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Review of Social Competency Training for Pre-School and Elementary School Age Students at Risk for Developing or Classified with Emotional/Behavioral Disorders

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REVIEW OF SOCIAL COMPETENCY TRAINING FOR PRE-SCHOOL AND ELEMENTARY SCHOOL AGE STUDENTS AT RISK FOR DEVELOPING OR CLASSIFIED WITH EMOTIONAL/BEHAVIORAL DISORDERS

by

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Abstract

Social competency training is a common intervention for students at risk for developing or classified with emotional/behavioral disorders. However, a review of research indicated that it is only mildly effective in producing significant outcomes for these students. A number of factors have been identified as possibly impacting the success of social competency training, including: the intervention setting, the timing of intervention, characteristics of participants, characteristics of interventions and the outcome measurements used. A review of literature was conducted to evaluate these factors. Findings of the review indicate that there are not significant differences between interventions conducted in regular education and resource or small group settings. The most compelling results were from interventions based in self contained or specialized settings; however, there were only a small number of studies in this setting. Timing of intervention does not appear to be a significant factor. In the studies reviewed, outcomes were slightly more positive for pre-school and kindergarten age children and older elementary school age students compared to first and second grade age groups. In terms of participant characteristics, students with the most severe behaviors and students with externalizing behaviors were more positively impacted than students with mild or moderate behaviors or internalizing behaviors. Characteristics of the most successful interventions were those with individualization procedures, treatment matched to symptoms, programs using the First Step to Success, the use of emotional competency training, interventions using peers as trainers or role models and the use of specific behavioral strategies, such as group contingencies. The outcome measurements with the most compelling results were direct observations, followed by socio-metrics and self reports. Academic assessments and rating scales had the least significant outcomes. Limitations include comparing studies with single subject designs to studies using control group designs and drawing conclusions based on small numbers of studies with specific characteristics.

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Introduction

Emotional and Behavioral Disorders

Pre-school and elementary school age students with Emotional and Behavioral Disorders (EBD) present one of the greatest challenges to educators. The Individuals with Disabilities Education Act (IDEA) includes Emotional Disturbance, or EBD as some states define it, as a disability for which educators are required by law to provide special education services. EBD is a complex and broadly defined disorder. Students classified with EBD may display attention deficits, hyperactivity, impulsivity, poor social skills, academic problems, aggression, anxiety, social withdrawal, and/or depression (Messe, 1996). The definition of Emotional Disturbance (ED) as outlined by IDEA (1997) includes learning problems, poor relationships with peers and teachers, inappropriate behaviors and feelings, chronic unhappiness or depression, and/ or psychosomatic complaints that interfere with educational performance in the school setting (34 CFR 300.7(c)(4)).

Children with Emotional/Behavioral Disorders have a higher likelihood of experiencing negative outcomes both in and out of school. In their research on children and youth with emotional and behavioral disorders, Quinn and McDougal (1998) summarize that students with EBD have increased negative educational, employment and social outcomes. Educational outcomes include low academic success due to factors such as co-morbid learning disabilities, exclusion from mainstream opportunities, higher absenteeism and a 50% drop out rate. Post school outcomes are less positive as well, with lower percentages of students with EBD going on to post-secondary education and lower employment rates based on longitudinal data. Social adjustment is another area of concern with individuals with EBD. There appears to be a

reciprocal relationship between academic and social difficulties in the school environment. Social problems are also seen in the community, with higher percentages of individuals identified as having EBD experiencing substance abuse problems, arrests and incarceration.

Given the negative outcomes associated with EBD, it is important to identify and treat emotional disorders early. Emotional or behavioral disorders are often not formally identified until children have displayed symptoms for a significant period of time. Many schools take a reactive rather than a proactive approach, which is disadvantageous to the students. Emotional and behavioral disorders tend to progress in severity, and the occurrence of secondary disorders and negative outcomes are more likely the longer intervention is delayed (Forness et al., 2000). Like other disabling conditions, emotional and behavioral disorders respond best to early intervention (Kamps & Tankersly, 1996).

Research has been conducted with students classified as having emotional and behavioral disorders as well as those students "at risk" of developing EBD. Students considered "at risk" display one or more of the symptoms associated with emotional and behavioral disorders at or above a clinical or borderline clinical level, but are not formally classified with EBD. They are also referred to in the research as aggressive, disruptive, and socially rejected. Both students classified as EBD and students who are at risk of developing EBD have high rates of negative social and educational outcomes.

Prevalence rates

Prevalence rates of mental health disorders among children have been reported in a number of studies over the past few decades. Roberts, Attkisson, and Rosenblatt (1998) calculated an average rate by analyzing 52 studies reporting prevalence rates in over 20 countries.

They determined that the median prevalence rates of mental health disorders in children was 8% in preschoolers and 12 % in children ages 6 to 12. The study revealed that higher estimates (around 20%) were found when scales using DSM-III-R criteria only, rather than standardized checklists, were used to classify children. Some prevalence estimates were lower, less than 10%, when criteria included impairment in functioning. These rates are supported by statistics from the Institute of Medicine (1990) that between 12% and 22% of American children suffer from some form of mental health disorder.

Of those children meeting diagnostic criteria for a mental health disorder, a portion are impaired academically and/or socially by their disability causing them to require specialized instruction to be successful in school. An estimated 2-3% of the student population, therefore, are likely to meet classification criteria for EBD, however, less than 1% are enrolled in special education under this category (Lopez & Forness, 1996). Dwyer (1991) reports that 3 million children may qualify as EBD, although only approximately 13 percent of potentially qualifying children are formally classified as such.

There are a variety of possible reasons for the disproportionate identification of emotional and behavioral disorders. One reason is that special education services and interventions for children with emotional or behavioral disorders are fairly new and have undergone extensive refinement in the past two decades with accompanying changes in approaches and procedures (Merrell, 2002). Inconsistencies are therefore likely to be encountered in the referral and classification process. Second, the overwhelming emphasis of many school systems remains academic in nature, with less importance given to social and emotional skills. Behavioral interference may be predominantly social rather than academic and thereby may not receive

needed attention. Third, these students are often classified under other categories, such as Learning Disabilities, due to differences in acceptability and ease of qualification (Lopez & Forness, 1996).

Additional reasons for the lack of identification of students with social and emotional problems have been researched by Kauffman (1999). The author concludes that a reactive rather than a proactive approach is often taken by education personnel which limits identification to the most severe, chronic students. This may be due in part to the legal model of special education rather than a medical model. The result is an emphasis on avoiding false positives, (ie. avoiding labeling students who do not actually meet full criteria). Another reason may include excessive optimism on the part of the educators in seeing the manifestation of emotional or behavioral problems as something the student will overcome with time, when in fact the patterns demonstrate stable if not increasing levels of the disorder. Finally, behavior problems are often approached as solely a disciplinary issue rather than a manifestation of mental health and emotional problems. This, unfortunately, may lead to expulsion from school rather than treatment.

Interventions

A variety of school based interventions for Emotional/Behavioral Disorders have been attempted in the past few decades. Dunlap and Childs (1996) reviewed the intervention research conducted between 1980 and 1993 to determine the type and nature of interventions used. They summarized their conclusions in 6 categories, including social skills training, peer mediated interventions, and behavioral strategies, such as functional-assessment based interventions and self monitoring. Approximately 40% of the articles reviewed by the authors cited social skills

training as the primary intervention. The purpose of the review was to evaluate the trends regarding interventions for emotional and behavioral disorders and the results indicate that the most prevalent interventions are those that emphasize the training of replacement behaviors, or social skills, and behavioral interventions that include the manipulation of consequences and reinforcement for appropriate social behaviors.

Social skills training

The rationale for social skills training is well supported. Students with EBD are lacking in social and emotional competency and have multiple social skills deficits (Quinn, Kavale, Mathur, Rutherford & Forness, 1999). These deficiencies will frequently affect not only the social development and success of the student, but extend into the academic realm, interfering with overall educational success. Deficient skills are due to a variety of factors, including: lack of knowledge or understanding of appropriate behavior, inadequate opportunities for practice or feedback, lack of reinforcement to encourage skill acquisition, and interfering behaviors that impede the development of appropriate skills (Elliott & Gresham, 1993).

Social skills training for students with emotional and behavioral disorders is outlined by Quinn, Kavale, Mathur, Rutherford, and Forness (1999) as consisting of: Identifying the most critical social skills needed, teaching and modeling the skills, providing practice opportunities, offering feedback and reinforcing the correct demonstration of the skills, and preparing the student to generalize the skills in useful situations. Elliott and Gresham (1993) categorize the most frequently needed skills areas as academic success skills, social interaction or friendship skills, and social problem solving skills. Training variables that increase the likelihood of the student applying skills to real life situations include: rehearsal and practice of the skills using

recitation and role plays, feedback and reinforcement to encourage the proper use of the skill, and reductive procedures for the removal of interfering behaviors (Elliott & Gresham, 1993).

Social skills training is commonly used with students with EBD, however, there are mixed findings in the research regarding its effectiveness. In a review of the literature on social skills interventions with students with emotional and behavioral disorders, Gresham (1998) summarized the results of three recent meta-analyses in which effect sizes ranged from .20 to .50, averaging out to a low effect size overall. He concluded that there are several reasons for the low average effect size, including the poor use of outcome measures, inadequate matching of treatment to social deficits or excesses, lack of generalization strategies, and poorly assessing and addressing competing problem behaviors. Gresham summarizes the research by stating that social skills training is an important intervention component for children at risk of EBD, but that it is insufficient unless it is included as part of a comprehensive program.

Comprehensive social competency programs

The National Association of School Psychologists in their "Position Statement on Students with Emotional and Behavioral Disorders" (NASP, 1999) stated that due to the multiple dimensions of disorders of this nature, it is necessary that training be multi-dimensional as well. Comprehensive interventions should include a variety of team members, including school psychologists or counselors, teachers, and administrators as well as community providers and parents. It is further suggested that comprehensive interventions include individualization, early identification and attention to educational settings in addition to group and/or individual counseling and social skills training.

The term social competency training has been used frequently in the literature to describe

a social skills program that is comprehensive in nature. Gresham (1997) defines social competency as outcome based, essentially the generalized use of social skills and the impact on the student in the form of social acceptance and other positive results. Beelman, Pfingsten and Losel (1994), define social competency as combining social skills training with environmental, behavioral, cognitive, and emotional components. Essentially, social competency includes social skills training as the central component, with additional features to provide a more comprehensive approach and to facilitate generalization.

Reviews and Meta-analyses

Several reviews and meta-analyses have been conducted in the last decade in the area of social skills interventions for students with emotional and behavioral disorders. Some reviews specifically examined programs for students with Emotional and Behavioral Disorders (Quinn et al., 1999; Mathur, Kavale, Quinn, Forness, & Rutherford, 1998), whereas other reviews included a broader population containing students with behavior disorders as well as students classified with other disabilities, such as learning disabilities, students categorized as atypical or at risk and students considered normal (Schneider, 1992; Beelman, Pfingsten & Losel, 1994). The research and analysis provided in the reviews lend valuable information as to the different variables in social skills interventions that may impact the effectiveness of training. The results are summarized as follows.

Reviews of Social Skills for EBD Students

Quinn, Kavale, Mathur, Rutherford, and Forness (1999) conducted a meta-analysis of 35 studies evaluating social skills interventions for students classified as EBD. A wide range of outcomes were obtained across studies, with effect sizes ranging from -1.3 to 2.1. The combined

studies provided a total of 328 effect size measurements with a mean pooled effect size of .199, indicating a mild improvement overall. The research variables were further analyzed to determine factors that influenced outcomes of treatment. It was concluded that there were no differences between the results of established, commercial programs and experimental programs. The age of the subjects was not significant related to outcomes, nor was the duration of treatment, with no difference between students receiving more or less than 12 weeks of training.

Several factors did appear to affect outcomes. Teachers reported slightly higher efficacy (mean ES = .22) than parents (mean ES = .15), which could be accounted for by a number of factors, including more actual improvement at school than home or differences in teacher and parent perceptions of student behavior. There was significant variability in outcome on the behaviors measured. Disruptive behaviors and aggression were most resistant to change, with effect sizes of .13. Average effect sizes of .25 were obtained for pro-social behaviors such as adjustment, cooperation, and social interaction. Eight studies assessed anxiety and reported a mean effect size of .42. Differences in average outcome magnitudes were also noted between assessment instruments. The most change was found with sociometric measurements (ES = .23), followed by rating scales (ES = .16) and lastly, achievement tests (ES = .06) (Quinn et al., 1999).

Similar levels of effectiveness were found in a review of single subject interventions with students with emotional and behavioral problems (Mathur et al., 1998). The percentage of non-overlapping data points (PND) was the common metric used to compare across studies. The authors cite that the percentage level considered moderately effective with this type of data is 70% to 90%. Mild effectiveness is considered for non-overlapping percentages of 50 to 70. A total of 64 studies were evaluated with an overall PND of 62%. The authors emphasize that

results should be considered in light of the wide standard deviation of 33% and the range of PND values across studies, which spanned the full spectrum of percentages from 0% to 100%. The outcomes were further analyzed with a breakdown of research variables and factors.

The authors concluded that length of instruction was not significant related to outcomes. They found that outcomes mainly varied based on client characteristics. Students with autism had a worse outcome (PND = 54%) than did students with emotional or behavior disorders (PND = 64%). Students classified as delinquent, however, had the best outcome (PND = 76%). The interventions were less effective at the preschool level (PND = 55%) than the elementary level (PND = 63%) or secondary level (PND = 66%). Generalization was also examined and results pointed to greater generalization across time (PND = 74%) than across peers (PND = 64%) or settings (PND = 53%) (Mathur et al., 1998).

Reviews Including Students At Risk for EBD

Beelman, Pfingsten and Losel (1994) conducted a meta-analysis of social competency training with children. The overall effect size of approximately .47, was small to moderate and they found a wide range of effect sizes when client characteristics, treatment types and type of outcome measures used were analyzed. Treatment targeting students with externalizing or internalizing disorders resulted in moderate effect sizes, around .50, whereas effect sizes averaging .85 were reported for at-risk students. Lower effect sizes (.35 on average) were reported for normal students. Preschool aged children had the highest effect size of all age groups: .96 compared to .33-.35 in elementary school aged children and .45 for adolescents. No significant differences were found among treatment approaches (behavioral, social problem solving and self control).

Social-cognitive skills, measured by assessing student responses to social scenarios, resulted in a significantly higher effect sizes than skills assessed using rating scales or observations. Effect sizes ranged from .67 for students with externalizing or internalizing disorders to 1.06 with at-risk groups. Self-rated cognitions/affect resulted in the lowest effect sizes (.02 to .11). Effect sizes based on behavior observation measures averaged around .31 and effect sizes based on teacher/parent rating scales and sociometric measures averaged .33 for internalizing and externalizing sub-groups, but were .09 and below for at-risk or normal groups (Beelman, Pfingsten, & Losel, 1994).

A moderate overall effect size of .40 was calculated by Schneider (1992) in his meta-analytic review of social skills training for students with a variety of behavioral characteristics, including withdrawn, aggressive and not behaviorally atypical. A breakdown of factors was analyzed to determine the most significant variables in the outcomes of the 79 total studies. The review resulted in non-significant differences for duration of treatment, age of participants, therapist characteristics, and gender of students. Significant differences were seen among the various diagnostic characteristics of the subjects with aggressive students (ES = .37) and students who were behaviorally not atypical (ES = .32) having less positive outcomes than withdrawn students (ES = .67). There were also differences between outcome measures, with observations (ES = .41) reflecting more positive outcomes than sociometric ratings (ES = .25) or teacher rating scales (ES = .16). Measures based on roleplays were used in 10% of the studies and resulted in the highest overall effect size of .59. Setting characteristics were significant in favor of individualized training (ES = .66) over small group (ES = .42) or classroom based training (ES = .29) (Schneider, 1992).

Summary of Meta-Analyses

A compilation of the findings of the four meta-analytic reviews previously discussed produce some consistent findings as well as some discrepancies as to the factors that play the strongest roles in predicting the success of social skills interventions with students with emotional and behavioral problems. Overall effect sizes are consistently within the mild to moderate range of effectiveness. Duration of treatment was not a significant outcome factor in any of the studies. Treatment content and techniques played a minimal role in outcomes as well.

Characteristics of participants appear to be a considerable factor in outcomes, however, all studies coded different characteristics making comparisons difficult. Anxiety and withdrawn behavior were most likely to change in response to treatment and aggression and disruptive behavior were most resistant to change (Quinn et al., 1999; Schneider, 1992). Students with typical behaviors appeared to benefit less from social skills training than behaviorally at-risk and classified students, however, at-risk students appeared to benefit more from interventions than students classified as EBD (Beelman, Pfingsten &Losel, 1994; Schneider, 1992).

Outcome measures were compared in three of the four reviews. Rating scales (ES = .10-.16) and sociometrics (ES = .13-.25) resulted in lower effect sizes than behavioral observations (ES = .41 - .49). Achievement test data did not indicate significant changes (Quinn, et al., 1999; Schneider, 1992). Social cognitive scenarios resulted in the largest effect size (.67 - 1.06), but were only coded in one review (Beelman, Pfingsten, & Losel, 1994).

Age of participants was not a significant factor in two of the reviews (Quinn, et al., 1999; Schneider, 1992) and contradictory results were found in the remaining studies. Mathur et al. (1998) in the review of single subject studies, found the best results for secondary students (PND

= 66%), similar results for elementary aged students (PND = 63%) and the lowest for pre-school ages (PND = 55%). Beelman, Pfingsten and Losel (1994) found social skills interventions resulted in the most compelling outcomes for pre-school aged students (ES = .96), the lowest results for elementary school ages (ES = .33-.35) and moderate results in secondary levels (ES = .45). Setting was considered a factor in only one review, but results indicated significant variability between individual, small group and classroom based interventions (Schneider, 1992).

Based on these four meta-analytic reviews, there is a fairly wide range of outcomes for social skills training, extending from very low, insignificant changes to what is considered compelling evidence of effectiveness. The breakdown of results lends further clarification as to the factors that may potentially influence outcomes. Several factors are clearly weak, such as duration of treatment and treatment components, but other factors demonstrate strong impact, such as characteristics of subjects and outcome measures. Factors such as the age of participants and setting of instruction indicate potential impact on results.

Factors Affecting Social Skills Outcomes

Based on the findings of the previous reviews, the potential contributing factors involved in effective delivery and acquisition of social skills for students with emotional and behavioral disorders can be grouped into five areas. First, the setting, or *where* the instruction takes place, whether in a regular classroom or special education setting, is a potential factor in how skills generalize and warrants further evaluation. Second, the timing, or *when* the instruction is provided may have a role in how effective it is. Early intervention appears to be a key to success based on research outcomes. Third, *who* receives the instruction or the student characteristics and classification categories may influence the outcomes. Students who are formally classified

versus those at risk and the type of disorder or symptoms, such as internalizing or externalizing, may be important factors.

Fourth, *what* is included, or the characteristics of interventions, may play a role in the effectiveness. For example, the comprehensive nature of the treatment program and use of a variety of modalities, such as peer mentoring, as well as individualization techniques, such as matching students to specific treatments or skills have both been emphasized in the research. Finally, *how* outcomes are being measured and how "success" is determined will certainly play a role in the perceived impact of the instruction. Essentially, the use of different measurement strategies and criteria will provide different views of the results.

The literature review will investigate each of these areas in terms of how they impact the success of social competency training with students at risk of or classified with emotional/behavioral disorders. The review addresses the specific effects of: 1) setting characteristics; 2) timing of intervention; 3) characteristics of participants; 4) characteristics of interventions; and 5) outcome measurements as variables influencing reported results.

Setting Characteristics

Where social competency instruction takes place may impact its success. Research has indicated that for social competency training to be effective, the skills must generalize to the natural environment or a mainstream setting, defined as a regular education setting. For skills to be functional, they need to generalize to settings with familiar peers, adults and situations. This could include the classroom, halls, and playground (Gresham, 1998; Beelman, Pfingsten, & Losel, 1994). The classroom could ideally be a very suitable setting for the training of social skills with children with emotional and behavioral disorders. Skills can be taught in a context

with familiar peers, adults and situations.

Many of the students who do receive a special education classification for EBD may still participate in the regular education classroom according to their needs and with consideration of the guidelines outlined in IDEA regarding the Least Restrictive Environment. A common purpose of integrating special education students into regular education settings is to allow students to participate with non-disabled peers as much as is appropriate. Positive outcomes can include: increased social competence of students with disabilities, improved attitudes of non-disabled peers towards those with special needs, and enhanced peer and teacher relationships (Cartledge & Johnson, 1996). These are important needs that are very relevant to the student with emotional and behavioral disorders, however, not all students with EBD are appropriate for or benefit from inclusion in regular education settings (Lewis, Chard & Scott, 1994).

There are a number of unique challenges encountered in attempting to include students with emotional and behavioral disorders in regular education activities. Social skills are generally not being taught in the regular education curriculum, therefore, teachers may need training to provide these skills. The lack of success is further compounded by the overwhelming demand on the regular educators to manage emotional disturbance and behavioral disruption since most teachers are unprepared for the unique needs of these students (Cheney, Barringer, Upham & Manning, 1996). The literature frequently addresses the lack of training and perceived incompetency of regular education teachers to manage the behaviors and teach needed social skills to emotionally disturbed students.

Due to the complications of providing training in regular education settings, social skills instruction often takes place in the special education classroom through individualized

instruction or in small groups with other special education students. Reduced class size and opportunities for individualization are advantageous, however, appropriate peer models may not be available in this setting and students may have difficulty generalizing the newly acquired skills to the regular school environment.

Increasingly more restrictive environments are sometimes required for the success of the student with EBD as well as other students. Social skills instruction may therefore take place in a self-contained classroom or learning center separate from the regular education environment. Training may be more intensive and programs may have unique features in specialized settings, however, these students may or may not be mainstreamed back into a regular setting.

