3 |
| SST/PT | 60.57 | 16.22 | 52.57 | 7.76 | 7 |
| Total | 60.40 | 13.65 | 53.40 | 7.01 | 10 |
| ECBI | | | | | |
| SST | 58.00 | 4.36 | 51.67 | 6.51 | 3 |
| SST/PT | 48.14 | 21.89 | 49.00 | 5.78 | 7 |
| Total | 51.10 | 18.61 | 49.80 | 5.78 | 10 |
| SS | | | | | |
| SST | 71.00 | 2.83 | 88.00 | 21.21 | 2 |
| SST/PT | 90.00 | 19.73 | 95.14 | 20.33 | 7 |
| Total | 85.78 | 19.01 | 93.56 | 19.40 | 9 |
| PSI | | | | | |
| SST | 83.33 | 5.51 | 79.00 | 16.64 | 3 |
| SST | 77.14 | 21.00 | 64.00 | 14.79 | 7 |
| SST/PT | 79.00 | 17.60 | 68.50 | 16.12 | 10 |
| BSI | | | | | |
| SST | 53.00 | 8.49 | 48.00 | 1.41 | 2 |
| SST/PT | 52.14 | 12.24 | 55.14 | 10.22 | 7 |
| Total | 52.33 | 12.70 | 53.56 | 9.41 | 9 |

Note: Based on standard scores

Table 16

Means and Standard Deviations for Teacher Report

| | Pre | | Post | | <i>n</i> |
|---------|----------|-----------|----------|-----------|----------|
| | <i>M</i> | <i>SD</i> | <i>M</i> | <i>SD</i> | |
| AGG | | | | | |
| SST | 50.00 | 8.19 | 45.33 | 5.86 | 3 |
| SST/PT | 55.20 | 10.31 | 56.20 | 14.89 | 5 |
| Total | 53.25 | 9.33 | 52.13 | 12.97 | 8 |
| HYP | | | | | |
| SST | 45.67 | 4.04 | 43.67 | 2.52 | 3 |
| SST/PT | 57.60 | 15.57 | 59.00 | 15.67 | 5 |
| Total | 53.13 | 13.47 | 53.25 | 14.32 | 8 |
| SESBI-R | | | | | |
| SST | 48.67 | 8.08 | 43.33 | 2.08 | 3 |
| SST/PT | 52.80 | 10.06 | 52.80 | 12.17 | 5 |
| Total | 51.25 | 9.00 | 49.25 | 10.49 | 8 |
| SS | | | | | |
| SST | 90.67 | 4.04 | 90.33 | 15.04 | 3 |
| SST/PT | 96.00 | 12.31 | 79.00 | 41.36 | 5 |
| Total | 94.00 | 9.94 | 83.25 | 32.81 | 8 |

Note: Based on standard scores.

Table 17

Means and Standard Deviations for Child Report and Behavioral Observations

| | Pre | | Post | | <i>n</i> |
|------------------------|----------|-----------|----------|-----------|----------|
| | <i>M</i> | <i>SD</i> | <i>M</i> | <i>SD</i> | |
| SS* | | | | | |
| SST | 98.25 | 26.79 | 115.50 | 27.09 | 4 |
| SST/PT | 104.00 | 12.34 | 112.43 | 14.25 | 7 |
| Total | 101.91 | 17.75 | 113.55 | 18.56 | 11 |
| Disruptive Behaviors** | | | | | |
| SST | 18.25 | 25.25 | 25.50 | 25.83 | 4 |
| SST/PT | 10.63 | 8.86 | 17.75 | 19.99 | 8 |
| Total | 13.17 | 15.43 | 20.33 | 21.23 | 12 |
| Prosocial Behaviors** | | | | | |
| SST | 27.00 | 12.54 | 35.75 | 14.57 | 4 |
| SST/PT | 26.89 | 14.16 | 41.89 | 14.06 | 9 |
| Total | 26.92 | 13.16 | 40.00 | 13.91 | 13 |

*Based on standard scores; **Based on frequencies of observed behaviors per session.

APPENDIX E

INSTITUTIONAL REVIEW BOARD

APPROVAL FORMS

Oklahoma State University
Institutional Review Board

Protocol Expires: 2/12/2005

Date: Friday, February 13, 2004

IRB Application No AS0461

Proposal Title: Evaluation of a School-Based Social Skills Program for Children with Peer Problems

Principal
Investigator(s):

Christina Warner
215 N. Murray
Stillwater, OK 74078

Douglas Scambler
215 N Murray
Stillwater, OK 74078

Melanie Page
215 N. Murray
Stillwater, OK 74078

Reviewed and
Processed as: Expedited (Spec Pop)

Approval Status Recommended by Reviewer(s): Approved

Dear PI :

Your IRB application referenced above has been approved for one calendar year. Please make note of the expiration date indicated above. It is the judgment of the reviewers that the rights and welfare of individuals who may be asked to participate in this study will be respected, and that the research will be conducted in a manner consistent with the IRB requirements as outlined in section 45 CFR 46.

As Principal Investigator, it is your responsibility to do the following:

1. Conduct this study exactly as it has been approved. Any modifications to the research protocol must be submitted with the appropriate signatures for IRB approval.
2. Submit a request for continuation if the study extends beyond the approval period of one calendar year. This continuation must receive IRB review and approval before the research can continue.
3. Report any adverse events to the IRB Chair promptly. Adverse events are those which are unanticipated and impact the subjects during the course of this research; and
4. Notify the IRB office in writing when your research project is complete.

Please note that approved projects are subject to monitoring by the IRB. If you have questions about the IRB procedures or need any assistance from the Board, please contact me in 415 Whitehurst (phone: 405-744-5700, colson@okstate.edu).

Sincerely,



Carol Olson, Chair
Institutional Review Board

Oklahoma State University Institutional Review Board

Date: Thursday, February 17, 2005 Protocol Expires: 2/16/2006
IRB Application No: AS0461
Proposal Title: Evaluation of a School-Based Social Skills Program for Children with Peer Problems

Reviewed and Processed as: **Modification/Continuation**

Status Recommended by Reviewer(s) **Approved**

Principal Investigator(s) :

Christina Warner
215 N. Murray
Stillwater, OK 74078

Douglas Scambler
215N Murray
Stillwater, OK 74078

Melanie Page
215 N. Murray
Stillwater, OK 74078

Approvals are valid for one calendar year, after which time a request for continuation must be submitted. Any modifications to the research project approved by the IRB must be submitted for approval with the advisor's signature. The IRB office MUST be notified in writing when a project is complete. Approved projects are subject to monitoring by the IRB.

- The final versions of any printed recruitment, consent and assent documents bearing the IRB approval stamp are attached to this letter. These are the versions that must be used during the study.

Signature :



Sue C. Jacobs, Chair, Institutional Review Board

Thursday, February 17, 2005
Date

VITA

CHRISTINA MARIE WARNER

Candidate for the Degree of

Doctor of Philosophy

Thesis: EXAMINING THE EFFECTIVENESS OF SOCIAL SKILLS
GROUP AND PARENTING SKILLS GROUPS IN THE
RURAL SCHOOLS

Major Field: Clinical Psychology

Biographical:

Personal: Born in Nevada, Missouri, on November 10, 1977, the daughter of
Larry Warner and Marilyn Swarnes.

Education: Graduated from Nevada High School, Nevada, Missouri in May of
1996; received Bachelor of Arts degree in Psychology with a Minor in
Biomedical Science from Southwest Missouri State University in December
1999; received Masters of Science degree in Psychology at Oklahoma State
University in December 2003. Completed the requirements for the Doctor of
Philosophy degree with a major in Clinical Psychology at Oklahoma State
University in December 2006.

Experience: Research assistant for Dr. Melanie C. Page, 2000 to present;
Evaluation consultant to Dr. Sharon Mullins, director of the Oklahoma
Infants Assistance Program, 2001 to 2005; Clinical practicum student for
Dr. Robin Gurwitch, director of the A Better Chance program at the
University of Oklahoma Health Sciences Center, 2003-2004; Predoctoral
Psychology Intern for Drs. Laura Murphy, Melissa Hoffman, and Janet
Todd, clinical supervisors for the University of Tennessee Professional
Psychology Internship Consortium, Memphis, Tennessee.

Professional Memberships: American Psychological Association, Association for
Behavior and Cognitive Therapy, Psi Chi National Honorary, Psychology
Graduate Student Association.

Name: Christina Marie Warner

Date of Degree: December, 2006

Institution: Oklahoma State University

Location: Stillwater, Oklahoma

Title of Study: EXAMINING THE EFFECTIVENESS OF SOCIAL SKILLS
TRAINING AND PARENTING SKILLS TRAINING IN THE RURAL
SCHOOLS

Pages in Study: 134

Candidate for the Degree of Doctor of Philosophy

Major Field: Clinical Psychology

Scope and Method of Study: The purpose of the present study was to examine the effectiveness of school-based social skills training (SST) and parenting skills training (PT) groups in a rural community. Further, the study examined the relationship of parenting stress and parent psychological functioning to child outcome variables. Participants for the study were 14 students attending regular or special education classes in the third or fourth grade in a rural Oklahoma school district, their parents, and their teachers. Dependent variables included the BASC, ECBI, SESBI-R, SSRS, BSI, PSI, and observational data. Participants were randomly assigned to receive either SST only or SST/PT and completed assessment measures pre and post intervention. It was hypothesized that children in the SST/PT condition would demonstrate more behavioral improvements across time as compared to the SST-only children.

Findings and Conclusions: Results indicated that families with younger parent participants and children who had a stepparent in the home were less likely to complete the study than families with older parents and children living with one or both of their biological parents. Although analyses for the main hypotheses were generally not statistically significant, moderate effect sizes were found for several main effects of time and intervention, as well as some intervention by time interactions. Notably, the increase in parent reported prosocial skills pre to post intervention was significant. Also, parenting stress was found to be correlated with parent reports of child behavior on several measures. Strengths of the study included a clinical intervention in a highly underserved rural community and use of multi-informant, multi-modal assessments. Limitations of the current study, barriers to treatment in rural communities, and directions for future research are also considered.

ADVISER'S APPROVAL: Melanie C. Page