Timing of Intervention

There is support for social competency training designed to prevent emotional or behavioral problems with students at risk for such disorders. The research indicates that many school-based mental health programs are "reactive" rather than "pro-active" in their approach, treating students only when the problems persist and/or progress in their severity (Forness, Serna, Hale, & Kavale, 2000). An analogy can be made with the medical model of early intervention versus later interventions with many progressive diseases. Based on this analogy, treatment tends to be more successful the earlier the disorder is identified and treated.

If untreated, emotional and behavioral disorders appear to be very stable in that once apparent, they remain if not intensify, rather than diminish over time. The outcomes of several longitudinal studies indicate that anywhere from 30% to 50% of pre-school children identified as having problem behaviors, especially those of an externalizing nature, are likely to continue to have significant behavior problems in elementary school and even into adolescence (Campbell,

1998). It is also well documented that older elementary aged students identified as having emotional or behavioral disorders manifested symptoms at preschool ages, suggesting that they could have been identified much earlier (Campbell, 1995).

There is some research supporting the impact of early intervention. In the previous meta-analytic reviews, preschool aged children had more positive outcomes than all age groups in one review (Beelman, Pfingsten & Losel, 1994), but interventions were less effective with pre-school age groups than older students in another review (Mathur et al., 1998).

Characteristics of Participants

Student characteristics, including specific diagnostic traits and the magnitude of behavioral symptoms, may play a role in the success of the intervention. Children with disorders that are externalizing in nature, with the main symptoms including hyperactivity, aggression, or non-compliance, may respond differently to social skills instruction than those with disorders that include internalizing symptoms, such as depression, anxiety or social withdrawal. This is supported in several studies. For example, Quinn, et al. (1999) in their meta-analysis discovered that disruptive behavior and aggression were very resistant to change, but that, overall, interventions with students with anxiety resulted in more significant results.

Classification level, or perhaps severity, may also impact the effectiveness of interventions. Students classified as EBD versus those clinically at risk for developing EBD may experience different levels of success. The average effect size of meta-analyses targeting children classified as EBD were in the mild to moderate range of effectiveness, whereas reviews conducted with students identified as having behavior problems or at risk, but not formally classified, resulted in moderate effect sizes overall, twice those of the studies with EBD students

(Quinn et al., 1999; Mathur et al., 1998; Schneider, 1992; Beelman, Pfingsten & Losel, 1994).

Characteristics of Interventions

The comprehensive nature of the treatment and inclusion of a variety of treatment modalities may be a significant factor in successful social competency interventions. The research emphasizes cognitive training and behavioral strategies as critical components. Programs such as Interpersonal Cognitive Problem Solving (ICPS) as researched by Denham and Almeida (1987) report positive results. Durlak and Wells (1997) in their meta-analysis of social competency prevention programs with students in regular education, found those programs employing behavioral or cognitive-behavioral techniques were twice as effective as those utilizing non-behavioral interventions. Emotional competency training, with an emphasis on feelings education, anger management, and empathy skills, is widely used in pre-school based programs and supported in social emotional learning (SEL) research (Frey, Hirchstein, & Guzzo, 2000; Payton, Wardlaw, Graczyk, Bloodworth, Tompsett & Weissberg, 2000). Although this research was done with regular education students, rather than those identified at risk, the results may extend to students with special social, behavioral and emotional needs.

The results of the meta-analyses, however, do not conclude that treatment components or content plays a significant role in the effectiveness of social competency training. Only two meta-analyses addressed treatment type and technique as a variable in their research. Beelman, Pfingsten & Losel (1994) discovered that all types of programs (behavioral, social problem solving, and self control) were effective, with no significant differences and that there were also no significant differences between the effectiveness of mono-modal versus multi-modal approaches. Shneider (1992) found somewhat higher effect sizes for treatment techniques

emphasizing behavioral approaches, such as modeling and coaching (ES = .53 - .58) than those based on social-cognitive methods or combined approaches (ES = .32 - .36), however, statistical significance was not reached in the final analysis.

Individualization, as an intervention approach, has been emphasized as an area of importance, next to generalization, in the research. Several meta-analyses made suggestions that future studies address individualization specifically (Durlak & Wells, 1997; Beelman, Pfingsten & Losel, 1994) and one addressed training format as a variable, comparing results of individual instruction, which were more impressive (ES=.66) than small group (ES=.42) or class wide (ES=.29) instruction (Schneider, 1992). Matching the training content of interventions, in a variety of instructional settings, to the specific social skills deficits of the students involved is a potentially crucial element and is not considered sufficiently in many studies (Evans, Axelrod, & Sapia, 2000). Gresham (1998) indicates that interventions need to address acquisition, performance and fluency deficits of children specifically, to determine what area a child needs support and training in. Other individualized approaches include the use of Individual Educational Plan (IEP) goals and functional analysis of behavior to determine instruction.

Outcome Measurements

The effectiveness of interventions may vary based on the constructs being measured as well as the type of outcome measurements used. For example, measuring prosocial versus problem behaviors may result in different outcomes. In the meta-analyses, higher effect sizes were found for measurements of prosocial behaviors and much lower effect sizes were obtained on measures of disruptive behavior and aggression (Quinn et al., 1999). High effect sizes were also found for measures of social-cognitive skills using social-cognitive tests or interpersonal

problem solving tests. Moderate effect sizes were found for outcome measures involving behavioral observations. Measures of social adjustment, sociometrics and parent/teacher rating scales all provided low effect sizes (Beelman, Pfingsten & Losel,1994). This is especially significant considering that many studies use rating scales for outcome measures. These areas warrant further evaluation to determine the significance of the role of the constructs being measured along with the outcome measurements being used.

In summary, there is a growing concern regarding students with emotional and behavioral problems, for whom deficiencies in social and emotional competency are common. The research, however, is incongruent regarding the effectiveness of social competency training for children with emotional and behavioral disorders. An analysis of the research in this area could help to determine the factors that contribute to more successful interventions and outcomes.

Purpose and Procedures

The purpose of this paper is to examine the literature on social competency training and/or comprehensive social skills programs for students classified as or clinically at risk for developing E/BD. The areas to be explored include:

1. Impact of Setting - A comparison of social skills interventions conducted in the regular education setting versus special education settings.
2. Impact of Timing - The variability of timing, including the effectiveness of school based early intervention or prevention programs versus interventions conducted in later elementary school years.
3. Impact of Student Characteristics - Differences in outcomes based on classification status, whether classified EBD or clinically at risk of developing EBD and

differences in diagnostic characteristics, such as internalizing versus externalizing symptoms of students.

4. Impact of Intervention Characteristics - The effectiveness of multiple treatment components, such as social skills training in conjunction with emotional competency, behavioral strategies, and cognitive training as well as the comparative importance of individualized treatment.

5. Impact of Outcome Measurement - The comparative outcomes of different measures, such as rating scales, behavioral observations and socio-metrics.

Inclusion Criteria

This paper will address each of the five research areas in a comprehensive review of the literature. The literature review will include research on social and emotional competency training or social skills instruction designed for students with emotional behavioral disorders, or at risk of such, in an elementary setting. The following criteria will be included:

1 - Participants must be students either classified as EBD, or a synonymous term based on the IDEA definition, or identified as being clinically at risk for developing a emotional behavioral disorder. Students identified as delinquent or diagnosed as ADHD without co-existing emotional disorders will be excluded as will students labeled at-risk solely due to being from a low socio-economic class.

2 - The studies must be conducted with pre-school and/or elementary school aged children. Research with secondary education students or adolescents will be excluded.

3 - The studies must involve training in social competency, indicating the use of social

skills training as part of a comprehensive program, including behavioral training as well as additional components in areas such as: cognitive training, emotional competency, parent training and/or peer components.

4- The studies must be conducted in a school-based setting and measure social, behavioral and/or academic outcomes in an educational setting.

5 - The studies must have been conducted using a scientific method and provide empirical data. Only those studies reporting a quantified outcome will be included, such as an effect size or clinical meaningfulness.

6 - Only studies that have been published since 1992 will be included. Articles published prior to 1992 have been covered in previous reviews.

Methods

Literature was reviewed systematically using the most relevant data bases (Academic Search Elite, and PsychLit). The following keywords were used in the search: emotional, social, or interpersonal competence, social skills, prosocial behavior, social problem solving, and conflict resolution; emotional or behavioral disorders, emotionally disturbed, mental health prevention, aggression, behavior problems, at risk; classroom or school, preschool, elementary or middle school, and children. The following authors were also searched in the data bases: Barkley, Goldstein, Gresham, Forness, Kavale, Mathur, Quinn, Rutherford, and Walker. A manual search of the most relevant journals including: *Journal of Emotional and Behavioral Disorders, Behavioral Disorders, Psychology in the Schools, and Journal of School Psychology* was conducted. The technique of searching backwards using the references of the obtained articles was employed.

Thirty-two articles were obtained using the search methods which initially appeared to meet the inclusion criteria. Articles that ultimately did not meet criteria included, two articles which classified students as at risk based on a socio-economic definition rather than a clinical definition. Three articles conducted the training outside the regular school setting, one in a clinic, one was home based and one was in an after-school program. Two articles failed to distinguish outcomes of regular education students from at risk students and one article lacked sufficient outcome data. Therefore, twenty-four articles fulfilled the complete selection criteria including twenty-two initial studies and two studies reporting follow up results on two of the initial studies. All studies are summarized in the Appendix section.

Examination of the Studies

Articles were examined as to the subject characteristics, including sample size, ages of participants, and classification or risk status. The intervention characteristics were examined as to the setting of the intervention, the length and intensity and the agents involved in administering treatment. The comprehensiveness of the intervention was evaluated as to the use of behavioral, emotional, cognitive, and social components. Individualization procedures were identified as well as additional comprehensive components, such as parent training. The types of outcome measurements and results were reviewed. This information is summarized in the Summary of Articles in the appendix.

Impact of Setting on Social Competency Training

Introduction

The setting in which social competency training takes place is one variable that may impact the success of training. Settings can be grouped into three categories. One setting is

regular classrooms, where social skills training is typically provided to whole classes, including both students at risk or classified as EB/D as well as students not classified or considered at risk emotionally or behaviorally. The treatment agent in this setting is often a regular education teacher who may either be trained in the particular social competency program or receives on-going consultation from formally trained professionals.

The second setting is the special education classroom or an alternative setting outside the regular classroom. In this type of setting, students are removed from the general education environment for a limited period of time on a regular basis to receive social skills training. Students in such settings are commonly classified as EB/D and may also receive academic services, however they would still spend some, if not the majority of their time in the regular education setting. Social skills interventions provided outside the regular classroom setting are commonly conducted as small groups and could also be conducted individually. The agents involved are generally either special education teachers or specially trained professionals, such as school psychologists.

The third setting is a self-contained or specialized setting that is completely outside the regular education setting. Students in this setting would likely not only be classified as EBD, but would have demonstrated a need for complete removal from the regular education setting, typically due to emotional and behavioral issues. Students would receive social skills training as well as the majority of their other education with other students classified as having behavioral disorders or requiring intensive behavioral services. Class sizes are often small, resembling small group sizes, and change agents are typically specially trained educators and professionals.

In addition to the three school settings, social competency programs may take place in

settings outside of school, such as the home and community. A number of comprehensive social competency programs attempt to generalize the skills taught in the school setting by applying them to the home setting. This is accomplished by either training parents to implement the skills at home, or by training the child and parent together in a clinical or home setting.

Regular Classroom / Whole Class Social Skills Training

Regular classroom social skills training is designed to teach the child in the natural classroom environment. It is often an option for students who are considered at risk for emotional or behavioral disorders, since the special education setting is not generally available for students who have not been formally classified. The regular classroom may be considered preferable in many cases since interventions are being provided in the least restrictive environment and also due to the availability of appropriate peer models. Also, if the regular education teacher is involved in training it is more likely that skills will be reinforced and follow up done more consistently in the regular setting.

Pre-schools and kindergartens are often used for this type of model due to both the frequent opportunities for social learning in the regular class curriculum and the tendency for early identification procedures to target children at risk for emotional and behavioral disorders in these age groups. Three studies were conducted in the preschool setting with students at risk for emotional and behavioral problems (Serna, Lambros, Nielsen & Forness, 2002; 2000; Tankersley & Kamps, 1996). One involved a sample of 84 students divided into a experimental group of 53 students and a control group of 31 students (Serna et al., 2000) from 5 separate Head Start classrooms. Another involved 8 experimental students and one control student also from separate Head Start classrooms (Serna et al. 2002). In the third, 45 preschool children at risk for

aggression were divided into a target group of 34 students and a control group of 11 students in 6 target and 4 control Head Start classrooms (Tankersley & Kamps, 1996).

In the first two studies, two social skills sessions per week were conducted in the regular classroom for three hours each over a total of 12 weeks. Interventions were provided by a masters-level interventionist in conjunction with the regular Head Start teacher. The curriculum consisted of three social skill areas: cooperative play, following directions and social problem solving. Instruction included role plays, story lines with outlined steps and interactive practice. Skills were taught and practiced until each target child performed the skills at mastery level. Teachers were instructed to provide situational prompts, practice opportunities, feedback and praise in both the classroom and playground environments.

The Serna et al. (2000) study assessed outcomes using a number of behavioral rating scales at pre and post test, including the Early Screening Project (ESP; Walker, Severson, & Feil, 1995), the Social Skills Rating Scale (SSRS; Gresham & Elliot, 1990), the Vineland Adaptive Behavior Scales (Sparrow, Balla, & Cichetti, 1984), Iowa Conners (Loney & Milich, 1982), and Children's Global Assessment Scale (C-GAS; Rothman, Sorrells & Heldman, 1976). Results were calculated using two-way ANOVAs with both factors of time (pretest and postest scores) and group membership (experimental or control). Effect sizes were then calculated for those comparisons reaching significance to determine the magnitude of the difference between pre and post test for the experimental and control groups separately. Significant differences between groups across time ($p < .05$) were found on half of the teacher rating scales (See Table 1).

Table 1

Significance Levels of Group by Time Differences and Effect Sizes of Pre/Post Differences for Experimental and Control Groups on Teacher Rating Scales (Serna et al., 2000, p. 77)

Rating Scale Teacher Forms	Significance of Group x Time Interaction Effect	Effect Size of Pre/Post Difference	
		Experimental Grp.	Control Grp.
SSRS - Problem Behavior	$p < .04$	.15	-.24
ESP - Adaptive Behavior	$p < .002$	.32	-.32
ESP - Maladaptive Behavior	$p > .12$	(ns)	(ns)
ESP - Social Interaction	$p < .001$	.53	-.43
ESP - Aggression	$p > .48$	(ns)	(ns)
ESP - Critical Events	$p > .74$	(ns)	(ns)
Vineland	$p < .004$	.25	-.34
Iowa Conners -			
Inattention/Overactivity	$p < .001$	.56	-.40
Opposition/ Defiance	$p > .42$	(ns)	(ns)
Child Global Assess. Scale	$p > .94$	(ns)	(ns)

Parent rating scales included the SSRS Problem Behavior and Social Skills scales and the Vineland Communication Skills Domain. There was a significant group by time interaction on the externalizing subscale of the SSRS, indicating that the experimental group maintained their level of problem behavior over time, but the control group had an increase in externalizing behaviors between pre and post test ($p < .003$). There was not a significant group by time

interaction on either the SSRS internalizing scale or the Vineland. A significant group by time interaction was also seen on the Social Skills scale, however it was the control group that was rated by parents as improving between pre and post testing ($p < .003$) and no significant change was seen for the experimental group (Serna et al., 2000).

Serna et al. (2002) summarized the change in clinical criteria on only the ESP from pre to post-intervention. The ESP includes the following five scales: a Critical Events Index measuring high intensity, low frequency behaviors such as physical assault, an Adaptive Behavior Scale measuring positive classroom behaviors, a Maladaptive Behavior Scale measuring disruptive-type behaviors, the Aggressive Behavior Scale measuring verbal and physical aggression, and the Social Interaction Scale measuring positive social behaviors. Of the eight experimental children, five scored in the clinical range on three of the ESP scales at pre-intervention, one was clinical on 4 scales and two reached clinical levels on all 5 scales. The control student scored in the clinical range on three of the ESP scales. At post-testing two experimental children no longer met clinical criteria on any of the ESP scales, including one child who had been in the clinical range on all five scales. The other six children remained at approximately the same level at post-test, but no children reached clinical levels on any additional scales. The control child did not improve at post-test, and it was noted that three additional children in the control classroom, who had not been identified as high risk initially, reached clinical criteria at post-testing (Serna et al., 2002).

A slightly different type of early intervention program was conducted by Tankersley and Kamps (1996) consisting of three classroom based components: social skills instruction, affection activities and antecedent strategies. During the initial phase of the program (10 weeks)

social skills instruction was conducted in small group settings composed of up to 3 target children and 2 or 3 classroom peers. Topics covered concepts such as sharing, asking for help, and cooperation. Sessions were held 2 to 3 times per week and included modeling, practice and feedback through unstructured play following the instruction. Affection activities were held 4 times per week for 12 weeks during the first phase of the program in a large group and provided students opportunities to express appropriate physical and verbal interaction with peers. Antecedent strategies were introduced during the generalization and monitoring phase after the instructional components in Phase 1. Students were monitored during a 15 minute structured play session and received feedback and reinforcement for appropriate behavior. Control group students received only the traditional Head Start program and a third group of Comparison peers received treatment components as role models for target students.

Outcomes were measured using direct, five-minute observations of social interactions and behavior during the two treatment phases for each of the three groups. Observations were averaged for each phase. Overall results showed that during both phases, target and control group children interacted positively at approximately the same frequency, but the duration of interactions was significantly different, with target students averaging 132 seconds and control students 101 seconds of interaction ($p < .05$) during Phase 1. Even greater differences were found during Phase 2 with control group students maintaining 101 seconds of interaction and target students reaching 173 seconds on average ($p<.001$). Disruptive behaviors were somewhat lower for the target group students with a mean duration of 11.9 seconds compared to 17.3 seconds for control groups students during Phase 1. Differences were not statistically significant, however, until Phase 2 when control group students maintained 17.3 seconds of disruptive

behavior and target students dropped to 3.7 seconds of disruption on average ($p < .001$).

Frequency counts of disruptive behaviors were also tallied during 30 minute observations during a variety of school activities and settings. Results demonstrated that following the generalization and maintenance phase, control group students demonstrated significantly higher rates of aggression, destruction and negative verbalizations than students in the target group ($p < .001$). There were also significant differences in rates of compliance between target students who complied 81% of the time and control group students who complied 62% of the time ($p < .001$). Target students also grabbed significantly less (once every 20 minutes on average) compared to control group students (once every 8 minutes) ($p < .05$). Differences between groups for out of seat behavior were not significant (Tankersley & Kamps, 1996).

Overall results indicate that the target group experienced significant improvement in comparison to the control group on 6 out of 9 observational measures. Data collected on the peer comparison group indicated that significant differences were seen all 9 measures in contrast to the control group and improvement over the target group was seen on three measures at post test. Essentially, the comparison group continued to outshine the target group at post test. Results of the study supported the need for a generalization phase since markedly greater differences were seen following this phase in comparison to the instruction and activity phase. One limitation of the study was the short duration of treatment and follow up. It is not known whether continued generalization strategies were needed to maintain the behavioral changes over time.

Regular classroom interventions do not need to be limited to early intervention, but can extend through a broad range of age groups and can benefit students formally classified with emotional/behavioral disorders as well as students at risk. One such example is a study by

Kamps, Kravits, Stolze, and Swaggart (1999) in which the authors conducted a multiple component, social skills intervention in regular classrooms with both E/BD and at risk students in grades Kindergarten through 7th grade.

The sample included 28 target students, including 11 classified as E/BD and 17 identified as at risk. The control group consisted of 24 students, including 6 classified as E/BD and 18 identified as at risk. The intervention was conducted in 26 different classrooms in 12 different schools with teachers as the change agents. It consisted of classroom behavior management, social skills training and peer tutoring in reading for the benefit of all students, not just those with behavioral problems. The social skills lessons were taken from published curriculum packages such as Skillstreaming the Elementary School Child (McGinnis & Goldstein, 1997) and Violence Prevention: Second Step (Committee for Children, 1990) and targeted classroom based skills, such as following directions and work completion, as well as friendship skills, including joining in a group and social problem solving. Teachers received training and consultation as part of the intervention. The control group classrooms maintained their present levels of interventions so as not to remove existing programs.

Baseline data were collected on the target and control groups using scores from the Systematic Screening for Behavioral Disorders (SSBD; Walker & Severson, 1992). Students were rated on maladaptive behavior, with scores of 35 or higher indicating serious classroom problems, and on adaptive behavior, with scores of 30 or lower indicating difficulty in class participation and learning. The target group received a mean Maladaptive Behavior score of 40 and a mean Adaptive Behavior score of 31 at pre-test. The control group received a mean Maladaptive Behavior score of 36 and a mean Adaptive Behavior score of 34 at pre-test.

Outcome measurements included direct observations of appropriate and inappropriate classroom and recess behaviors as well as teacher ratings. Appropriate behaviors (compliance, academic engaged time and positive interactions) were recorded as rates of compliance and duration recordings of on-task and positive behaviors. Frequency counts were used to record rates of inappropriate behaviors (aggression, negative verbalizations, out of seat rate and negative interactions) per minute during observations. Results of post test comparisons indicate the target students consistently exhibited higher rates of appropriate behaviors than control students. However, on only two out of four measures (academic engaged time and positive interactions) the differences were statistically significant between groups at post test ($p<.05$). Similarly, negative behaviors were consistently lower at post test for the target group, with two out of four behaviors (aggression and out of seat rates) reaching statistical significance between groups.

Teacher ratings were collected weekly in a survey format based on the teachers' perception of students' appropriate behavior, such as: Requesting attention appropriately, social interaction, anger management, work completion, and class participation. Teachers rated frequency of positive behaviors on a scale of 0 to 5 (5= always, 3 = frequently, 0=never). Teachers also provided weekly frequency counts of inappropriate behaviors, such as aggression, non-compliance, and disruptive behavior. Results of positive behaviors were not significantly different at post test for target compared to control group students based on teacher ratings, but ratings of negative behaviors for target students were almost half that of control students with statistical significance at the .01 level (Kamps et al. 1999).

The main drawback of the study is that pre- intervention and post-intervention data could not be directly compared since measurements were different at pre and post test. The

adaptive and maladaptive pre-test scores on the SSBD do however indicate the target group had slightly more severe emotional or behavioral problems at the onset of the intervention than the control group and although differences were not statistically significant, the range in post test values suggest a meaningful difference in the gap in improvement for the target group compared to that of the control group.

One note of concern in the study is the level of consistency with implementation. The three areas of intervention were delivered at a higher rate for target classrooms, but not at 100% and control classrooms did receive some intervention in each area since programs were not removed from classrooms if they were in place prior to the study. Classroom behavior management was implemented in 93% of target group classrooms and 75% of control group classrooms. A minimum of weekly social skills instruction was implemented in 79% of target group classrooms compared to 30% of control group classrooms. Peer tutoring was provided in 78% of target group classrooms versus 30% of control group classrooms. Implementation varied due to a range in classroom structure and teacher adherence to programs and interventions.

A study combining different ages and classification characteristics was also conducted by Flicek, Olsen, Chivers, and Kaufman (1996). These authors developed a unique approach to training E/BD students in the regular education setting that they termed the combination classroom (CC). This specially designed class consisted of 3 students with E/BD, 6 students with learning disabilities, and 19 students without disabilities for a total of 28 students all of whom were in grades 4 or 5. Whole class social skills instruction was taught along with supplemental daily activities designed to increase social, behavioral and academic competence. Techniques such as role-playing, modeling by staff and peers, coaching and homework

assignments were used as well as incidental teaching by staff. A class-wide behavioral program with a structured level system was also implemented. The staff included a specially trained general education teacher and a resource teacher who served as a case manager for the students with disabilities plus two teaching assistants who assisted with behavior management implementation. Both teachers and the assistants were trained in behavioral management.

Class wide measures included satisfaction surveys, completed by all students in the class and their parents, and academic scores. The level of satisfaction was predominantly high to very high as rated by 65% of parents and 68% of students. Twenty-three percent of parents and 21% of students were neutral and less than 13 % of parents and students were dissatisfied with the combination classroom. Class wide academic measures did not show significant differences based on a comparison of Standardized Achievement Test scores and GPAs from the pilot program year with the previous year, with the exception of a significant improvement in mathematics application scores ($p < .05$).

Teacher rating scales and behavior based report cards on 9 positive behaviors were used to measure progress for students with E/BD. The three students with E/BD received ratings (1 = Needs Improvement, 2 = Improving, 3 = Satisfactory, and 4 = Excellent) on behavioral report cards throughout the year on behaviors such as respect, cooperation, and compliance. The difference in these ratings was significant from pre to post ($p<.05$), with an increase from 1.75 to 2.51 indicating the three students improved from a score that was less than improving to one that approached satisfactory. The Child Behavior Checklist - Teacher's Report Form (TRF; Achenbach, 1991) was completed on all three students with E/BD prior to entering the pilot program with the following clinical, or borderline clinical, mean T scores: Total Problems = 72,

Externalizing Problems = 71, Internalizing Problems = 63. The mean T scores on the TRF, taken at the end of the pilot program were all sub-clinical, dropping between 1.6 and 3.8 standard deviations on average as follows: Total Problems = 47, Externalizing Problems = 49, and Internalizing Problems = 46 (Flicek, Olsen, Chivers, & Kaufman, 1996) .

The main limitation of this study was the absence of a control group. Regular education and students with E/BD were compared within groups at pre and post intervention, but no comparison was made with other regular education or E/BD students. This comparison would have been especially helpful in assessing the overall academic impact on the classroom as a whole compared to regular classrooms. The other limitation is the lack of additional outcome measures, especially direct behavioral measures. The Teacher's Report Form indicates a significant level of change, but is not accompanied by data from any other rating scales or behavioral observations.

Regular classroom interventions including parent training

Class wide social competency interventions may also include a parent training component as part of a comprehensive approach. Including parents in the training process can extend the skills taught to the home setting and can assist in generalization. Other benefits of including parents include the opportunity to enhance parent child relationships and interactions, involvement of the parent in teaching the child social skills, provision of parenting support with education and the recruitment of the parent in a team approach to assist in individualizing the child's treatment.

In a review of social skills training for at-risk youth the First Step to Success program is identified as an effective comprehensive program that includes a school based intervention as

well as a home based component (Bullis, Walker & Sprague, 2001). Three studies have been conducted using the program of First Step to Success in a regular classroom with conjoint parent training. The first program by Walker and Kavanagh (1998) was set in kindergarten classrooms with 46 at risk students over two school years. Golly, Stiller and Walker (1998) replicated major components of the program with 20 at risk kindergarten students. Golly, Sprague, Walker, Beard and Gorham (2000) then used the First Step to Success program with 4 at risk kindergarten twins. A unique feature of the program is that it is applied to one child at a time.

The First Step to Success program involves a minimum 30 day classroom social competency program with a 6 week supplemental home based program requiring an average of 3 months for full implementation . The school based component utilizes the CLASS program (Contingencies for Learning Academic and Social Skills; Hops & Walker, 1988) which is implemented through a three stage process. In the first stage, a professional consultant provides two daily intervention sessions with the target student in the regular classroom for the first five days while also supporting and training the teacher. Intensive behavioral management strategies are employed using a point system with frequent monitoring and feedback. The teacher assumes the role of interventionist in the second phase, which covers days 6 - 20, and implements the behavioral program throughout the school day with the student receiving points and praise towards the delivery of chosen rewards. The maintenance phase follows with a fading process of the point system and reinforcement through day 30 (Walker & Kavanagh, 1998).

Parents receive six home based training sessions starting on the 10th day of the intervention, in which they are taught social competency lessons that they then teach to their child. Topics include skills such as cooperation, problem solving, and friendship making.

Parent-child games and activities are included along with generalization methods such daily assignments and practice. The teacher is aware of the skills being taught and reinforces the child's application of the skills at school and provides feedback to the parents. Parents are also involved in the delivery of rewards to the child based on his or her performance during the practice sessions at home and application of the skills at school. Parents in all studies received this component with the exception of the parents of twins 2 and 2a in the Golly (2000) study.

Table 2

Comparison of Target Students Pre and Post Mean Academic Engaged Time (AET) Levels

Study/Subjects	Baseline AET	Intervention AET
Walker & Kavanagh (1998)		
Cohort 1 (93-94)	63%	80%
Cohort 2 (94-95)	60%	91%
Golly et al. (1998)	60%	83%
Golly et al. (2000)		
Twin Subject 1	75%	99%
Twin Subject 1a	75%	100%
Twin Subject 2	12%	94%
Twin Subject 2a	75%	93%

The results in all three studies were measured using direct observations, specifically Academic Engaged Time (AET), which measures behaviors such as attending to the teacher, following directions, and staying on task. The AET of students were tracked along with

inappropriate behaviors, such as out of seat or non-compliant behavior, which reduced the overall percentage of academic engaged time. The normative level of AET is between 75% and 85%. All subjects, on average or individually, experienced a significant increase in academic engaged time between pre and post observations. The subjects began the study with baseline levels of 60% to 75% AET, with the exception of 12% AET for Twin 2 in the Golly et al. (2000) twin study. The normative level was surpassed at post intervention in all studies with mean rates of at least 80% and as high as 100% (See Table 2).

Teacher rating scales were also administered pre and post intervention in the Walker and Kavanagh (1998) study. The four measures used include the Adaptive and Maladaptive scales on the ESP and the Aggression and Withdrawn subscales of the TRF. Effect sizes comparing the treatment and control groups were calculated using the post-intervention scores. The obtained values are considered very high for all but one of the measures (ESP Adaptive ES = 1.17, $p<.001$; ESP Maladaptive ES = .93, $p<.001$; TRF Aggression ES = .99, $p<.001$; TRF Withdrawn ES = .26, ns). The effect size of the AET direct observations is also very high (ES = .97, $p<.05$), with experimental subjects increasing their academic engaged time from pre-intervention to post-intervention approximately twice that of the wait-list control group. This study also followed the two cohorts through at least first grade and half of cohort one subjects through second grade. It was discovered that AET levels were maintained by both cohorts at an 82% level or higher in the one or two years following intervention, however, both cohorts dropped from a peak post-intervention level of 91%, indicating that maintenance effects are not completely stable.

Golly, Stiller and Walker (1998) also administered teacher rating scales at baseline and following the intervention for the four target students in the study. On the Aggression scale of

the TRF, participants dropped from a pre-intervention mean T-score of 75 to a post-intervention mean T-score of 62, close to one full standard deviation lower, which is a statistically significant decrease in the clinical level of aggression ($p = .005$) as well as a clinically significant drop. The Withdrawal subscale on the TRF was not significantly affected, although it did drop slightly from a pre-intervention mean T-score of 58 to post- intervention mean T-score of 52. On the Adaptive scale, mean post test scores increased more than one full standard deviation ($p = .000$) and Maladaptive scores dropped a full standard deviation between pre and post tests ($p = .002$).

The results of the First Step to Success studies are promising, especially considering the follow up data, demonstrating at least some level of enduring treatment effects. The main limitation of the studies is the absence of a control group in two of the studies (Golly, Stiller & Walker, 1998; Golly et al., 2000) to allow for comparisons and to control for factors such as maturation, which is especially potent considering the rapidly maturing Kindergarten age group. The third study, however, reported significant pre to post intervention differences between experimental and wait-list control (Walker & Kavanagh, 1998).

Three studies were conducted in the regular classroom setting with parent training components that employed a control group or comparison group design. An experimental control group design was employed in a study by Kamps, Tankersley and Ellis (2000), a control group design was conducted by the Conduct Problems Prevention Research Group (1999) and McConaughy, Kay and Fitzgerald (1998;1999) conducted a study comparing groups receiving the parent component and those with social skills instruction only.

Kamps, Tankersley and Ellis (2000) conducted a classroom based, social skills intervention with 31 pre-school children at risk for aggression. The study was conducted with

two separate cohorts starting in pre-school and extending through two years of follow up in kindergarten and first grade. A third cohort or comparison group of 18 students, also identified as at risk, was followed throughout the three year study. These students did not receive the social skills intervention.

The first year of the intervention took place in Head Start classrooms and consisted of teacher conducted class wide social skills instruction at a frequency of 1 - 3 times per week plus 2 - 4 group activities per week utilizing the skills taught within positive interaction opportunities. A second year of social skills intervention was provided during kindergarten using scripted lessons with modeling and practice opportunities in either a small group or class wide setting. Following each lesson, children participated in a small group activity with monitoring by the teacher who provided reinforcement for skills used on feedback charts. In addition to formal instruction, class wide incidental monitoring with reinforcement was also utilized to encourage generalization and application of social skills in the natural environment. Social skills posters with attached token receptacles were placed in prominent positions in the classroom and students accumulated tokens when they were observed using each skill.

Additional intervention components included peer tutoring in reading and a parent support intervention. Peer tutoring was added during year three for cohort 1 only and consisted of two to four 20 minute sessions per week with teacher monitoring and reinforcement for positive peer interaction. The parent training consisted of seven two hour sessions focusing on topics to assist parents in managing behavior, building child self esteem, communication and supporting the use of social skills at home. Four parent-child group activities were also conducted throughout the two year period to encourage positive parent-child interactions.

Direct observations were conducted in the classroom at baseline and three subsequent points during the three year study. Analysis of variance across time was calculated for both cohorts and the comparison group. Significant group by time interactions in favor of the intervention groups were seen for all negative behaviors, with the exception of destructive behavior, such as aggression ($p=.014$), grabbing ($p=.042$), out of seat ($p=.003$) and negative verbal rates ($p=.000$). A significant group by time interaction was also seen for compliance, which increased by 7% and 11% in cohorts one and two respectively and decreased by 11% in the comparison group ($p=.000$). Peer social interactions were also observed during 10 minute probes in unstructured settings with both treatment cohorts increasing the amount of social interaction time and the comparison group decreasing in total peer interaction time, resulting in significant differences ($p = .000$) between groups during each of the two follow up observations.

An analysis of teachers' weekly report forms describing the students' behaviors, such as destructive towards property, non-compliant, or disruptive, indicated no significant difference between experimental and control groups over time. This suggests a discrepancy in teacher perceptions of behavior compared to the results of direct observations. Additional direct observations and comparisons were also made with a normative group of students who were identified as typical, not at risk. Observations in both the classroom and unstructured times indicated a significant difference between treatment group children and typical peers, with peer behavior noticeably less aggressive and more socially interactive. Although children in the untreated comparison groups still had significantly more problem behaviors than treatment groups at post treatment, there was still also a gap between the behavior level of treated cohorts and the peer standard of typical behavior (Kamps, Tankersly, & Ellis, 2000).

The Conduct Problems Prevention Research Group (1999) conducted a study using a comprehensive social competency intervention consisting of classroom based social skills training, peer pairing, academic tutoring, and a supplemental clinical intervention with parents and children. The sample consisted of 891 first grade students identified in kindergarten as at risk for aggression and opposition through a multi-stage screening process . Children who were rated by parents and teachers as being in the top 10% of students demonstrating aggressive and disruptive behavior participated in the study, which involved 400 classrooms in 4 different sites across the country. Half of the sample participated in the treatment program while half served as a control group.

The regular classroom teachers served as change agents for the classroom based component. They received general behavior management consultation and were trained to teach the social skills curriculum, which they taught two to three times per week. The curriculum focused on emotional competency, friendship skills, self control and problem solving. Supervised play sessions were conducted weekly with model peers and target students to help students generalize social skills in a setting with classroom peers. Academic tutoring in reading was also provided at a frequency of 3 times per week.

A supplemental enrichment program was held in a clinical setting outside of school each week for two hours. Target children participated in friendship groups with a social skills focus while parents received education designed to enhance family-school relationships, parental self control, support of children's behavior and to improve parent-child interactions. Parents and children then received a 30 minute parent-child session where skills were practiced and feedback was provided. In addition to the clinical component, a home visit was provided every other week

on average. The average attendance in groups was 71% with 81% of parents receiving at least 6 home visits.

Outcome measures included Parent-Child Interaction Tasks, teacher ratings, peer ratings, observational data and child social cognition measures. Several measures were taken at post test only for both groups. They include peer nominations and direct observations. One of the three peer nomination measures (peer social preference) was significant in favor of the intervention group ($p = .02$) and another (peer nominated pro-social) bordered on statistical significance ($p=.06$). Two out of three observation measures showed significant improvement for the intervention group, including authority acceptance or general quality of aggression ($p=.004$) and time in positive peer interaction ($p = .02$).

A number of measures were taken both pre and post test in the treatment and control groups. They include parent and teacher ratings, reading achievement scores, and child social cognition measures, in which social scenarios were presented and the child's response was rated . Significant differences were found between groups on 2 out of 8 rating scales and 2 out of 3 academic measures ($p<.01$). On social cognition measures, target children improved significantly on four out of five scales: Emotion recognition ($p<.001$), Emotion coping ($p<.02$), Social Problem Solving ($p<.002$), Hostile Attributions (ns), and Aggressive Retaliation ($p<.04$). Several other outcome measures were used, including measures of parenting behavior (discipline and involvement), parent social cognition (attitudes, values and change) and parent child interaction. Approximately one-third of these measures indicated significant improvement for the intervention group parents (Conduct Problems Prevention Research Group, 1999).

McConaughy, Kay and Fitzgerald (1998; 1999) conducted a social competency program

with 36 first grade students at risk for emotional disturbance in 13 separate classrooms during the first year of the study and continued the intervention during second grade in 16 separate classrooms. The program consisted of whole class social skills instruction provided by classroom teachers at a frequency of two lessons per week using curriculum covering topics such as communication, personal skills, interpersonal skills and response skills. The program also included a unique team component consisting of teachers, facilitators, and parents where each target student was given individualized academic, behavioral, and social goals with action plans for school and home. These parent teacher action research (PTAR) teams met monthly on average and liasons met with parents between meetings to provide additional support. The program was designed with a comparison group of 46 students that received only whole class social skills training without the PTAR component.

The program was conducted for two full years. Both rating scales and direct observation forms were completed during the fall and spring of each year, with the first data collection providing a baseline at pre-treatment. Measures included the Teacher's Report Form (TRF; Achenbach 1991b), the Social Skills Rating Scale (SSRS; Gresham & Elliott, 1990), the Child Behavior Checklist (CBCL; Achenbach 1991a) and the Direct Observation Form (DOF; Achenbach, 1986). Significant time effects were noted for first and second year ratings, with scores dropping between pre and post test for both groups on the majority of the rating scales. There were not significant time effects for direct observations, however, there were significant group by time interactions at one year post test with PTAR students both decreasing problem behaviors and increasing time on task and social skills only students either experiencing no change or increasing in problem behaviors. Additional group by time interactions were seen on

only two specific subscales at year one post test, but on a number of scales, including the CBCL, the SSRS Parent measure and two Internalizing subscales at year two post test, with significant improvement for the PTAR students between pre and post intervention ($p<.05$) (see Table 3).

Table 3

Comparison of PTAR and Social Skills Only Groups (SS) at Year One Post Test and Year Two Post Test (McConaughy, Kay & Fitzgerald, 1998; 1999)

Rating Scale	PTAR vs SS Year 1	PTAR vs. SS Year 2
TRF - Total Problems Scale	p=.02* (Extern.**)	p=.03* (Intern. **)
TRF - Adaptive Functioning	ns	p=.01*
CBCL - Total Problems Scale	p=.058	p=.03**
CBCL - Total Competence	ns	p=.025**
SSRS - Teacher - Total Problems	p<.05*	ns
SSRS - Teacher - Total Soc. Skills	p=.0001*	p=.0002*
SSRS - Parent - Total Problems	p=.02*	p<.05* (Extern. **)
SSRS - Parent - Total Social Skills	ns (Cooperation**)	p=.017**
DOF - Total Problems	p<.05**	ns (Internalizing **)
DOF - On Task - Classroom	p<.03**	ns

Note. * = Significant time effect only ** = Significant grp x time interaction

The results suggest that groups that received the Parent Teacher Action Research approach had better outcomes than those groups receiving social skills only after the second year

of the program, especially on parent measures. however it is important to note that both groups improved between pre and post test on the majority of the measures. One disadvantage of the study design is that comparisons cannot be made to a true control group, receiving no intervention.

Summary

In summary, the five studies evaluating social skills interventions in regular classroom settings, without parent training components, including pre-school, elementary grades and the combination classroom, appear to be at least mild to moderately successful. Outcomes varied across measures in each study, with a majority of significant results in some studies (Flicek et al., 1996; Tankersly & Kamps, 1996) equally as many statistically significant and not- significant results in one study (Serna et al., 2000), slightly less than half as many clinically significant results in one study (Kamps et al., 1999) and only one fourth of students demonstrating significant change in one study (Serna et al., 2002) .

Using regular classroom teachers as change agents appears to have advantages and disadvantages. Three studies (Serna et al., 2000;2002; Flicek et al.,1996) specified that teachers in the study incorporated incidental teaching in the intervention, which is a well supported generalization technique. One drawback was encountered in the Kamps et al. (1999) study, in the lack of consistent implementation among different teachers, partially due to diverse classrooms and schools receiving interventions.

All studies based in regular classrooms with parent training components reported some significant findings. The Conduct Problems Prevention Research Group (1999) reported few significant changes based on parent, teacher and peer ratings, however significant results were

reported on the majority of social cognition measures and observations. Weekly teacher ratings in the Kamps et al. (2000) study did not significantly change over time for either group, but observational measures were reported as significantly different between groups over time. Significant improvement in academic engaged time for treatment groups as well as significant differences over time on rating scales for target students were reported in the studies using the First Steps to Success (Walker & Kavanagh, 1998; Golly, Stiller & Walker, 1998; Golly et al., 2000). Significant time effects for both groups were seen on the majority of measures at year one post-test and significant group differences in favor of the PTAR group were seen for direct observations at year one post-test and approximately half of the rating scales at year two post-test (McConaughy, Kay & Fitzgerald, 1998). Most of these studies employed control group designs which supports the significance of the outcomes.

Special Education Setting/ Small Group Social Skills Instruction

Students classified with emotional or behavioral disorders typically receive services in the special education setting part of the time and participate in the regular education setting the remaining time. The special education setting is designed to facilitate individualization so students receive instruction that is specific to their individual needs. Social skills instruction in this setting is frequently conducted in small groups, where several special education students receive instruction simultaneously or occasionally with peer models from the regular education setting. Small group settings may also be used for students identified as at risk, where these students are pulled out of their regular classroom to receive social skills instruction.

One advantage of providing social skills instruction in the special education setting is the opportunity for individualization due to a significantly smaller class size than in the regular

education setting. A challenge in this setting is providing sufficient generalization of skills from the special education classroom to the regular education classroom. In a study by Herring and Northrup (1998) both individualization and generalization were emphasized in the same intervention. The authors conducted a single subject study with a second grade student with a behavior disorder. The student received individual social skills training as well as supervised practice opportunities in a small group setting with four peer mediators from his regular classroom serving as positive behavior models. The mediators also provided prompts to the student in a variety of natural settings, including the playground.

The student received interventions specific to the social skills deficiencies and competing behaviors he exhibited, such as skills for cooperating with peers and using an appropriate tone of voice rather than whining and complaining. A multiple baseline design was used with a variety of intervention strategies including prompting, response cost, and a group contingency. During the initial baseline, data were collected and peer mediators were trained. This was followed by the direct social skills instruction phase where the skill was introduced along with discussions, modeling, reciting, practice, and role play. A generalization phase followed with peer mediators and the teacher providing prompts in the regular education setting. In all treatment phases a small group activity was used to provide the student with opportunities to practice the skill with his peer mediators. A response cost component was implemented in the small group activity during the second phase to correct competing behaviors. A return to baseline followed the generalization phase where all treatment components were withdrawn.

The next phases of treatment each provided variations of the intervention strategies, with a phase of peer prompting during the small group activity, followed by a phase where a group

contingency was in place during the small group activity and then a return to baseline. The last treatment phase consisted of a group contingency implemented during recess. The three week follow up phase was conducted last where all treatment components were withdrawn. The entire process was conducted over 34 sessions.

Direct observations were conducted in three settings: small group setting, recess and the classroom. Positive behaviors, such as appropriate tone of voice, as well as negative behaviors, such as refusal to cooperate, were tallied. In the small group setting, the full spectrum of intervention strategies was used and the results were observed following the baseline and skill instruction phase. During baseline and skill instruction phases, inappropriate behavior averaged 11 incidences and 10 incidences respectively. Positive behavior averaged 1 and 3 instances per session during baseline and social skills instruction respectively.

Significant differences were seen when the teacher and peer prompts were added with response cost strategies during the third phase. Inappropriate behavior dropped to 5 incidences per session and appropriate behaviors increased to 7 per session. During the second baseline, inappropriate behaviors returned to 11 on average, but appropriate behaviors were maintained at 5. The peer prompt only phase produced no changes in behavior, with 9 incidences of inappropriate behavior and a return to 7 appropriate behaviors on average. Group contingencies resulted in the most noticeable differences, with inappropriate behaviors dropping to 1 on average per session and appropriate behaviors increasing from 9 per session to 17 per session.

The setting in which generalization strategies were applied appeared to play a role in the behaviors exhibited. During the phase where the contingency was applied only at recess, positive behaviors in the small group session declined from 20 per session to 4 per session and

inappropriate behaviors returned to an average of 4 per session. A reintroduction of the contingency in the small group setting led to noticeable improvement in that setting, similar to the previous values. The variable of setting was also noticeable in the observation results during recess. Positive behaviors (M=1) did not surpass inappropriate behaviors (M=7) in this setting during any of the intervention phases until the group contingency was applied at recess. During this phase, appropriate behaviors increased (M= 4) and inappropriate behaviors decreased (M=1) throughout the intervention phase as well as two subsequent baseline sessions (Herring & Northrup, 1998).

The intervention was not conducted in the classroom directly, however, there were noticeable increases in appropriate behaviors from an average of less than 2 prior to the introduction of the recess contingency to an average of 7 appropriate behaviors during the recess intervention as well as the subsequent baseline phases. This would suggest that generalization between settings is possible and training may have been carrying over into the classroom. A potentially critical factor is the use of teacher prompts in the classroom setting to facilitate generalization. The return to baseline and follow-up data, however, indicate that results were not stable in this or the other settings. One limitation of the study is that there were no other measures, such as rating scales, to support the results or to indicate if any stable improvement was perceived by teachers or staff.

A second study applying both individualization and generalization procedures as part of social skills instruction in the special education setting was conducted by McMahon, Wacker, Sasso and Melloy (1994). These authors conducted a study of weekly, small group, social skills training sessions in the special education setting as part of a more comprehensive intervention.

The three participants in the study were classified with behavioral and learning disorders. Each had social skill goals as part of their Individual Education Plan (IEP) and participated in weekly social skills groups. Special education teachers trained students in two skill areas: to initiate positive social behaviors and to sustain appropriate behaviors with peers or in the classroom. The students each participated in the general education setting during academic as well as non-academic activities.

The intervention consisted of three phases of training plus withdrawal, post-training and maintenance phases. During the first phase, students received verbal reinforcement for performing skills in the special education setting and identified regular education students they felt they could practice their social skills with during recess. During the second phase, students received tangible reinforcement for performing skills in the regular education setting, as tracked using self reports and teacher observations. Students were required to practice skills with peers they had nominated in phase one. The third phase of treatment differed in that a non-disabled peer was assigned by the teacher, rather than nominated by the student, to practice the skills with the student on the playground and reinforcement was provided for both students. The treatment phases were followed by a withdrawal phase where all treatment components were removed. During the post-training phase, generalization strategies were resumed, such as peer assignments and tangible reinforcement, but no formal skill instruction was provided. Post-training conditions were also present during the final, three month maintenance phase.

All students had specific training criteria as part of their IEP goals, including performing the skills at 100% accuracy during the training sessions and exhibiting appropriate social behavior, at a rate of 85% or higher, on two consecutive playground observations. Duration

recordings of cooperative play were conducted on the playground. The average duration of cooperative play at baseline did not exceed 95 seconds in a 10 minute period for any student, indicating around 15% of cooperative play at best. The criteria of 85% or higher was met by all students during either the second or third phase of training. Training phase three was not required for the two students who met criteria during the second phase of the intervention.

Observations were conducted in the regular classroom and on the playground to assess generalization of the social skills being taught. The results of behavioral observations in the recess and classroom environments indicated that all students increased their level of appropriate behaviors and decreased their level of inappropriate behaviors. Recess observations indicated that negative behaviors were occurring at an average of 3 behaviors for student 1, 10 negative behaviors for student 2 and 8 behaviors per observation session for student 3 during baseline. Negative behaviors dropped to an average of 1 negative behavior across all three participants during the intervention. The three students emitted an average of 1.3 positive social behaviors at baseline and increased to an average of 5 behaviors during training.

The behavior of students during the withdrawal phase suggest that intervention effects were not durable. A dramatic return to baseline levels occurred for two students and one student experienced only a mild decline in appropriate social behaviors. Once the generalization components were re-introduced in the post-treatment phase, appropriate behaviors increased significantly across all three participants, with stabilization of inappropriate behaviors at or below 1 on average and each participant maintaining an average of approximately 3 behaviors per observation session. Generalization strategies were continued in the maintenance phase and no further removal of all treatment components was attempted during the study.

Classroom observations were used to measure the duration of on task-behavior. The average duration of on-task behavior for all three students in the classroom increased from a baseline of 119 seconds to an average of 459 seconds per observation session. Rates declined towards baseline levels during the withdrawal phase and then resumed treatment levels during the post-treatment and maintenance phases. Teachers also rated the three students on a survey type form, indicating on a scale of 1 to 9 whether the student was having a "bad" (1) or "good" (9) day. The students received ratings that spanned a 4 to 6 point range during intervention, with no student receiving ratings above an 8 and one student receiving no ratings above a 5. Mean ratings for students were between 2.7 and 5.5. Teachers' ratings did not demonstrate a trend in improvement for any of the three students (McMahon et al., 1994).

The results of the intervention indicate that for the most part, generalization across settings was successful as long as generalization strategies, such as peer feedback and behavioral incentives, continued to be used. The main inconsistency in results is that of the teacher ratings, for which there was no reported improvement. A relevant finding is that the teacher responses towards the target students were tracked on the playground and show that there was no significant increase in positive feedback or praise during intervention. Rates of praise were consistently very low, with much higher rates of corrective feedback. One student received no observable teacher feedback throughout the study. Although feedback from the regular education teachers was not a specified component of this intervention, it is often used as a behavioral strategy and could impact training outcomes.

Special education interventions are designed to target students on an individualized basis as seen in the previous studies. Interventions with students at risk for emotional or behavioral

disorders are typically less individualized, but may be conducted in small group settings similar to those conducted in special education and may include treatment specific to the social deficits and excesses of the students. Bienert and Schneider (1995) conducted a small group social skills program with 78 sixth grade students identified as at risk as either "Aggressive-Disruptive" or "Sensitive-Isolated." Treatment was matched to the specific social skills deficits exhibited by the students and consisted of ten, one hour, weekly sessions led by psychology professionals and graduate students. Two separate curriculums were used, one focusing on self-control and empathy for the Aggressive-Disruptive group and the other focused on approaching others socially for the Sensitive-Isolated group. A behavioral component, using token reinforcement and response cost, was used to increase participation and manage behaviors in the group sessions.

The treatment design involved an immediate treatment group and wait-list control group. There were also two cross-over treatment groups, one of Aggressive-Disruptive students which received the curriculum package designed for Sensitive-Isolated students and one of Sensitive-Isolated students who received the Aggressive-Disruptive curriculum. Pre and post treatment measurements were conducted for all four treatment groups using socio-metric peer ratings as well as rating scales. Socio-metric scales included the Peer Rating of Likeability Scale (PRLS) which assessed peer status and the Minnesota Revised Class Play (MRCP) obtaining peer nominations for aggressiveness as well as social isolation or withdrawal. The Perceived Self Confidence Scale (PSCS) was used to assess self perceptions of competence. Follow-up measures were also taken during the subsequent school year, 6-10 months following treatment.

Results indicated that peer ratings of likeability increased significantly ($p<.0001$) between

pre and post treatment for both the Aggressive and Isolated target groups who received deficit-specific treatment. Likeability also increased for the Aggressive students receiving cross-over treatment ($p<.01$). No significant change was seen for Isolated students receiving cross-over treatment. Likeability ratings continued to increase for Aggressive students at follow-up, with a full standard deviation difference between pre treatment and follow-up. Follow-up scores for Isolated students showed maintenance of post-treatment effects on two scales and a slight decline on the remaining measures.

Peer-rated aggression declined for only the Aggressive target students receiving deficit specific treatment, with significant differences between pre and post-treatment ($p < .05$) as well as follow-up ($p<.01$). Similarly, peer nominations of social withdrawal decreased significantly from pre to post treatment for Isolated target students receiving deficit specific treatment ($p < .0001$) with maintenance of changes at follow up. Positive ratings of social self-perception increased significantly between pre and post treatment for both Aggressive students ($p < .0021$) and for Isolated students ($p < .0001$) with Aggressive students continuing to improve at follow-up and Isolated students dropping slightly. An interesting finding on this measure was that Isolated students receiving cross-over treatment also had a significant increase in social self-perception ($p<.005$).

The results of the study suggest that, although there were some cross-over effects, deficit specific skills instruction is important. The significant results obtained on the sociometric ratings are unusual considering that sociometrics are typically less sensitive to treatment effects, especially immediately following treatment. The follow-up ratings indicate that many of the results did endure over time based on peer perceptions. Self-reports also indicated that students

perceived themselves to improve as a result of treatment. It is unfortunate that no other measures, such as observations or teacher ratings, were used to evaluate the outcomes.

The approach of developing groups specific to the classification or skills deficits of the students was also taken in a study by Lochman, Coie, Underwood and Terry (1993). These authors worked with 52 fourth grade students identified as aggressive and/or socially rejected . The study design included four conditions with two intervention groups, one for students identified as aggressive and rejected (ARI) and one for students who were rejected only (RI). Two control groups were set up, one of aggressive/rejected students (ARC) and one of rejected only students (RC). The intervention group students received social relations training consisting of social problem solving, playing cooperatively, joining in groups, and dealing with negative feelings. The instruction was presented in 26 individual sessions and 8 small group sessions at a frequency of 2 times per week. Students were given specific therapeutic goals as well as behavioral contracts to support change. The organization of the units was adjusted for the type of behavioral excesses or deficits present for the students. The same basic elements were presented to each intervention group with tailoring of the emphasis, examples and approach of the topics depending on the student characteristics. A unique intervention strategy was used in that students were video taped during group instruction and given feedback on their enactment of the skills.

The results were evaluated using teacher checklists, peer nominations, and self reports. The measures were administered at baseline in the spring of the third grade year and at post test in the spring of fourth grade. According to data from teacher checklists, the aggressive-rejected intervention group was rated as having fewer problems in the areas of aggression and rejection

than the aggressive-rejected control group ($p < .03$), but the rejected only groups were not significantly different at post test on these two scales. Significant differences in academic gains were not found for either intervention/control group comparison. Peer ratings indicated that social acceptance of the aggressive-rejected students in the intervention group was significantly higher than the control group at post test ($p = .04$), but no significant changes were seen between rejected only groups. No significant differences were found for social preference, aggression or prosocial nominations. Ratings of self-worth decreased significantly for the intervention groups and increased for the control groups. The intervention appeared to have at least temporary negative effects on self-esteem.

Follow up ratings were conducted one year after the post test, in the spring of fifth grade. On two out of four teacher scales, aggressive rejected students who received the intervention were rated as less aggressive and as having more prosocial skills than control group students ($p < .03$). The long term impact of the intervention on self-worth ratings differed from the initial post-test findings in that both groups of intervention students increased slightly in their self-worth perceptions and control group students dropped somewhat. Differences were not statistically significant, but the trend would suggest that students who received intervention at least did not continue to decline in self-concept from post-test ratings and if anything received long term gains over control group students (Lochman et al., 1993).

The manner in which results were presented in the study is disadvantageous in that pre and post values could not be directly compared due to reporting of post test and follow up means only. On most of the scales, there were at least trends toward improvement for the intervention groups between post intervention and follow up. Only on the self-worth scale were intervention

students found to be worse than control group students at post-test, and it was demonstrated that this trend reversed by follow up. It is important to note that all of the students involved in this study were Black and most were of a low SES status, thus, the results may not generalize to other populations.

Small group interventions including parent training

Social skills interventions with students in a small group setting may also be supplemented with parent training components. This component impacts the overall treatment in that parents may be trained to facilitate generalization of social skills in a natural environment outside both the small group setting as well as the school setting as a whole. In this scenario, parents take on a role similar to the teacher, in that they are not teaching the skills directly, but are reinforcing their use in the natural setting. This would ideally provide additional reinforcement of the skills being taught and more opportunities for practice and feedback.

Incorporating both home and school generalization strategies is an ideal approach, such as the use of parent training as well as teacher and/or peer involvement. A study incorporating a parent component with the addition of peer models was conducted by Middleton and Cartledge (1995). The authors conducted small group social skills instruction with five students identified as high risk for aggression in first and second grade. The target students received social skills training from professional staff in groups of three, consisting of a target student and two peers. The groups incorporated modeling of skills, role plays, practice, coaching, feedback and reinforcement. Their parents received a 90 minute training session as well as regular home communication to provide parent encouragement and reinforcement of skills. Teachers were also involved in training and received information packets on the social skills curriculum to be used

in the small groups as well as a question and answer session with the treatment providers.

The study was conducted as an ABABA design, starting with baseline, followed by the first phase of treatment: 8 social skills groups, one parent training session, home communication through weekly phone visits and frequent notes home describing skills and instructions for encouraging practice and reinforcement of skills at home. The first phase of treatment was followed by the withdrawal of treatment and then the reintroduction of treatment. The second phase of treatment included social skills groups and home communication plus weekly classroom coaching sessions were added. Instructors observed each child in the classroom and provided prompting, feedback and reinforcement during naturally occurring "teaching moments" to provide generalization of skills taught to the regular education setting. Teachers were asked to provide coaching and reinforcement of skills during this phase as well. Finally, treatment was withdrawn again during the follow-up phase.

Aggressive behaviors were observed and recorded during each phase of the study. The average number of aggressive behaviors among the first four students at baseline was 4.86 per 30 minute observation. The average number of aggressive behaviors during the first phase of treatment was 1.67, indicating more than 65% reduction. Students 1, 2 and 4 received a second baseline phase, all of whom experienced an increase in aggression at a rate close to the first baseline. Student 3 was placed in the special education setting during his second baseline phase in which he did not exhibit any aggressive behaviors. He did not receive a second phase of treatment and did not exhibit any aggressive behaviors during follow up. The fifth student entered the study during the second baseline. The average number of aggressive behaviors during the second baseline for students 1, 2, 4, and 5 was 4.1 aggressive behaviors in a 30 minute

observation period, indicating a return to pre-intervention levels. During the second phase of intervention, the average behaviors of the four students dropped to .82 per observation, indicating an 80% reduction from baseline. All students received at least one or two weeks of follow up observation during which no interventions or coaching were provided. There were no aggressive behaviors observed for students 1, 2, 3 or 5 and only one aggressive behavior for student 4 (Middleton & Cartledge, 1995).

The ABABA design of the study provides information in assessing the impact of intervention strategies as well as enduring effects of such interventions. Based on the results it appears that the peer based social skills groups and parent involvement in phase one of the intervention were significant in reducing aggressive behaviors while in place, but did not lead to lasting improvement. The second phase of treatment, including classroom coaching sessions and other generalization strategies demonstrated a higher level of effectiveness in reducing aggressive behavior as well as at least some short term enduring effects. The main limitation of the study was the short term follow up. Several students received only one follow up observation which does not allow for conclusions to be drawn as to the pattern of behavior. Another limitation is the lack of complementary measures, such as rating scales, to support the observational data.

A study using a control group design combining small group instruction and parent training was conducted by Braswell, August, Bloomquist, Realmuto, Skare and Crosby (1997). A sample of 309 first through fourth grade students identified as at risk due to elevated hyperactivity and disruptive behaviors received a two year social competency program. The program consisted of a comprehensive approach, including social skills training, teacher education, classroom behavioral management, parent education and home-school collaboration.

The study design consisted of the multi-component intervention and an information/ attention control (IAC), in which parents and teachers received education through information sessions, but no direct intervention was provided for the students. Schools were randomly assigned to participate in either the intervention or IAC condition.

Social skills groups consisted of 6 to 8 students and were run by school psychologists, for a total of 18 sessions during year one and 10 sessions during year two. The curriculum was based on cognitive behavioral therapy methods and included problem solving, management of thoughts and feelings, and conflict resolution. Training strategies such as didactic instruction, role plays, and modeling were used to teach the skills. Behavioral strategies such as point systems, positive reinforcement and response cost were employed during group sessions.

Teacher training was provided through 10 hours of in-service during the first year and six hours the second year. During the first year, teachers received manuals detailing each of the social skill areas and were trained through didactic instruction, modeling and role plays. They also received information on behavior disorders and their treatment, including methods of behavioral management that could be applied in the classroom. Optional topics were presented the second year, such as home-school communication, conflict resolution and self esteem.

Parent training was also conducted both years, with 9 two hour education sessions the first year and 6 sessions the second year. Training included parent manuals, didactic instruction, modeling and role plays. Parents were also given homework assignments to practice the skills with children at home. Approximately 75% of parents attended at least 2 hours of training the first year, but only 27% attended at least two hours the second year. Less than 20% attended the full training during the first year and about 10% attended fully the second year.

Results were measured with rating scales from children, parents and teachers using the Behavioral Assessment System for Children (BASC; Reynolds & Kamphaus, 1992) as well as the Conners Teacher Rating Scale (Goyette et al., 1978). Parents and teachers also rated students on the Problem-Solving Rating Scale (PSRS; Bloomquist, 1996) and observations were conducted in the classroom. Assessments were obtained at baseline and at three additional points during the course of the study. The teacher ratings on the BASC and Conners were not significantly different between pre test and post test for either the intervention or control groups. The parent ratings on the BASC indicated that both groups had a slight decrease in internalizing and externalizing behaviors, but the change was not statistically significant . The child ratings on the BASC demonstrate statistically significant improvement for both groups over time.

Problem-solving ratings changed significantly over time, but not by condition. Both groups improved, as rated by parents and teachers in their utilization of problem solving abilities, and although the intervention group improved to a slightly greater extent than the control group, based on pre to post test comparisons, the difference was not statistically significant. Results from observational measures indicated a decrease in Interference behaviors over time ($p=.033$), but there were no differences based on condition (Braswell et al., 1997).

Findings indicate that both groups experienced a mild improvement over all. Without a true control group it is difficult to determine whether improvement was a result of the intervention or other factors, such as maturation. Both groups essentially received intervention components since teachers and parents received training. The main difference was the lack of direct social skills instruction in the IAC group.

A program similar to that of Braswell et al. (1997), but employing a no treatment control

group, was conducted by Vitaro and Tremblay (1994). It also consisted of a multi-component social skills intervention utilizing a small group setting and a parent training component. The two year study was conducted with 8 and 9 year old boys at risk for hyperactive-aggressive behavior based on kindergarten ratings and randomly assigned to treatment (N=46) or control groups (N=58). The treatment consisted of social skills training in a small group setting with equal numbers of pro-social peers. Students received nine weekly sessions the first year on pro-social skills, such as joining in with others and giving compliments and ten sessions focusing on problem solving and self-control the second year. The program included parent training conducted in the home setting with a range in the number of sessions based on parent mastery, averaging 17 sessions over the two year period. Sessions included topics such as behavior management and problem solving strategies. Parents and teachers were both informed of the skills taught and encouraged to reinforce them in the natural setting.

Three rating scales were administered annually for three years following the program to assess for preventative effects of the program. The Social Behavior Questionnaire (SBQ) was completed by the teachers each year to assess aggressiveness. Peers in the target students' classrooms completed the Pupil Evaluation Inventory (PEI) to nominate students using behavior descriptors in categories such as aggressive-disruptive, socially withdrawn and likeable. The third rating scale used was a student self-rating using the Self-Reported Delinquency Questionnaire, which asked about involvement in delinquent behaviors such as vandalism and stealing.

The overall effectiveness of the prevention (PV) program was compared to the outcomes of the no treatment control group (CO). Aggression ratings on the SBQ and PEI during the first

and second years of follow up measurement, when subjects were 10 and 11 years old, revealed no statistically significant differences (p=.06-.10) between program and control students. During the third year follow up, however, the difference between the PV and CO groups was significant ($p < .05$) with a moderate effect size (see Table 4). Student self reports of delinquency did not differ at a statistically significant level between treatment and control groups, however, there was a meaningful difference in that a significantly lower percentage of program boys reported having been involved in delinquent behavior at age 12 (3% stealing bicycles, 19% stealing objects under $10 and 14% committing vandalism) compared to control group boys (21% stealing bicycles, 52% stealing objects under $10, and 32% committing vandalism).

Table 4

Annual Differences Between Prevention Program and Control Groups Following Treatment

Year/Age of	SBQ - Aggressiveness		PEI - Peer Nominations	
Follow Up	Significance	Effect Size	Significance	Effect Size
Year 1 - Age 10	$p < .10$	.22	$p = .06$	.54
Year 2 - Age 11	$p = .06$	.27	ns	.26
Year 3 - Age 12	$p < .05$	.39	$p < .05$	.58

Note. Adapted from Vitaro and Tremblay (1994).

The outcomes of the prevention study suggest that meaningful differences may be apparent over time. This length of follow up is unique in studies of this nature and supports the need for more longitudinal outcome studies. One issue of concern is that the students were initially assessed in kindergarten, but did not receive treatment until 2nd grade. First grade ratings were taken which indicated that 73% of students were still rated above the cut off level for

aggressiveness-hyperactivity. This level was consistent between the PV and CO groups, so although approximately one fourth of the sample no longer met at risk criteria, it was uniform across groups.

Summary

The four studies conducting small group interventions with students classified with or at risk for developing emotional or behavioral disorders were at least mildly to moderately effective. Of the two studies conducted as ABABA designs, students who received instruction in the special education setting were observed to significantly increase their time on task in the classroom (McMahon et al., 1994) and the student in the single subject design increased his appropriate behaviors significantly while in the treatment setting (Herring & Northrup, 1998). Of the two studies conducted with control groups, comparing matched and un-matched treatment, approximately half of the observations and rating scales were significant for aggressive rejected students participating in the intervention compared to students in the control group in Lochman et al. (1993). The outcomes for aggressive or isolated students receiving deficit specific treatment were significantly better than the outcomes for the control students (Bienert & Schneider, 1995).

The main limitation of results in the small group setting is related to generalization. Findings of the McMahon et al. (1994) study indicate that student levels of negative and positive social behaviors as well as on-task behavior returned to baseline levels when treatment was withdrawn. The return to pre-intervention levels of behavior with the removal of treatment contingencies was also seen in the single subject design (Herring & Northrup, 1998). Long term follow up, however, may be important to consider when evaluating generalization effects. In

Lochman et al., (1993) aggression was reduced and social skills increased significantly for students receiving the intervention compared to controls at one year follow up ($p < .03$). Students receiving intervention in the Bienert and Schneider (1995) study were stable over time compared to the control group in terms of peer rated likeability and social self-perception, with students continuing to improve at follow up.

The effectiveness of social skills instruction including a parent training component, based on the results of studies conducted in small group settings, appears to be mildly effective overall. In the study using an ABABA design, a significant decline in aggressive behavior as measured by classroom observations was seen, especially with the application of generalization strategies in the classroom (Middleton & Cartledge, 1995). Social skills training with the addition of home based, intensive parent training was not reported to be significant at one or two year follow ups, but the treatment group displayed significantly fewer aggressive/disruptive behaviors than control group students during third year follow up (Vitaro & Tremblay, 1994). Braswell et al. (1997) reported results that were not significantly different between a treatment group receiving a multi-component social skills and parent training program compared to an information-attention control group. One challenge with providing parent training as a treatment component is that of low attendance and variability with involvement from parents.

A note regarding the three programs conducted in small group settings with parent components is that the study reporting the most significant differences between pre and post test was the study with the shortest intervention phase. Middleton and Cartledge (1995) conducted a 4 week intervention, including 12 sessions, and the others conducted interventions that spanned 2 years, with 18 sessions the first year and 10 sessions the second year in one study (Braswell et al.,

1997) and 9 sessions the first year and 10 sessions the second year in the other study (Vitaro & Tremblay, 1994). Essentially the two studies that provided intervention over a longer period of time did not demonstrate any greater gains, and if anything fewer gains, than the study providing short term intervention. The frequency or intensity of the intervention may be a factor, since the short term study provided several sessions per week and the long term studies provided less than one session per week on average.

Specialized and Alternative Educational Settings

The most intensive setting for students with behavioral disorders is a self-contained unit, alternative setting or special treatment classroom, where the students with high levels of problem behavior and specialized needs are served together and spend little or no time in the regular educational setting. Blake, Wang, Cartledge and Gardner (2000) conducted a study of social competency training in a self-contained classroom with 6 students, ages 9 to 13 who were attending a school for students with Emotional Disorders. This study is unique in that the three older students served as peer instructors to the three younger students. The peer instructors received 30 minutes of social skills teaching instruction daily. The other students received an hour per day of peer-directed social skills instruction including practice opportunities using informal games and feedback sessions. Skills were encouraged and reinforced throughout the school day by classroom staff.

The peer trainer sessions included the use of folk tales to present the social skill, discussion of the story and the skill, practicing the skill and the use of home work assignments. The peer trainer was given a format to introduce skills, model them and then practice them with their assigned student. Skills taught included conversations, expressing feelings, dealing with

conflict and managing anger. The first 30 minutes of the session was used for instruction and the second 30 minutes was set aside for practice activities. Praise statements were emphasized for both the trainer and trainee to use to reinforce the correct use of the skill.

Both the student trainers and the trainees were observed at baseline, throughout the training in socially interactive settings and during a follow up after the instruction had ended. Observations were conducted for 20 minutes each in three different school settings, including gym, the lunch room and the home economics room. Table 5 depicts the average change in verbally or non-verbally abusive (VNA) or aggressive behaviors and verbally or non-verbally supportive (VNS) or pro-social behaviors. Behaviors were measured using frequency counts during 3 one-minute intervals during each observational setting.

Table 5

Peer Trainer and Student Trainee Rates of Aggressive (VNA) and Pro-social (VNS) Behavior

Subjects	Baseline		Intervention		Follow Up	
	Mean VNA	MeanVNS	Mean VNA	Mean VNS	Mean VNA	Mean VNS
Trainers	6.08	.33	1.24	4.66	.866	5.33
Trainees	4.84	.46	1.09	4.87	.04	4.66

Note. Data adapted from Blake, et al. (2000)

The results indicate that the training resulted in significant changes for both the trainers and the trainees, with aggressive behaviors decreasing with intervention and maintaining decline through follow up. Pro-social behaviors were observed at a significantly higher rate with intervention and also maintained through follow up. This is especially meaningful considering that the students selected for the role of trainer were not the most likely role-models, but the

behavior disordered students with the highest pre-intervention levels of aggression. The trainers experienced greater gains in comparison to trainees, although differences were not statistically significant.

In a similar study by the same authors, 12 students with the poorest social skills, as rated by teachers in the self contained school, were selected for participation. The three students of this sample with the strongest social skills were chosen to serve as peer trainers. Only the behaviors of the three student trainers were observed and measured. The main difference in this study was that there were two intervention phases as well as a follow up phase. The first phase included daily social skills instruction, informal games and feedback sessions and was taught by the teachers. The second phase was taught by both the teacher and three behavioral disordered students who demonstrated the highest skill level in the class, and who also served as the subjects of the study. The students were trained individually following the teacher presentation of the skill. They led the class in a review of previously taught skills with role plays, practice and feedback sessions. Follow up consisted of one week of daily observations during classroom activities with no intervention.

The verbally supportive or pro-social behaviors of student trainers improved as a result of intervention phase one, improved even more as a result of their involvement in intervention phase two and continued to improve when intervention was withdrawn. Positive as well as negative behaviors were measured using six 1 minute time samples per student during an 18 minute observation. The group average rose from an observed 2.2 positive behaviors per student at Baseline to 3.48 positive behaviors during Phase 1, 4.5 behaviors during Phase 2, and 6.02 behaviors during Follow-up. Negative behaviors decreased from 4.53 behaviors at Baseline to

1.78 negative behaviors at Phase 1, .28 behaviors at Phase 2, and .03 behaviors at Follow-up (Blake, et al., 2000).

Social skills instruction involving students with behavior disorders as social skills trainers appears to have significant results. Both trainers and trainees with behavior problems improved over time in the study measuring both types of participants. The behaviors of the student trainers appears to be distinctly related to the intervention provided, whether teacher directed or teacher and student directed, in the study comparing types of interventions. Trainers experienced more benefit related to their involvement compared to the teacher only intervention. It is unfortunate that trainee results were not compared as well in the latter study to determine the impact of the different intervention agents on trainees.

Specialized settings including parent training

Parent training can be incorporated into programs conducted in specialized or alternative settings. Programs in these settings may also target students considered at risk for emotional and behavioral disorders, although these types of settings are commonly designed for meeting the needs of students classified with behavioral disorders. One program including parent training as well as targeting at risk students was conducted by August, Realmuto, Hektner and Bloomquist (2001). A total of 245 kindergarten and first grade children, identified as aggressive and disruptive, were involved, with roughly half participating in the program and half in the control group. The program included a six week summer school with social competency training during one hour of the day during two consecutive summers. Behavioral strategies, such as point systems and daily report cards, were used to reinforce skill acquisition. A peer mentor program was used to provide additional opportunities for skill acquisition.

Several intervention components were employed during each of the two school years following the summer programs. Consultation was provided to regular education teachers in the areas of individual behavior plans, classroom accommodations and teaching life-skills curriculum. One third of program children also received individualized training from program staff in social and emotional areas over an 18 month period. Parent education took place during the school year as well, with12 parent training sessions per year. The sessions were structured to include separate parent and child groups plus parent child interaction training following the group modules. Parent attendance varied, with at least two thirds of parents attending at least one third of the groups. A home based component was also added for the purpose of supporting and strengthening the family. Case managers were assigned to help each family set goals, access resources in the community and monitor goal achievement.

Measurements were taken at the end of each school year starting with the baseline prior to the first summer program and the two subsequent years. Several assessments were conducted using instruments such as the, Teacher and Parent Observations of Classroom Adaptation - Revised (TOCA-R; POCA-R; Werthamer-Larsson, Kellam & Wheeler, 1991), the Behavioral Assessment System for Children (BASC; Reynolds & Kamphaus, 1992) as well as an academic measure and a teacher rating scale of social acceptance. Parent ratings were also used to assess parental involvement, stress factors and parenting practices. Results were measured for the experimental and control groups as a whole as well as for sub groups based on severity. The students were categorized into 3 groups: mildly aggressive with baseline scores around 1 standard deviation (SD) above the mean, moderately aggressive (between 1 and 2 SD above average) and severely aggressive (2 SD above the mean).

The results indicate that the intervention had a small effect on academic achievement, with an effect size of .26 between intervention and control groups at final testing compared to baseline. Both the control group students and intervention students showed improvement on behavior ratings for self control and social competence, resulting in a low effect size and non-significant differences between groups. However, there was a significant difference between severely aggressive intervention group students (who improved significantly) and severe control group students (who experienced little or no improvement) resulting in an effect size of .70. Ratings of parent stress and child involvement revealed two relevant findings related to the severely aggressive students and dosage level, or the percentage of time parents attended programs out of the possible contact time available. First, parents of the severe subgroup reported the least child involvement and second, distress of parents with severe students decreased relative to dosage level, with low dosage of parent education resulting in increased parental stress and higher group attendance resulting in significantly lower distress. Parental factors did not differ significantly between groups for mild or moderate students (August et al., 2001).

The variable of parent training was controlled for in a similar study by Barkley et al. (1999) in a program with 158 kindergarten children identified as disruptive, above the 93rd percentile on ratings of hyperactivity and conduct problems. The two year study was designed with four treatment conditions, including a no-treatment control group, parent training only group (PT), special treatment classroom only (STC), and a combined classroom/ parent training group. The 9 month program was conducted in special treatment classrooms serving approximately 15 students per class with behavioral management strategies, social skills, self-

control and anger control training. Parent training was conducted during the child's kindergarten year and consisted of 10 weekly sessions during the fall, followed by monthly booster sessions during the winter and spring. Follow up consultations with the first grade teachers were conducted as a supplemental component following the direct intervention with students during their kindergarten year.

A variety of measurements were administered pre and post treatment including diagnostic interviews, parent rating scales, teacher rating scales, classroom and clinic observations and academic tests. Diagnostic interviews were conducted with parents pre and post treatment. A total of nine different clinical disorders were diagnosed, with a significant portion of children meeting criteria for more than one diagnosis. Children in the Special Treatment Classroom experienced a meaningful reduction in clinical criteria between pre and post test ratings. Percentages of students meeting criteria for ADHD dropped from 75% to 59%, Oppositional Defiance Disorder dropped from 65% to 36% and Conduct Disorder dropped from 29% to 3%. Internalizing diagnoses changed from between 5% and 16% of students meeting criteria at pre-treatment to 3% and in many cases no students meeting criteria at post-treatment. The parent training only and control groups experienced less significant reductions in diagnostic criteria. The group receiving the Combined treatment program, however, experienced the least difference between pre and post test with no significant change in diagnostic criteria at post treatment. Overall, the change in diagnostic criteria between treatment (STC and Combined) and control groups (no treatment and PT only) was not statistically significant.

A number of rating scales were also administered at pre and post treatment. Several home based measures were used, including an adaptive behavior scale , the Home Situations

Questionnaire (HSQ; Barkley, 1990), the CBCL, measures of parenting stress and success, and clinical observations. Adaptive behavior was compared at pre and post treatment and indicated that students receiving the classroom treatment (STC and Combined groups) improved significantly more compared to those who did not receive classroom components in either the control or parent training only groups ($p<.002$). The Attention and Aggression scales on the CBCL were compared at pre and post test with children in both special treatment classes experiencing somewhat greater improvement than children in either the control or parent training only groups, however, differences were not reported as statistically significant. The HSQ measured the severity and pervasiveness of behaviors across home and public settings and the parent surveys measured parent stress level, perceived competence and successful parenting practices. Differences on both the HSQ and the parent surveys between pre and post test were not significant. Clinical observations of parent child interactions and child behavior were also not significant.

School based measures included the SSRS, the TRF, the Direct Observation Form (DOF), the School Situations Questionnaire (SSQ; Barkley, 1990) and a variety of academic tests. On the SSRS, TRF and DOF it was found that children in both treatment classroom groups showed a significant improvement in positive behaviors and experienced a significant reduction in externalizing problem behaviors based on both ratings and observations compared to students in control and parent training only groups ($p= .001$ to $.008$). There were no significant differences from pre to post test for any group on academic measurements, the SSQ or measurements that assessed internalizing behaviors (Barkley et al. 2000).

The initial findings indicated that the parent training component did not produce

significant treatment effects. The data were therefore collapsed at the two year follow up to separate the four conditions into two categories, consisting of groups receiving or not receiving the treatment classroom. At two year post-treatment follow up both groups were rated as significantly different from normal, with more behavior problems, and there were no significant differences between treated and untreated groups compared to the normal control group, however, the two groups were not directly compared to each other. Based on the comparison, the authors indicate that treatment effects did not endure long term (Shelton et al., 2000). One challenge encountered in the study was the lack of parent attendance at education sessions; less than half of the parents attended 50% or more of the training and one third attended no sessions.

Summary

Based on the findings, social skills programs implemented in specialized and alternative treatment settings appear to have moderate results. Only three studies were able to be compared in this setting, however. Moderately successful outcomes were found with behavior disordered students serving as peer trainers for both the trainers and trainees (Blake et al., 2000) and Barkley et al. (1999) found that groups conducted in the special treatment classroom were moderately more effective than control groups with or without parent training. The study with mixed results (August et al., 2001) reported significant outcomes for only the severely aggressive students. The August et al. and the Barkley et al. studies were similar on a number of variables, including age and classification of students, parent training components, and consultation with regular education teachers following the specialized setting. The one key difference in the two studies is that in August et al., the core intervention took place in a 6 week summer school setting and in Barkley et al. the treatment was during a full school year. Also, in the latter study

it was found that treatment effects did not endure, even with teacher consultation (Shelton et al., 2000), therefore the most effective component appears to be the classroom intervention rather than the generalization strategies.

Special treatment classroom interventions with parent training components appear to have limited effects, based on the preceding studies. The design of the Barkley et al. (1999) study controlled for parent training and revealed that it was not an effective component and August et al. (2000) found parent training to be effective for only students rated as the most severe. A possible factor influencing effectiveness, based on both studies, is the level of parent attendance. Different factors appeared to be in place related to this variable in the two studies. August et al. (2001) found that parents of the most severely behavior disordered students who attended more than 50% of the training experienced the most significant benefit from the training. Barkley et al. (1999) discovered that the parents not attending the classes differed from the other parents only in that their children displayed less severe symptoms than other participants.

Summary of the Impact of Setting

There is not a clear difference in outcomes based on setting when comparing social skills programs implemented in regular education to small group or special education pull out sessions. Interventions implemented in both settings appear to result in some significant outcomes. It is not possible to compare all studies reviewed on a common metric due to the various presentation of the results, however most scales of measurement allow for a general comparison of outcomes as either not significant or significant and some studies provide a range of outcomes in the form of Effect Sizes that can be interpreted as either mild, moderate or high. Of the eleven studies conducted in regular classroom settings, six studies report mild to moderate results overall, and

five studies report a mix of both non-significant results and mild to moderate results with approximately half of each. Of the seven studies conducted in the special education or small group setting, three studies reported mild to moderate results overall, one reported mild improvement overall, one reported moderate improvement overall, and the remaining two reported a mix of mild to moderate as well as non-significant outcomes.

The three studies conducted in specialized treatment classrooms report somewhat more robust outcomes overall compared to regular classrooms or small group settings. Two reported moderately significant outcomes and one reported a mix of non-significant and mild to moderate results, with severely aggressive students demonstrating the greatest differences between groups. The challenge in comparing these groups directly with the other settings is that there are only three studies compared to seven or eleven studies in the other settings.

All three settings have advantages and disadvantages in their structure and opportunities for interventions. Regular classrooms are advantageous in that they provide natural generalization opportunities and appropriate peer modeling. Also, it is in the least restrictive environment, which is encouraged, and it is has the potential to benefit all students, not just those identified as at-risk. Regular education teachers often provide the social skills training, which lends to generalization and incidental training, however, several studies have pointed to inconsistencies with the delivery of instruction due to broad differences in teaching styles and classroom structure. Other disadvantages can include less opportunities for individualization with higher student to teacher ratios.

Special education and small group settings are advantageous in that there are opportunities for individualization through IEP goals as well as group composition and tailoring

of curriculum to address specific social skills deficits. Generalization is a greater challenge and treatment may not be durable without maintenance procedures in the regular education setting. This is also a challenge in special treatment classrooms, where generalization issues present unique challenges for inherently difficult reintegration tasks once students leave the treatment classrooms. The advantage of special treatment classroom settings is the opportunity for intensive formal as well as incidental training and the advantages that come with lower student to teacher ratios.

Summary of the Impact of Parent Training Components

When considering the impact of setting of social skills programs, the variable of settings outside school needs to be addressed specifically. Students in approximately half of the studies reviewed received either incidental or direct training in the home or clinic setting as well as school based intervention in a variety of settings. Parent training components were included in seven of the eleven studies based in classroom settings and two out of seven studies based in special education pull out or small group settings. Since the results of social skills training in these two settings were similar, it seems reasonable to combine these studies for the purpose of comparing parent training and non-parent training results.

Of the eighteen total studies based in regular or small group/special education pull out settings, nine included parent training components. One reported moderate effects overall, five of the studies reported mild to moderate results overall, and three reported mild to moderate results on approximately half of the measures and non-significant results on the other half. Of the studies which did not include a parent component, one reported moderate effects overall, two reported mild to moderate effects overall, three reported mixed results with insignificant as well

as significant outcomes and three reported outcomes that had minimal statistical significance.

The comparison of the three studies based in specialized or alternative settings includes two parent training studies and one without parent training. Significant effects were reported for the study without parent training (Blake, Wang, Cartledge & Gardner, 2000). Mildly significant effects were reported for one parent training study (Barkley et al., 1999) and the other parent training study reported mixed significant and insignificant results (August et al., 2001).

Based on overall findings it appears that studies including parent training reported somewhat more significant findings than studies without parent training components. This is a potentially important aspect of a comprehensive social competency program. Research has been conducted with children with behavior and conduct problems that strongly supports the inclusion of parent components in clinical interventions and emphasizes the importance of parental involvement in the maintenance of child behavioral change (Barkley, 1999; Middleton, 1995).

There are conflicting results evaluating the significance of a parent training component in the three studies that used treatment designs to control for the variable of parent training in social skills interventions (Golly et al., 2000; McConaughy et al., 1998; 1999; Barkley et al., 1999; 2000). Both Golly et al. (2000) and Barkley et al. (1999;2000) found no significant differences between groups receiving and not receiving parent training components. McConaughy et al. (1998;1999) reported significant group by time interactions comparing parent based components with social skills only groups. There are several factors that may contribute to these outcomes: August et al. (2001) suggest that improved parent competency could have a "sleeper effect" that is more apparent over time, Barkley (1999) concludes that "parental readiness for change" may be an important factor in the study results, and conflicting results may

also be accounted for by fluctuating attendance levels as documented in several studies.

Of the studies reviewed, three were conducted over the span of two years. The other 17 studies were one month to one year in duration. The longer studies did not report more significant results than the shorter studies, in fact none of the three long term studies reported remarkable results. In one study, no significant effects were found between treatment and control groups, with both groups improving (Braswell et al., 1997). In another study, half of the measures were significant in favor of the treatment group compared to the control group at post-test, with no pre-treatment data for comparison (Kamps, Kravits, Stolze, & Swaggart, 1999). In the last study, significant differences between treatment and control groups were reported only at one year post treatment (Vitaro & Tremblay, 1994). These results would suggest that treatment duration is not a relevant factor.

Impact of Timing of Intervention

Introduction

The timing of the intervention is a potential contributing factor to intervention outcomes. Students receiving early intervention may experience greater benefits than those receiving interventions at a later age. Several researchers emphasize that early intervention is a critical component in effective social skills training, especially when students demonstrate severe or chronic behavioral and emotional problems (Walker, 1998; Tankersley, 1996; Golly, 1998). Frequently, students in pre-school or early elementary grades have not yet been classified with EBD, but are identified as being at risk for such disorders. Early intervention efforts are often designed to prevent the development of a diagnosable disorder.

The studies reviewed can be divided into several age group categories related to the

timing of intervention. Studies set in Preschool settings with a mean child age of approximately 5 are clearly considered early intervention. Kindergarten age groups are also often targeted for early intervention by researchers. Students around age 7, or first grade may become part of an early intervention study, especially a longitudinal study that begins in Pre-school or Kindergarten and extends through third grade, but this age group is not clearly considered early intervention. Based on most dividing lines in meta-analyses and other research, a mean age around 8, or 2nd grade, is no longer considered early intervention; however studies that target early elementary school grades may have participants with a mean age of 8 or may include those in second grade. Finally, studies that target children in upper elementary school grades, such as fourth grade or children with a mean age of 10 or older would not be considered early intervention. The studies reviewed fell into these five age group categories with between 3 and 5 studies per age group, including: Pre-school (mean age 5), Kindergarten (mean age 6), First grade (mean age 7), Second grade (mean age 8) and lastly, a wide range of ages and grades averaging age 10 or Fourth grade.

Preschool Age Groups

Four studies targeted preschool age students at risk for emotional or behavioral disorders. A total of 187 subjects were involved in the four studies and all took place in Head Start classrooms (Serna et al., 2002; Serna et al., 2000; Tankersley & Kamps, 1996; Kamps, Tankersly, & Ellis, 2000). These studies were described in detail in the previous section on settings in regular classrooms. The results varied, however, at least half and as many as 85% of the outcome measures indicated significant improvement for the targeted students across three out of the four studies.

In their study with behaviorally at risk pre-school students, Kamps, Tankersley and Ellis (2000) reported the most compelling results, with 6 out of 7 observational measures demonstrating significantly higher compliance and a decrease in negative behaviors for children in the experimental groups compared to those in control groups (p=.000 to .04) at the end of the two year study. Results from one observational measure as well as the weekly teacher report forms were not significant. In Tankersly and Kamps (1996) on the majority of observational measures (six out of nine), children in the target group demonstrated significant improvement in positive interactions and reduced disruptive behavior compared to children in the control group (p = .001 to .05).

Two similar studies were conducted with at risk preschool children using behavioral rating scales to measure outcomes. In the first study, (Serna et al., 2000) children in the experimental group improved significantly over children in the control group on half of the outcome measures in their ratings of adaptive and maladaptive behaviors as well as social interactions (p =.001 to .04). Effect sizes were reported for measures reaching statistical significance only with an average effect size of .36 for the 5 out of 10 rating scales reaching this level. In the second study, (Sernal et al., 2002) one fourth of children in the experimental group improved significantly compared to no significant improvement with children in the control group. Rating scales were also used to measure changes in adaptive and maladaptive behaviors as well as social interaction. Two out of 8 students who had been rated in the clinical range at pre-test were subclinical at post-test and not only was no change seen in the control group student, but 3 new control group students were in the clinical range at post test.

Kindergarten Age Groups

Five studies initiated interventions in Kindergarten involving a total of 473 subjects, three of which were described in the section on regular classroom interventions including parent training (Golly, Stiller, & Walker, 1998; Walker & Kavanagh, 1998; Golly et al., 2000) and two of which were described in the section on specialized settings including parent training (Barkley et al., 1999; August et al., 2001). Three studies reported significant results with effect sizes in the moderate to high range overall and two studies had some significant findings, with small effect sizes, mixed with non-significant findings.

Studies based in kindergarten settings using First Step to Success interventions reported compelling changes from pre and post test on the majority of measures used in the study, including observations of academic engaged time and behavioral ratings of aggression and adaptive/maladaptive behavior (Walker & Kavanagh, 1998; Golly, Stiller & Walker, 1998; Golly et al., 2000). In a control group study, observations of academic engaged time as well as teacher ratings of aggression, adaptive and maladaptive behavior indicated significant improvement at post test for the intervention group compared to the control group ($p = .001$ to .05). Effect sizes were medium to large, ranging from .76 to 1.19. Only on an outcome measure of withdrawn behavior were there no significant changes (Walker & Kavanagh, 1998).

These results were supported in a similar First Step to Success program study with at risk kindergarten students, but without a control group (Golly, Stiller & Walker, 1998). Observations of academic engaged time (AET) increased significantly between pre test (AET = 60%) and post test (AET = 83%) and three out of four rating scales (measuring aggression, adaptive and maladaptive behavior) indicated significant improvement between pre and post test ($p < .005$).

There was no significant change in withdrawn behavior over time. Similar results were obtained in a small twin study (with no control group) with at risk students (Golly et al., 2000). The four twin subjects in this First Step to Success study demonstrated improvement in academic engaged time from rates of 75% or lower at pre intervention to 93% - 100% at post intervention

In a study using a special treatment classroom, in which 15 at risk/disruptive kindergarten students were taught with a trained teacher, teacher aide and supervising master teacher providing strong behavioral support and self-control training plus follow up during their return to regular 1st grade classrooms, Barkley et al. (1999) reported successful outcomes. Children in the special treatment classroom demonstrated significant improvement based on observations and ratings of externalizing behaviors compared to those students not receiving the classroom intervention with or without parent training ($p < .01$). Changes were seen between pre and post testing on four out of six parent/teacher rating scales assessing adaptive behavior, social skills, attention and aggression as well as direct observations of externalizing behaviors. There were no significant changes on measures of internalizing symptoms, DSM criteria, parent/teacher surveys or academic measures. Results of the 2 year follow up indicated that, based on comparisons to a control group of normal students, students still displayed significantly more disruptive behaviors (Shelton et al., 2000).

August et al. (2001) reported mixed findings in their study of a special treatment program, involving daily social skills training during a 6 week summer school plus teacher consultation and individual treatment as needed during the school year over a two year period. Treatment students compared to control students on pre and post measures demonstrated a small improvement on academic measures (ES = .26) and teacher and parent rating scales revealed

improvement in both groups on measures of self-regulation and social competence. Significant differences on these measures were seen in comparing only the most severe students.

First Grade Age Groups

Three studies introduced their interventions with First grade students involving a total of 935 students (Conduct Problems Prevention Research Group, 1999; McConaughy, Kay & Fitzgerald, 1998; Middleton & Cartledge, 1995). The studies are covered in detail in the previous sections on regular classroom interventions including parent training and small group interventions including parent training. Significant differences between some, if not most, pre and post measures were reported across studies.

The most compelling results in this age group were seen in a study conducted with both first and second grade students at risk for aggression in a small group intervention. The study was an ABABA design and measures included observations of aggressive behavior only. The five students in the study exhibited an average of 65% fewer aggressive behaviors during the first phase of intervention. The removal of intervention resulted in a return to baseline aggression levels followed by an 80% decrease in aggression during the second phase of treatment. No aggressive behaviors were observed during a short follow up phase (Middleton & Cartledge, 1995).

A two year comparison study was conducted with students at risk for emotional disturbance using classroom based social skills instruction in both comparison groups and a Parent Teacher Action team (PTAR) program, involving parent partnership and consultation, in one group. Significant time effects were seen on 11 out of 16 parent/teacher ratings over both years ($p<.05$), with both groups experiencing improvement in problem behaviors and social

competency between pre and post test. Greater gains were made by the PTAR group than the social skills only group with significant group by time interactions on observations at one year post-test and on half of the rating scales at two years post treatment ($p<.05$). At two years post treatment, observations were not clinically significant between groups, however, the PTAR group had a decline in observed problem behaviors and the social skills only group increased (McConaughy, Kay & Fitzgerald,1998).

Mixed results were reported in a one year project with first grade students at risk for aggression and oppositional behavior, receiving classroom as well as clinical interventions with an intensive parent training component. On Social Cognition scales, measured pre and post treatment, students in the intervention group showed significant improvement compared to those in control groups, receiving no intervention, on four out of five measures with p values from .0001 to .04. Program participants also had better scores at post test on 2 out of 3 academic scales and 2 out of 8 rating scales (measuring externalizing behavior), 1 out of 3 socio-metric measures and 2 out of 3 observations (including positive interactions and acts of aggression) compared to control group participants ($p<.02$), however, there were no pre-intervention values available. Results from 60% of the outcome measures were not significant (Conduct Problems, 1999).

Early Elementary Age Groups

Five studies were conducted with students in the second grade age range or with a range of ages having an overall mean age of 8 to 9 years old (McMahon, Wacker, Sasso & Melloy,1994; Vitaro & Tremblay,1994; Herring & Northrup, 1998; Braswell et al., 1997). These studies are described in detail in the sections on Special Education Setting/Small Group

Social Skills Instruction and Small Group Interventions Including Parent Training. The fifth study (Kamps, Kravits, Rauch, Kamps & Chung, 2000) was not introduced in the previous section on settings, as it was conducted across a variety of settings, and will be introduced in this section. A total of 473 students were involved in the studies combined.

The study with the most compelling results was conducted with one EBD student and reported significant increases in observed appropriate behaviors and decreases in inappropriate behaviors between baseline and intervention phases. Cost contingency and prompting resulted in the most dramatic changes in behavior, with a drop in inappropriate behavior of 11 incidents at baseline to 5 incidents per session during intervention and an increase of 2 positive behaviors on average during baseline to 7 appropriate behaviors during intervention sessions. Results were not as dramatic across settings in which intervention strategies were not directly applied and after treatment was withdrawn (Herring & Northrup, 1998).

McMahon, Wacker, Sasso and Melloy (1994) conducted a social skills program with 3 students ages 7 to 9 in a small group setting. Observational measures indicated that students improved significantly between baseline and intervention phases. Duration of on task behavior increased by 400% and recess observations demonstrated significant increases in positive social behaviors from 1.3 on average to 5 during training, and decreases in negative behaviors from an average of 6 during baseline to 1 during intervention. However, teacher ratings did not indicate a significant level of perceived improvement in student behavior.

Vitaro and Tremblay (1994) conducted a study with 104 behavior disordered students aged 8 to 9, randomly assigned to treatment or control groups. The social skills intervention spanned a two year time period and follow up measures were collected for 3 years. Results from

the teacher rating scale (measuring aggression) and the socio-metric measure (rating aggression, social withdrawal and likeability) approached, but did not reach, statistical significance at post treatment and two year follow up. There appeared to be some significant differences between prevention program and control group students over time, however. At the three year follow up, teacher aggressiveness ratings and peer nominations improved significantly for program students compared to control students at the .05 level and the effect sizes, comparing post treatment scores for both groups, were .39 to .58 respectively. Changes in self reported delinquency were not statistically significant, but were meaningful in that 20 - 30% fewer delinquent acts were reported by children in the treatment group compared to the control group during follow up.

Braswell et al. (1997) targeted students ranging from 1st to 4th grade, with a mean age around 8. The study included 309 students identified at risk due to hyperactivity and disruptive behaviors, randomly assigned to a multi-component intervention, including: social skills, behavioral management and parent training, or an information attention control group consisting of parent and teacher education, but no direct intervention with the students. Results were measured using a total of 6 parent and teacher rating scales plus observations. Parent and teacher ratings of child problem solving, indicated significant changes in behavior were seen across time, and although not statistically significant, scores improved about one half of a standard deviation more for intervention students than for control students. Child ratings on the BASC (Behavioral Assessment System for Children) and observations of behavioral interference also demonstrated significant differences were seen over time but not for condition. Parent and teacher ratings on the BASC, ratings of hyperactivity, and observations of off task and out of seat behavior revealed that no significant differences were perceived for either time or condition.

Kamps, Kravits, Rauch, Kamps and Chung (2000) conducted a longitudinal study with two cohorts of students ranging in age from 5 to 11 (mean age of 8). The 38 students in the study were classified or at risk for EBD from a variety of educational settings, including regular education classrooms, part time resource placement and full time special education placement. The basic program components for all settings included weekly social skills instruction of appropriate peer interactions and acceptable classroom behavior, peer tutoring and behavior management strategies. Classroom teachers provided the instruction as well as incidental teaching. They received training through inservice as well as intermittent consultation on behavior management systems. The study design included a delayed control group, with the first treatment group, Cohort 1, receiving 4 years of treatment and Cohort 2, recruited one year later, receiving treatment during years 3 and 4 only, after one year of baseline measurement as a control group.

Outcomes were measured using direct observations and teacher ratings. Aggression was measured in number of incidents per day. Student averages dropped from 7.2 incidents in Year 1 to 1.7 incidents in Year 4 ($p=.011$) for Cohort 1. Cohort 2 also experienced a drop (6.1 to 2.8), but it was not statistically significant. Out of seat behavior and arguing with peers were also measured during observations, but changes were not significant. Academic Engaged Time (AET) was measured and showed a statistically significant increase for both Cohorts with an increase of 63% to 81% ($p=.008, .003$). Behavioral compliance improved slightly for both Cohorts, but was not statistically significant. Teacher ratings revealed a mix of significant and non-significant results as well. Aggression levels were reported to drop slightly for Cohort 1 and remain stable for Cohort 2. Following directions was stable for Cohort 1 and significantly

decreased for Cohort 2. Negative verbal behavior was stable for Cohort 1 and dropped significantly for Cohort 2 (Kamps et al., 2000).

Older Elementary Age Groups

The final group of studies consist of those conducted with subjects in approximately 4th to 6th grade or age 10 to 11 on average. Five studies were reviewed with a total sample of 204 students (Bienert & Schneider, 1995; Blake, Wang, Cartledge & Gardner, 2000; Flicek, Olsen, Chivers & Kaufman,1996; Kamps, Kravits, Stolze & Swaggart, 1999; Lochman, Coie, Underwood & Terry, 1993). The studies were discussed in detail in the previous sections on Regular Classroom/Whole Class Social Skills Training, Special Education Setting/Small Group Social Skills Instruction and Specialized and Alternative Educational Settings. This group of studies reported the most significant outcomes of any age group, with three studies reporting significant results overall and two studies reporting a mix of significant and non-significant results.

Compelling results were reported in a study with 6th grade students at risk for aggression/disruption or sensitive/withdrawn behavior (Bienert & Schneider, 1995). Treatment was matched to the specific social skills deficits of the students, using two separate curriculums, one for the Aggressive-Disruptive group and one for the Sensitive-Isolated group. Five different groups were compared: a control group, two groups receiving the curriculum specific to their deficits and two cross-over groups, receiving the opposite curriculum. Outcome measures included self-reported competence, teacher ratings of social skills, and peer nominations of aggression, withdrawal and likeability. The groups receiving deficit-specific treatment experienced significant improvements on outcome measures at post-treatment as well as at a one

year follow up compared to other groups ($p<.0001$ to $p< .05$) with an average difference of at least one standard deviation between pre-test and post-test and/or follow up (Bienert, 1995).

Significant results were also reported by Blake et al. (2000) in two studies with students ages 9 to 13 classified as EBD and served in a self contained classroom setting. The intervention in the second study was unique in that peers with EBD classification were trained to be part of the treatment. The students in Study One as well as the trainers with behavior disorders in Study Two improved following the intervention. Behavioral observations using average frequency counts indicated, in both studies, an increase from less than one pro-social behavior per observation at baseline to more than 5 pro-social behaviors at post-treatment and follow-up. Aggressive behavior decreased from 5 incidences on average per observation at baseline to one or less at post-treatment and follow-up.

Mostly significant results were reported by Flicek et al., (1996) in a study providing social skills interventions to 3 students with EBD in a 4th and 5th grade Combination Classroom, serving several resource students in a regular education setting. Three outcome measures were used. A teacher behavior report card showed significant differences between pre and post test ratings of nine specific behaviors, including following directions, work completion and cooperation ($p<.05$). The Teacher's Report Form (TRF) showed a drop in Total Problems scores of more than 2 standard deviations, from clinical to average levels, between pre and post test for all three subjects. The third measure was academic based and there were no significant changes from pre to post test.

Two studies reported a mix of significant and non-significant results, including a study of aggressive/rejected students and rejected only students in 4th grade (Lochman et al., 1993).

Aggressive/rejected students receiving intervention matched to their specific treatment needs improved significantly over controls in their level of aggression and social acceptance on 4 out of 8 teacher and peer assessment ratings ($p<.01$ to $p<.04$). Rejected only students receiving intervention specific to their treatment needs did not differ significantly from controls at post test. Self-reports indicated, however, that the students' level of perceived self worth declined significantly for both treatment groups compared to controls, which improved ($p<.01$).

The second study (Kamps et al., 1999) was conducted with E/BD or at risk students in grades Kindergarten through seventh grade, with a mean of fourth grade. Interventions included classroom behavioral management, classroom based social skills training and peer tutoring. Post intervention measures were favorable for the target group in comparison to the control group on four out of nine behavior observation measures, indicating a reduction in inappropriate behaviors and an increase in positive behaviors in both classroom and recess settings. Four out of eleven teacher ratings indicated significant improvement in appropriate classroom behaviors at post test ($p<.01$ to $p<.05$). It was not possible to compare post intervention measures with pre-intervention measures due to the different measures used.

Summary

Based on the evaluation of the studies conducted in each age group, it appears that there is not strong evidence that early intervention is more successful than later intervention, nor is there a clear pattern of effectiveness based on age of participants. The results from the studies were similar for pre-school and kindergarten students. Three out of four studies conducted with pre-school students reported significant reductions in problem behaviors and increased positive social behaviors on at least half and as many as 85% of the outcome measures used. Among the

kindergarten age group, three studies reported significant improvement in academic engaged time and reductions in aggression, with effect sizes in the moderate to high range overall. Two studies indicated that students receiving intervention demonstrated more behavioral change than controls on some measures, especially when evaluating externalizing behaviors and students with severe behavioral impairment.

Results of the three studies conducted with first grade students indicated that students receiving interventions experienced at least some improvement over controls. A reduction in aggression was seen during intervention phases compared to baseline phases in the single subject study. In one study, significant differences between pre and post ratings of problem behaviors and social competency were seen on at least half of the measures for intervention groups compared to controls and less than half of the measures were significant in another study, in which only social cognition measures improved significantly for students receiving intervention compared to controls.

Early elementary age groups, with a mean age of second grade, experienced some significant improvement overall based on the five studies evaluated. Significant increases in observed appropriate behaviors and decreases in inappropriate behaviors between baseline(s) and intervention phases were seen in several studies. Some significant differences between prevention program and control group students were seen over time when comparing aggressiveness ratings and peer nominations at three year follow up and approximately half of the behavioral rating scales and observations indicated significant improvement for the intervention cohort over the control cohort in a longitudinal study. Significant improvement was seen over time, but not for condition on the majority of rating scales and observations comparing

students receiving a multi-component intervention and those in the information/attention control group.

The older elementary age group, in 4th grade on average, experienced more significant gains than the first and second grade groups. Three studies reported compelling results including: students receiving treatment specific to their social skills deficits, EBD students receiving interventions in a classroom combined with regular education students, and students participating in peer directed interventions. Average pre to post differences in behavior ratings of students in the first two studies improved by over a full standard deviation and observations of aggression declined significantly in the third following the intervention. Two additional studies reported a mix of significant and non-significant results, one in which aggressive/rejected students receiving intervention experienced significant improvement in behavioral ratings and peer assessments compared to controls, but intervention status resulted in significantly lower ratings of self esteem. The other study indicated students experienced behavioral improvement on slightly less than half of the post intervention rating scales and observational measures.

Impact of Participant Characteristics

Introduction

The diagnostic characteristics of children involved in social skills interventions may impact the outcomes of those interventions. The level of severity of problem behaviors or classification of students may play a role in the relative level of change or improvement made by such students. For example, students with more severe emotional or behavioral disorders may experience greater gains compared to students with milder symptoms. On the other hand, students identified at risk, rather than classified as EBD may demonstrate higher success overall.

Studies can be evaluated based on the classification status of students, when specified, as well as severity of symptoms, which can be evaluated through studies that use symptom severity as a variable. Several studies address diagnostic characteristics specifically. For example, studies have compared students with externalizing disorders to those with internalizing disorders. In addition, some studies have separated subjects based on diagnostic characteristics and then modified interventions to the specific symptoms of the different groups.

Students Classified as EBD Versus Students At Risk

Of the studies reviewed, the majority were conducted with students considered to be at risk for emotional or behavioral disorders. Six out of 22 studies included students who were formally classified as EBD. Of the six studies with EBD students, sample sizes ranged from only one student to a maximum of 52 total students in the sample. In the remaining 16 studies with students identified as at risk, sample sizes ranged from 9 students to 891 subjects with an average of 132 students per study.

The study designs were also different between the studies with EBD students and those with at risk students. Only two of the studies with students classified as EBD utilized a control group design and the remaining studies were single subject designs, which compared baseline to intervention data. Of the studies with students at risk, the majority were conducted with either a control group design or as intervention comparison studies and only four studies were conducted using single subject designs or by contrasting pre and post data only. The differences in overall number of studies, sample sizes and study designs make it difficult to directly compare studies with students classified as EBD versus those at risk for EBD.

Studies with students classified as EBD

Six studies were conducted with students classified as EBD. Four studies were conducted as single subject designs (Blake, Wang, Cartledge & Gardner, 2000; Flicek, Olsen, Chivers & Kaufman, 1996; Herring & Northrup, 1998; McMahon, Wacker, Sasso & Melloy, 1994). The remaining two studies employed a control group design to allow for comparisons between students with EBD receiving treatment and those in a waitlist control group (Kamps, Kravits, Rauch, Kamps & Chung, 2000; Kamps, Kravits, Stolze & Swaggart, 1999). These studies have been described in detail in the previous sections.

Two separate studies were conducted by Blake, Wang Cartledge and Gardner (2000) with students served in a self-contained classroom in a school for students with EBD. Daily social skills instruction was conducted by the classroom teacher. In addition, students with behavioral disorders were trained to provide peer instruction, so they served as both recipients of the intervention as well as trainers. Observational results demonstrated that both the student trainers and trainees experienced a significant increase in verbally and non-verbally supportive behavior, such as positive statements or problem solving, and a decrease in verbally and non-verbally abusive behavior during intervention phases when compared to data obtained during baseline phases.

In the Combination Classroom approach (Flicek, Olsen, Chivers & Kaufman, 1996) three students with EBD received a whole class social skills intervention in a regular 4th and 5th grade classroom. All three experienced significant behavioral gains (followed directions, completed assignments, cooperative, respectful) based on behavioral reports between pre and post measurement ($p < .05$). They also had a significant reduction on the Total Problems scale of the

Teacher's Report Form between pre and post test ratings, dropping from a clinical level overall (T = 72) to an average level (T = 47). Results from academic measures did not indicate significant changes over time.

Herring and Northrup (1998) conducted a single subject study with a second grade student classified as EBD. Social skills training was conducted with the target student and several model peers. Significant improvement in appropriate verbal behaviors and a decrease in inappropriate behaviors (complaining and whining) were observed during intervention phases in the treatment setting compared to baseline and phases in which intervention components were removed.

In another study, three students, ages 7 to 9, classified as EBD received social skills instruction in the special education setting with social mainstreaming in the regular education setting. The results indicated that classroom observations of on task behavior increased 400% during intervention compared to baseline. Recess observations of targeted social interactions, such as playing cooperatively and initiating conversations, increased and non-targeted negative behaviors, such as aggression and rule violations, decreased during intervention compared to baseline at a significant level. Removal of intervention components resulted in a return to baseline rates of behaviors, however, the re-introduction of generalization components in the post-treatment and maintenance phases resulted in significant and stable improvements (McMahon, Wacker, Sasso & Melloy, 1994).

Kamps, Kravits, Rauch, Kamps and Chung (2000) conducted a social skills program with two cohorts of students, ages 5 to 9, classified with EBD. Interventions were conducted in regular as well as resource classrooms with trained teachers and peer tutoring components.

Approximately half of the behavioral ratings and observations indicated significant improvement in appropriate and inappropriate behaviors ($p < .03$), specifically aggression, out of seat behavior and academic engaged time. A similar study was conducted with Kindergarten through 7th grade students classified as EBD in which a control group design was used (Kamps, Kravits, Stolze & Swaggart, 1999). According to teacher ratings and observations, students receiving the regular classroom social skills training and peer tutoring exhibited more positive behaviors (requesting attention, socially interactive, academically compliant and engaged) and less negative behaviors (aggression, out of seat, non-compliant and disruptive) at post test than control group students with statistical significance on approximately half of the measures ($p < .05$).

Overall it appears that students with EBD experience significant levels of improvement, especially while intervention components are in place. However, sample size and study design may be factors in the outcomes as well as other variables. For example, the studies with students classified as EBD involved unique interventions, such as using students with behavior disorders as peer trainers and intensive individualization procedures were used in some of the single subject designs.

Studies with students at risk of EBD

Sixteen of the studies evaluated were conducted with students in a category of "at risk" or "high risk" for emotional and behavioral disorders. Thirteen studies were conducted as control group or comparison group designs. Two were conducted with target students only and provide pre and post data and one was conducted as a single subject design. Half of the studies report significant improvement on more than half of the outcome measures, two report significance on half of the measures and 6 studies had significant outcomes on less than half of the measures.

These studies are described in greater detail in previous sections.

Two control group studies, one intervention only study and the single subject design reported significant outcomes on almost all of the areas measured. Sixth grade students with aggressive or isolated symptoms in the treatment group reported improved social self perception and were rated by peers as having higher likeability and lower aggression at post test than control group students ($p<.002$) (Bienert & Schneider, 1995). Kindergarten students with conduct problems and aggression receiving treatment were rated as improving significantly over control students in the areas of academic engaged time and ratings of aggression, maladaptive and adaptive behavior (ES=.76-1.19). Only withdrawn behavior was rated as not improving significantly over controls (Walker & Kavanagh, 1998). Academic engaged time (AET) increased significantly between pre and post test for twins at risk for anti-social behavior, with all target students increasing from 75% or lower pre-intervention AET to 93% or higher post intervention AET (Golly et al, 2000). Five students in an ABABA design study had a reduction in aggression of 65% on average during the first phase of treatment and an 85% reduction during the second phase of treatment. No aggressive behaviors were observed during a short follow up phase (Middleton & Cartledge, 1995).

Three control group studies and an intervention only study reported significant outcomes on the majority of measures. Kindergarten students in the special treatment classroom improved significantly over students not in the classroom on areas of observed externalizing behaviors, ratings of attention and aggression, adaptive behavior and social ratings. Changes on measures of internalizing behaviors, home and school questionnaires and academic measures were not significant (Barkley et al., 1999). Preschool children with aggression who received social skills

training were rated as improving significantly over control students on 6 out of 9 direct observations of positive interactions and disruptive behavior ($p<.05$) (Tankersley & Kamps, 1996). Students in pre-school through first grade receiving social skills interventions improved over control students on observed aggression, compliance, out of seat behavior and negative verbalizations ($p < .04$). Observed destruction rates and weekly ratings from teachers did not change significantly (Kamps, Tankersley & Ellis, 2000). Academic engaged time increased for all intervention students from average pre-test levels of 60% to average post test values of at least 83% ($p=.005$). Three out of four rating scales revealed significant improvement from pre to post test. Only the Withdrawn behavior scale was not significant (Golly, Stiller & Walker, 1998).

Approximately half of the outcome measures were significant in two studies. Teacher and peer rating scales showed significant improvement in aggression, rejection, and social acceptance for aggressive/rejected students receiving treatment compared to those in a control group ($p<.04$). In the same study, rejected only students did not improve significantly over controls on measures of aggression, rejection and social acceptance. Ratings of prosocial behavior, academics and social preference did not change significantly for either intervention group and both intervention groups declined in their level of self-esteem compared to controls (Lochman, Coie, Underwood & Terry, 1993). In the second study, Head Start children receiving social skills improved significantly over controls on 5 out of 10 rating scales, including social problem behaviors, adaptive behaviors, social interaction, and over-activity. Aggression, maladaptive behaviors, critical events and opposition/defiance were not significantly different at post test (Serna, Nielsen, Lambros & Forness, 2000).

Less than half of the outcome measures were significant in four studies. In a

comprehensive intervention program, utilizing classwide social skills, a parent component and clinical group interventions, first grade students with high ratings of aggression and opposition were rated more preferably at post test than controls. Improvement was seen on 2 out of 3 academic scales, 2 out of 8 rating scales, 1 out of 3 socio-metric ratings, and 2 out of 3 observations. No pre test data were available for comparison (Conduct Problems Prevention Research Group, 1999). In another comprehensive program, improvement was seen for both groups of students who received either social skills instruction only or social skills instruction as well as a parent/teacher partnership program (PTAR). Significant group by time interactions were seen on approximately half of the rating scales at the second year post treatment as well as first year direct observations of on-task classroom behavior and problem behaviors, with greater improvements for the PTAR group. Across 20 total outcome measures over both years, a total of 8 measures were significant in favor of the PTAR group (McConaughy, Kay & Fitzgerald, 1998).

In the third study, less than half of the subjects improved significantly. The social skills intervention was conducted with a small group of clinically at-risk Head Start children. At post-test, 2 out of 8 experimental students no longer met clinical criteria. The control group student did not improve and 3 new control students were considered to be at risk at post test (Serna, Lambros, Nielsen & Forness, 2002). In the fourth study, less than half of the yearly outcome measures were significant. The study involved elementary students receiving social skills intervention for externalizing behaviors. The first two years of follow up measurements revealed no significant changes in aggression or hyperactivity, however, follow up data during the third year after treatment did show significant decreases in these behaviors ($p<.05$) (Vitaro & Tremblay, 1994).

Virtually no significant results, comparing treatment and control groups, were obtained in two studies. In a study of Kindergarten and first grade students in a 6 week summer program with teacher consultation during the subsequent school year, only the severely aggressive subgroup improved significantly over controls in measures of self-regulation. Academics, social competence ratings and the majority of rating scales were not significant (August et al, 2001). In a study of 1st through 4th grade students at risk for hyperactivity and disruption, both treatment and information attention control groups improved on 4 out of 5 rating scales and 1 out of 4 behaviors observed. The remaining scales and observations were not significant (Braswell et al., 1997).

In summary, more of the studies with students classified as EBD had significant outcomes than studies with students considered to be at-risk. A notable finding in comparing the studies, is that control group design studies reported fewer significant outcomes as a whole than studies comparing pre and post data for intervention students only. The two control group design studies with students classified as EBD were the ones with the least significant differences and the three studies with students identified as at risk that did not have control group designs reported some of the most significant outcomes. This could be explained by the differences in calculating statistical significance when comparing data across groups than when comparing data only across time and may not allow for a fair or accurate contrast between the outcomes of studies with students classified EBD versus those with at-risk students.

Severity of Symptoms

One possible explanation for more significant outcomes with students classified as EBD compared to those at-risk, is that students classified with emotional or behavioral disabilities

have more severe symptoms than students identified as at-risk. In which case, students with EBD have more room for improvement compared to students at risk whose problem behavior levels are not as high. Severity of symptoms is a variable worth considering independently, however, it was addressed infrequently in the articles reviewed. Only one study specifically addressed severity of symptoms; August, Realmuto, Hektner, and Bloomquist (2001) conducted a two year social skills intervention in a specialized, summer school setting with consultation services to regular education teachers during the school year as well as a parent training component. The study and overall results are discussed in detail in the previous section on Specialized Settings Including Parent Training.

The participants in the study were in kindergarten to first grade and identified as high risk for aggressive and disruptive behavior. The severity of aggressive behavior was a variable used for grouping students. Those who received average scores on aggression scales (less than 1 standard deviation above the normative mean) over the three time points in the study were considered Mildly Aggressive. Those with scores between 1 and 2 standard deviations above the mean were identified as Moderately Aggressive and scores greater than 2 standard deviations above were deemed Severely Aggressive. Approximately one third of each the target and control group students fell into each category.

The results of the study indicated that the severity level of students was a significant variable in many cases. Comparisons between pre and post treatment measures of target and control groups were not significantly different unless groups were compared based on severity level. This was true when evaluating the impact of the intervention on behavioral self regulation and social competence. From pre to post, both the treatment and control groups experienced

decreased ratings of aggression, hyperactivity and disruption on the 10 parent and teacher scales used to measure the behavioral self-regulation variable. However, among the severely aggressive group of children a significant difference between pre and post test ratings for the intervention group compared to the control group was seen ($p<.03$), with an effect size of .70 for the intervention. Similarly, both intervention and control groups improved over time on measures of social competence with no significant differences, except among the group of severely aggressive children, for which only the intervention group improved. Differences were meaningful, in that one group improved and the other did not, but no statistical significance was reached.

It is unfortunate that only one study used severity as a variable in research, especially since it appeared to provide a valuable comparison and may be a critical factor in evaluating outcomes of social skills interventions. The authors refer to other studies with general education students or economically at risk students, rather than students identified as behaviorally at risk, that support the findings that the most aggressive students demonstrate the greatest gains compared to other students. There are several theories that could explain these findings, including that children with the most severe behaviors have the greatest room for improvement or that they have the highest need for social interventions and the strongest response to them (August et al., 2001).

Diagnostic Characteristics of Participants

Many studies did not pinpoint different diagnostic characteristics, such as internalizing and externalizing behaviors when evaluating outcomes, but rather only measured single symptoms, such as aggression, or measured both types of symptoms together as a general construct. However, those studies that do evaluate the impact of social skills interventions on

different diagnostic characteristics provide valuable information (Barkley et al., 1999; Braswell et al., 1997; McConaughy, Kay & Fitzgerald, 1998; Golly, Stiller & Walker, 1998; Walker, Hill & Kavanagh, 1998). These studies will be discussed briefly in this section, but are reviewed in detail in the section on Impact of Setting.

In their study of behaviorally at risk kindergarten students, Barkley et al. (1999) examined the different subscales of the TRF and CBCL and determined that none of the internalizing symptoms were significantly different at post test between any of the groups (special treatment classroom, parent training only, combined interventions or no treatment). However, groups receiving classroom interventions demonstrated fewer aggression and attention problems as rated by their teachers and parents at post test compared to groups receiving parent training only or no treatment. Diagnostic interviews at pre-treatment revealed over 50% of participants met criteria for either ADHD or ODD and less than 20% of participants met criteria for any of 6 different internalizing disorders including depression and anxiety. Therefore, these findings must be considered in light of the predominantly externalizing features of participant characteristics in the study.

In two studies using First Step to Success for kindergarten students, participants were identified as at risk for externalizing disorders, including aggression and anti-social behaviors (Golly, Stiller & Walker, 1998; Walker, Hill & Kavanagh, 1998). The outcome measurements at post test included two subcales of the Teacher Report Form, aggression and social withdrawal. In both studies, withdrawn behavior did not change following the intervention, but the aggression decreased. Pre to post differences were statistically significant with a drop in aggression ratings from a mean T-score of 75 (Clinical) to a mean T-score of 62 (Borderline) compared to a

minimal change in T-scores of withdrawn behavior from pre-test (M = 58) to post-test (M=52), both of which are in the normal range making significant change more difficult to obtain (Golly, Stiller & Walker, 1998). Similar differences were seen in the second study with a change in aggression ratings of a full standard deviation between pre and post test, dropping from clinical levels to normal levels ($p < .001$) and little or no change reported in withdrawn behavior between pre and post test, both of which were in the normal range (Walker, Hill & Kavanagh, 1998). These findings may not be surprising considering the initial diagnostic traits of the participants were externalizing in nature and internalizing traits were not necessarily clinical, or problematic to begin with.

Students with externalizing behaviors, such as hyperactivity and aggression, were targeted in a study with first through fourth graders comparing the impact of a two-year Multicomponent Competence Enhancement Program to an Information/Attention Control group (Braswell et al., 1997). Program students received social skills group training, parents received education and teachers participated in several hours of in-service. Control group students did not receive social skills instruction, but parents and teachers participated in informational meetings. No significant differences in externalizing, internalizing or hyperactivity indices between pre and post test were seen by teachers or parents.

Kindergarten students identified as either externalizers or internalizers based on screening criteria were included in the study using Parent Teacher Action Research (PTAR) and social skills interventions (McConaughy, Kay & Fitzgerald, 1998). The results of the whole class social skills instruction combined with the parent and staff teaming component was compared to whole class social skills only, with children randomly assigned to groups. The rating scales

completed by teachers and parents and indicated some significant changes in both externalizing as well as internalizing behaviors between pre and post test both years of the study. The group receiving the PTAR component improved over students receiving social skills on slightly less than half of the measures across the two years (see Table 6).

Table 6

Comparison of Externalizing & Internalizing Differences Between Groups from Pre to Post Test

		Level of Statistical Significance	
Post-test Date	Rating Scale	Externalizing	Internalizing
Year One	TRF	p <.04 **	p <.03 *
Year Two	TRF	ns	p <.05 **
Year One	SSRS - Teacher	p <.02 *	p <.02 *
Year Two	SSRS - Teacher	ns	ns
Year One	CBCL	ns	ns
Year Two	CBCL	p <.05 **	p < .05 *
Year One	SSRS - Parent	p <.04 *	p <.04 *
Year Two	SSRS - Parent	p <.02 **	ns

Note. * = Significant Time Effect; ** = Significant Group x Time Interaction (PTAR vs Social Skills only groups); ns = not significant (McConaughy, Kay & Fitzgerald, 1998;1999).

Only one significant group by time interaction was noted on internalizing measures over the two years. Internalizing behaviors decreased over time for both groups receiving social skills instruction on 3 of the rating scales during the first year and on 2 rating scales during year two. Three significant group by time interactions were seen on Externalizing measures over the two

years. Externalizing behaviors decreased over time for both groups receiving social skills instruction on 2 of the rating scales during year one and 2 rating scales during year two. This suggests that similar drops may be seen in internalizing and externalizing behaviors when students are initially identified as having clinical levels of internalizing and externalizing behaviors, however, group differences appear to be more noticeable when comparing externalizing behaviors (see Table 6).

The results of the above studies suggest that social skills instruction may have a greater impact on externalizing disorders, however, a critical factor in examining the results is that of baseline differences in internalizing and externalizing symptoms. Pre-test levels of externalizing behaviors were typically much higher than internalizing behaviors in most of the studies. In one case, raw score values of externalizing ratings were 7 times as high as internalizing ratings at pre-test (Golly, Stiller & Walker, 1998). Several studies reported that externalizing behaviors, such as aggression or conduct disorder traits, were almost 4 times as high as internalizing behaviors, such as withdrawn behavior or anxiety at pre-test (Walker, Hill & Kavanagh, 1998; Barkley et al., 1999). Externalizing scores were one half to one full standard deviation higher than Internalizing scores on parent and teacher rating scales at pre-test in the other studies (Braswell et al., 1997; McConaughy, Kay & Fitzgerald, 1998). These results suggest that the lack of significant impact on internalizing behaviors may be due to the lack of need of intervention for internalizing symptoms, especially compared to the much more prevalent externalizing traits of many study participants.

Students with contrasting diagnostic characteristics

Some studies have also separated the participants based on different diagnostic

characteristics and tailored treatment specifically for their unique needs. One of these studies, (Bienert & Schneider, 1995) conducted a group intervention with sixth grade students identified as either Aggressive-Disruptive, exhibiting mainly externalizing behaviors, or Sensitive-Isolated, exhibiting internalizing behaviors such as withdrawn behavior and social anxiety. The treatment design included 4 groups, two in which students with either deficit type received a treatment program targeting their specific behaviors (deficit specific treatment) and two in which students with either type of diagnostic characteristics received the treatment program for the opposite group (cross-over treatment).

The results indicated that Aggressive-Disruptive students receiving treatment specific to their deficits were rated as significantly more likeable by their peers ($p<.005$) and less aggressive based on peer ratings at a level that approached statistical significance. They also rated themselves as having a significantly higher social self-perception ($p<.005$). Aggressive-Disruptive students receiving cross-over treatment (for students identified as isolated and withdrawn) did not differ significantly between pre and post test on measures of social isolation/withdrawal, peer rated aggression or social self perception. Ratings of Peer Reported Likeability however, were significant between pre and post test, which indicated that Aggressive-Rejected students receiving cross-over treatment were rated as more likeable at post test ($p<.01$).

Sensitive-Isolated students receiving deficit specific treatment improved significantly on measures of peer rated likeability, peer reported isolation/withdrawal, and social self-perception ($p<.005$). Peer reported aggression did not change significantly between pre and post test. Students in this group receiving cross-over treatment (for aggressive-disruptive students) did not improve significantly on any measures except for social self-perception which improved

significantly between pre and post test ($p<.005$) (Bienert & Schneider, 1995).

A similar comparison of students with different diagnostic symptoms was made in a study by Lochman, Coie, Underwood and Terry (1993). Fourth grade students were identified as either aggressive and rejected or nonaggressive and rejected. Students were randomly assigned to one of four conditions: an aggressive/rejected intervention group (ARI), a rejected-only intervention group (RI), an aggressive/rejected control group (ARC) and a rejected-only control group (RC). All intervention group students received a social relations training program that included an aggression component which was modified for the aggressive/rejected group to provide more emphasis on controlling aggressive behavior.

The results of the study indicated that aggressive/rejected students receiving intervention tailored to their deficits were rated as significantly less aggressive and socially more accepted at post treatment than control group students on two thirds of the outcome measures. Teacher ratings of Aggression and Peer Rejection demonstrated improvement ($p < .03$) and ratings of Prosocial behavior suggested a trend of improvement, but were not statistically significant. Peer ratings of Social Acceptance and Aggression indicated significant improvement between pre and post test ($p<.04$), but no significant difference was seen in Social Preference ratings. The rejected only intervention group did not experience any significant change in pre to post test ratings (Lochman, Coie, Underwood & Terry, 1993).

Summary

Examining participant characteristics provides valuable information, although it may not provide definitive conclusions on what characteristics are most predictive of a positive outcome. The number of studies, study designs, and sample sizes were substantially different between

studies with students classified as EBD versus those considered at risk for such, making direct comparisons difficult. More than half of the studies (4 out of 6) with students classified as EBD had significant pre to post differences on more than half of the outcome measures and no studies reported significant outcomes on less than half of the measures. In half of the studies with students at risk, statistically significant changes between treatment and control groups were noted on more than half of the measures. However, the differences in study designs must be considered since the vast majority of studies with students classified EBD were conducted as single subject designs or compared pre and post data across time only and the vast majority of studies with students at risk were conducted as control group designs and considered group by time interactions.

Only one study examined the impact of severity of symptoms on outcomes (August, Realmuto, Hektner & Bloomquist, 2001), but provided meaningful information about the difference in results based on severity, with only the severe students in the sample experiencing significant improvement on some of the measures as a result of the intervention. This is important to consider when contrasting studies with students classified as EBD versus those identified as at-risk, since it is likely the students classified EBD are exhibiting more severe symptoms than those at risk for EBD.

The studies that separated outcome measurements based on internalizing versus externalizing symptoms, report more significant changes in externalizing behaviors than internalizing behaviors. In Barkley et al. (1999) externalizing behaviors improved significantly and internalizing behaviors were not significantly different between pre and post test for the intervention groups. The studies using First Steps to Success found similar results in which

Aggression ratings improved significantly and Withdrawn behavior was not significantly different between pre and post test for intervention students (Golly, Stiller & Walker, 1998; Walker, Hill & Kavanagh, 1998). One study was conducted with students identified as having either externalizing or internalizing symptoms at baseline and found that half of the outcome measures, including three measures of externalizing behaviors and one measuring internalizing behavior, indicated significant improvement at post test for students receiving intervention (McConaughy, Kay & Fitzgerald, 1998). A strong factor in these outcomes, however, is that externalizing behaviors were much more prevalent and clinically relevant than internalizing behaviors at baseline in many studies, so changes in internalizing symptoms are not only harder to see, but if internalizing behavior is normal at pre-test there is essentially no need for change.

Along with the consideration of the types of symptoms addressed in treatment is the issue of designing a treatment that targets specific symptoms. Only two studies separated subjects based on presenting symptoms and used unique intervention approaches depending on the traits being targeted. The results indicated that Aggressive-Disruptive and aggressive/rejected students receiving treatment specific to their deficits were rated as improving significantly on measures of aggression and social acceptance (Bienert & Schneider, 1995; Lochman, Coie, Underwood & Terry, 1993) . Sensitive-Isolated students receiving deficit specific treatment improved significantly on all measures except those measuring aggression (Beinert & Schneider, 1995) and rejected only students receiving treatment did not experience any significant change in pre to post test ratings by teachers or peers (Lochman, Coie, Underwood & Terry, 1993). These studies suggest that deficit specific treatment may be a promising approach to differentiating between and treating students with externalizing versus

internalizing traits, however a broader sample of studies would be necessary to determine whether this procedure leads to more successful outcomes overall.

Impact of Characteristics of Interventions

Introduction

The characteristics of social skills interventions may have a bearing on their success. The social skills training programs reviewed included combinations of the following three components: behavioral strategies, cognitive based approaches and emotional competency training. Much research has been done on behavioral components and the majority of studies reviewed included some type of behavioral strategy to facilitate skill acquisition, performance and/or generalization of social skills. Behavioral based instructional strategies include the use of roles plays, practice, modeling, coaching and feedback sessions to support skill acquisition. Behavioral strategies used to motivate performance and generalization of skills include: point or token systems, response cost programs, report cards, self-monitoring, and contracts. Rather than using direct strategies with students, some interventions involved providing behavioral consultation with teachers or parents.

Cognitive intervention components were employed in many studies and include approaches such as social problem solving, self control training and thought management. Some programs used cognitive-behavioral approaches, which involved the combination of cognitive training and behavioral strategies to facilitate the learning of cognitive based skills. Emotional competency approaches were also commonly applied and emphasize training in areas such as: anger management, feelings education and activities that reinforce affective skills such as empathy and expressing negative feelings appropriately.

In addition to a variety of training components, social skills instruction may be approached in a general or an individualized manner, just like math curriculum covers general topics in order at a certain pace, so may a general social skills curriculum. However, students are not all ready for the topics in a set curriculum, may have different individual paces, and may need to spend more time on certain topics. Individualization is accomplished by targeting the specific skills the child is deficient in, rather than teaching a broad range of skills. This may involve individual educational goals, such as an IEP or a group approach that matches intervention topics with the specific deficits of the participants. Child mastery is another individualization strategy that focuses on one skill and requires a mastery level of performance be reached before moving on to the next skill.

Behavioral Components

All of the studies analyzed included behavioral components in the instructional portion of training, such as role plays and modeling. The vast majority of studies also included some type of reinforcement system to encourage the generalization of skills to natural environments. These included token systems, group contingencies, and home notes. Because of the wide spread use of behavioral strategies, it is difficult to analyze the impact of this component in training. However, some studies emphasized behavioral strategies or addressed behavioral components as a variable in the research to determine the impact of these techniques specifically.

An intensive behavioral component was employed in the studies using the First Step to Success programs. This program emphasized behavioral management as the school based intervention and provided cognitive based social skills instruction as a home based component only. The results of the First Step to Success programs are very encouraging and stand out

somewhat from the overall results of social skills interventions in general (Walker, Stiller, Severson, Golly & Feil, 1998). The three studies using this program all reported significant improvement between pre and post treatment in the Academic Engaged Time of all subjects and those studies using rating scales to measure outcomes reported significant improvement in ratings on adaptive, maladaptive and aggressive behavior between pre and post test, only withdrawn behavior was not significant ($p<.05$) (Walker and Kavanagh, 1998; Golly, Stiller & Walker, 1998; Golly et al., 2000). Further details on the studies are outlined in the section on classroom interventions with parent training.

An interesting finding in the results of the twin based study, which provides data for each phase of the program (both the school based behavioral phase and the home based social skills instruction phase) is that in the first one week phase, when only the school based behavioral component was in place, there was significant improvement in all four twins' academically engaged behavior, which was merely maintained following the addition of the home based cognitive intervention component (Golly et al., 2000). This would suggest that the school based behavioral component could have been more critical to the outcome than the cognitive home based component, however, the study was not designed to assess this variable specifically.

In a single subject study (Herring & Northrup, 1998) a variety of intervention components were implemented separately, with a multiple baseline design to allow for evaluation of individual strategies. The full study is outlined in the section on special education setting/ small group social skills instruction. To summarize, it was found that social skills instruction alone resulted in very little improvement over baseline levels of inappropriate behaviors and acquisition of appropriate behaviors. Behavioral based instructional strategies to generalize

social skills, namely coaching and prompting in the natural setting, resulted in a significant drop in inappropriate behaviors compared to baseline. Performance based behavioral strategies, such as shaping the student's behaviors using response cost and group contingencies, were associated with the greatest level of change between baseline and intervention, with a significant increase in appropriate behaviors. These results were strongly associated with the direct application of behavioral strategies, since a dramatic drop in appropriate behaviors occurred when the group contingency was withdrawn.

A three phase program with different behavioral components, described in detail in the section on special education setting/ small group social skills instruction, also provides information on the impact of independent strategies (McMahon, Wacker, Sasso & Melloy, 1994). In the first phase of the study, behavioral contracts were used where the three target students agreed to practice the skills taught and teacher praise was provided as reinforcement. In the second phase, intermittent tangible reinforcement was provided contingent on performance of skills in the classroom. In the third phase, peers as well as target students received tangible reinforcers for demonstrating skills on the playground. Throughout the three phases, social skills training occurred. A withdrawal phase was then introduced, in which all training components, including social skills and reinforcement, were withdrawn. Finally, during post-training and maintenance phases, social skills training was withdrawn, but behavioral reinforcement strategies were re-applied.

The results indicate that although significant improvement in positive social behaviors and reduction in inappropriate behaviors was seen in the first treatment phase, even greater improvement was seen in the second and third phase. During the withdrawal phase one student's

social behaviors declined, and the other two students experienced a significant drop in positive social behaviors as well as an increase in inappropriate behaviors. A dramatic shift was seen during post-training with the re-introduction of behavioral strategies, without the social skills component. Social behaviors increased and inappropriate behaviors decreased at a frequency that approached phase one levels. These outcomes were consistent through the maintenance phase (McMahon, Wacker, Sasso & Melloy, 1994).

Cognitive Training and Emotional Competency Components

In addition to behavioral components, most social skills training programs include a curriculum that typically emphasizes cognitive based and/or emotional competency training. Cognitive training teaches children to use cognitive skills, such as problem solving strategies, to resolve interpersonal conflicts, enhance decision making processes and learn new ways of thinking in social situations. Emotional competency training, or affective education, is designed to increase emotional awareness and expression of feelings, develop empathy, increase emotional self control and manage anger. These approaches are sometimes used in isolation in social skills training and other programs combine these components for a multi-modal approach.

In a review of social competency training for primary prevention with regular and at risk students, Durlak and Wells (1997) opted to analyze the content of treatment as a variable in the research. Programs were divided into two categories, including interpersonal problem solving, or cognitive based approaches, and affective education, or emotional competency training. The authors found that programs were equally effective, with no significant differences between outcomes for either type of program.

In a review of social emotional learning (SEL) programs, the content of effective

programs was described as including a combination of emotional awareness and skills for managing feelings, perspective taking to enhance empathy, responsible decision making and problem solving skills and social interaction skills, such as active listening and conflict resolution (Payton, Wardlaw, Graczyk, Bloodworth, Tompsett & Weissberg, 2000). One of the most well known social competency programs, Second Step, specifically includes a combination of constructs in its curriculum, namely: empathy, social problem solving and anger management skills. Several studies were conducted evaluating the results of Second Step programs with regular education students. Results indicate that children participating in the program demonstrated significantly higher problem solving skills and improved their social perspective taking abilities between pre and post test compared to no improvement for control group students (Frey, Hirschstein, & Guzzo, 2000).

In the current review of social skills training programs, it was found that 17 out of the 22 studies emphasized cognitive and/or emotional competency components in the curriculum in addition to behavioral components. Eight studies included both cognitive and emotional competency components in their social skills curriculum. Six studies used cognitive or social problem solving strategies alone and 3 studies utilized emotional competency or affective education specifically. The remaining 5 studies did not describe the type of instructional components that were used as specifically cognitive or emotional competency based. Two included training on isolated, specific skills, such as using an appropriate tone of voice and two studies included only general social interaction training, such as joining in with peers. One study did not specify the social skills curriculum used, but included references to several curriculum programs.

In evaluating the outcomes of those studies including both cognitive and emotional components versus those that included either cognitive or emotional components, there are mainly similarities in effectiveness with the exception of a possible trend for higher levels of effectiveness with programs emphasizing emotional competency. Of the eight studies that included both constructs, two reported significant differences overall or on more than half of the outcome measures (Barkley et al. 1999; Bienert & Schneider, 1995). Four studies reported significant improvement for intervention groups on approximately half of the outcome measures (Conduct Problems Prevention Research Group, 1999; Kamps et al. 2000; Kamps et al. 1999; Lochman et al. 1993) and two studies reported results that were not significant overall, with both treatment and control groups improving (August et al. 2001; Braswell et al. 1997).

Of the six studies that used only cognitive components, three studies reported significant improvement for children in intervention groups on more than half of outcome measures (Golly et al. 2000; Golly, Stiller & Walker, 1998; Walker & Kavanagh, 1998), one reported significant outcomes on half of the measures (Serna et al. 2000), and two reported significant results for intervention students on less than half of the measures (Serna et al, 2002; Vitaro & Tremblay, 1994).

The three studies that used emotional competency or affective education components alone reported significant outcomes in favor of intervention students on more than half of the outcome measures for all three studies, which stands out as the most compelling of all treatment component combinations (Kamps, Tankersley & Ellis, 2000; Middleton & Cartledge, 1995; Tankersley & Kamps, 1996).

Individualization Procedures

Individualization procedures have been emphasized in the research as a key component to successful social skills interventions. There are a variety of approaches to individualize training. Individual instruction, rather than small group or classroom based instruction is one approach. Few studies take this approach, which is understandable since students are being taught skills of a social nature, it is difficult to learn and perform these skills in isolation. A second approach is to match instruction to the social skills deficits of the students. This is not a common practice, but has been used in a couple of studies involving social skills group instruction . Third, is to develop individual goals for students, such as with a formal IEP. This is commonly done in studies based in special education settings, but may also be done in settings with students at risk.

Two studies reviewed included individual instruction procedures as part of intervention, one of which also matched treatment to social skills deficits. A third study used a group setting only to provide matched treatment for specific social skills deficiencies. All three studies are described in detail in the section on special education settings/ small group social skills instruction. In the first study, the target student received instruction individually for the specific skills determined to be the most important for his social success (Herring & Northrup, 1998). This was a short phase of the overall intervention procedure, which also included small group instruction with model peers. The findings of the study indicated that the individual instruction, with the student and therapist alone, was not effective in producing significant behavioral change, however, the student was able to achieve mastery with the skills in the therapeutic setting in only three sessions and then moved on to the next phase of the intervention.

Lochman, Coie, Underwood and Terry (1993) conducted social skills interventions with a

combination of individual and group instruction. Students received 26 individual sessions and 8 small group sessions. The curriculum was also adapted to the type of social deficits displayed by the child, whether aggressive/rejected or rejected only. Half of the outcome measures demonstrated that aggressive/rejected intervention students experienced significantly greater improvement compared to aggressive/rejected control group students ($p<.04$). Self-concept declined significantly for both aggressive/rejected and rejected only students receiving intervention compared to control group students ($p<.01$). However, this study did not control for "matched treatment" as a variable, which makes it difficult to draw conclusions regarding the effectiveness of individualizing treatment.

Matching treatment to social skills deficits was also included in a study by Bienert and Schneider (1995). In this study, students at risk for emotional or behavioral disorders were identified as either aggressive/disruptive or sensitive/isolated. The treatment was designed to address the social skills needs of each diagnostic group separately. The study design included four groups, two which received the training specific to their social skills deficits and two cross-over treatment groups receiving training opposite of their social skills deficits. A wait-list control group was also included as part of the design. The results indicated that all students receiving treatment specific to their deficits improved significantly on three out of four socio-metric and self-rating measures ($p<.005$). The one measure on which there were no significant changes for either group was the one rating the opposite deficits, ie. ratings of aggression did not change for sensitive/isolated students. Students receiving cross-over treatment improved significantly on only one out of four outcome measures. Peer rated likeability still increased for aggressive/disruptive students, and sensitive/isolated students experienced improvement in self-

perception.

Several studies approached individualization by developing individual student goals. Four studies were conducted in special education settings and used formal IEP goals for students (Blake, Wang, Cartledge & Gardner, 2000; Flicek, Olsen, Chivers & Kaufman, 1996; Herring & Northrup, 1998; McMahon, Wacker, Sasso & Melloy, 1994). One additional study developed individual goals using a team approach, but without a formal IEP (McConaughy, Kay & Fitzgerald, 1998;1999). The other two studies emphasized individualization in the acquisition of social skills goals by tracking individual child mastery of specific skills (Serna, Lambros, Nielsen & Forness, 2002; Serna, Nielsen, Lambros & Forness, 2000).

The studies using IEP goals were mostly based in the special education setting, either a resource classroom or a self-contained classroom, with the exception of one study based in a Combination Classroom, or regular education setting with a special education teacher as case manager and consultant. All studies used students formally classified with Emotional or Behavioral Disorders as participants. All four studies used single subject designs and had one to six subjects. The studies are described in detail in the sections on Regular Classroom/Whole Class Social Skills Training, Special Education Setting/Small Group Social Skills Instruction and Specialized and Alternative Educational Settings.

The results of the studies indicated there were significant improvements on the vast majority of all measures. Significant improvement in positive behavior and significant decreases in negative behavior were reported in two studies of 6 to 12 participants each, both conducted in a self-contained classroom for students with EBD. The mean number of aggressive behaviors of the students in both studies dropped from 5 incidents at baseline to less than 1 incident during

intervention and follow up. Socially supportive behaviors increased from 1 at baseline to 4.7 during intervention and follow up (Blake, Wang, Cartledge & Gardner, 2000).

A study conducted in a Combination Classroom reported significant improvement for all three students on Behavioral Reports ($p < .05$) and clinically meaningful changes on the Teacher's Report Form from a Total Problems mean score of 72 (SD=7.81) at pre-intervention to a mean score of 47 (SD=5.29) at post-intervention, indicating a drop from clinical ranges to normal ranges of reported behaviors and symptoms. Academic measures did not reflect significant changes (Flicek, Olsen, Chivers & Kaufman, 1996).

All three students in a multiple baseline/ multiple intervention phase study increased their appropriate behavior and decreased inappropriate behavior in playground settings, from an average of 6 negative behaviors at baseline to 1 negative behavior during intervention. Appropriate behaviors increased from 1.3 at baseline to 5 during intervention. On task behavior in the classroom increased by approximately 400% during intervention compared to baseline for the 3 students on average. Results were not completely stable, as demonstrated by returns to baseline values when treatment was withdrawn. In addition, teacher reports did not indicate significant improvement for any of the three students (McMahon, Wacker, Sasso & Melloy, 1994).

In a single subject study by Herring and Northrup (1998) a dramatic improvement in the subject's frequency of whining and complaining was seen as well as use of appropriate tone of voice as a result of intervention. Negative behaviors averaged 11 per session and positive behaviors occurred once per session on average during baseline. These averages reversed at the peak of the intervention, with only 1 negative behavior and 11 positive behaviors on average per

session. Improvement, however, was not maintained across settings or when the treatment was withdrawn.

Individualized student goals were applied in one study that included students at risk for emotional or behavioral disorders, but not formally classified. Rather than having an actual IEP, students had individual goals developed by a team including the parent and teacher as well as additional staff and consultants. The study compared students receiving social skills intervention based on individual goals and including a parent/teacher partnership (PTAR) with students who received only general social skills training (SS). Based on rating scales, the results indicated that both groups improved significantly, with no significant differences between groups. Direct observations at the end of the first year of the study did show significantly greater improvement for PTAR students in recess settings (ES = 1.04) and classroom settings (ES = .62). The second year, however, there were not significant differences between the groups (McConaughy, Kay & Fitzgerald, 1998).

Child Mastery is an individualized approach used in two studies based in pre-school settings with students at risk for emotional or behavioral disorders, but not formally classified as such. The studies are described in detail in the section on regular classroom/ whole class social skills training. A control group design was used in the first study with a total of 84 students, 53 of whom were in the experimental group and 31 who were in a control group. The curriculum focused mainly on social interaction skills and problem solving using story based role-plays to teach skills and interactive practice to assess acquisition of the skill. Each child was assessed individually and practice continued until child mastery was reached with each skill. The results showed that experimental subjects were rated as improving significantly over control students on

half of the outcome measures used ($p < .04$) with an overall effect size of .36 (Serna, Nielsen, Lambros, & Forness, 2000).

The second study was similar in the curriculum and interactive practice component which, again, was continued until each child reached mastery with the skill. The design was different in that only 8 experimental children were used and 1 control group child and statistical comparisons were not possible. Two out of 8 experimental children were no longer in the clinical range at post test on the outcome measure used and the control student remained in the clinical range. Additionally, 3 other students in classrooms not receiving the intervention were considered to be at risk by the end of the study (Serna, Lambros, Nielsen, & Forness, 2002).

Summary

Based on the review of selected studies and evaluation of intervention characteristics, there appear to be several clues as to what characteristics may contribute to the most effective interventions, including behavioral components, emotional competency and individualization. Behavioral components have a distinct impact on the success of social skills interventions, especially when evaluating single subject designs with multiple interventions and baselines, since it is difficult to determine the individual impact of behavioral components when they are included as part of a multi-modal training program. Few studies have been designed to evaluate the impact of separate components, however, in The First Step to Success program behavioral and cognitive components are delivered in separate settings and with somewhat different time frames, allowing the strength of the impact of behavioral strategies to be more obvious. Specific behavioral strategies that appear to be the most effective are those developed to reinforce skill performance and generalize behaviors into the natural environment.

It appears that emphasizing a cognitive component only in the skills curriculum is at least as effective if not more effective than applying both cognitive and emotional competency components. A possible reason that both cognitive and emotional competency approaches are not more effective is that if both constructs are emphasized, there may be a wider range of instructional concepts, which may be difficult for students to develop a level of mastery with than if a more narrow range of skills are taught. There is a possible trend in more positive outcomes for programs emphasizing emotional competency alone, however no conclusions can be drawn, since there were only 3 of these studies compared to 6 cognitive only and 8 combined studies, which does not allow for an equally weighted comparison.

A number of individualization procedures showed promising results, including matching treatment to diagnostic characteristics and the use of individualized goals. Only two studies used this approach and also controlled for matching treatment as a variable. The results were compelling in one study, with significantly more improvement for students receiving matched treatment than students receiving the opposite treatment and the second study reported significant results of deficit specific treatment for the students with externalizing characteristics only.

Of the five studies evaluated that used individualized student goals, two reported significant results overall, two reported significant results on half of the outcome measures during phases of treatment, and one reported significant results on less than half of the outcome measures. Child mastery is an approach that is so far limited in its use, but that lends itself well to individualization in a broad range of settings. This is naturally done with IEP goals in many cases, since goals tend to be written to include specific mastery criteria, however, any social skills program could specify the level of mastery and track individual child performance with

mastery goals in mind.

Impact of Outcome Measurement

Introduction

Outcome measurements play an important role in determining the perceived impact of social skills interventions. Selecting meaningful outcome measures is one of the four areas recommended as most important in the future of social skills intervention research (Gresham, 1997) and poor selection of measures contributes to the low effect sizes reported in much of the current research (Gresham, 1998). A variety of measurements have been used across studies to assess changes in pre and post constructs. Behavioral observations and rating scales are two of the most commonly used measurements. Direct observations are one of the most recommended methods due to the quantitative and objective nature of the measurement, whereas rating scales can be subjective and are vulnerable to rater bias and variability. Self reports and socio-metric scales are also used. Self reports are only as valid and reliable as the student is honest and accurate in their self judgment and socio-metrics provide relevant information as to peer acceptability, but may be limited by biases and lack information as to the basis for the peers' ratings. Occasionally academic measures and other measures, such as social problem solving scenarios are used in outcome assessments. The type of outcome measurement may impact the perceived success of an intervention, therefore, the best practice in most cases is to use a comprehensive assessment process to gain an overall picture as to the successfulness of the intervention (Mathur & Rutherford, 1996).

In evaluating overall outcomes, it is important that outcome methods are measuring the behaviors specifically targeted by interventions. Some studies attempt to measure indirectly

related, or even unrelated symptoms and constructs not specifically addressed in the intervention. For example, academic measures are occasionally used to measure the effectiveness of social skills interventions. These studies typically report fairly low effect sizes, which is not surprising, considering that social skills interventions do not target academics specifically. Another example is rating change in withdrawn behavior when interventions mainly targeted aggression. Although it provides relevant information to look at loosely related constructs, it is important to recognize that intervention may have been actually targeting different skills or behaviors when evaluating outcomes.

Comparison of Outcome Measures

The most commonly used outcome measures among the studies evaluated are rating scales and formal observations. Seventeen of the 22 studies used observations and 15 used rating scales to measure change. Four studies used academic measures, four used socio-metric ratings and four used self-reports. Other outcome measures included changes in DSM diagnoses, social cognition measures, and non-standardized behavioral reports, such as behavior report cards.

Studies in which observations were used resulted in the highest degree of change between pre and post test. Of the 17 studies in which observations were used, significant differences between pre and post test were found on all behaviors in 6 studies, all of which used single subject designs. Positive behaviors increased and negative behaviors decreased in four studies (Blake, Wang, Cartledge & Gardner, 2000; Herring & Northrup, 1998; McMahon, Wacker, Sasso & Melloy, 1994). Academic engaged time improved significantly in two studies (Golly et al. 2000; Golly, Stiller & Walker, 1998) and a significant reduction in aggressive behavior was observed in one study (Middleton & Cartledge, 1995). In one control group study, significant

pre to post test improvement in observed academic engaged time was found for treatment students over control group students (Walker & Kavanagh, 1998).

Two studies reported significant improvement between pre and post test for the majority of behaviors observed (social interaction, compliance and disruptive behaviors), both of which were control group designs (Kamps, Tankersley & Ellis, 2000; Tankersly & Kamps, 1996). Another control group design study reported significant group differences at post test on two out of 3 observation measures of aggressive behavior, but lacked pre test data (Conduct Problems Prevention Research Group, 1999). Four studies, all of which used control group designs, reported significant pre/post differences between groups on half of the behaviors observed, including combinations of internalizing and externalizing behaviors, on task and anti-social/problem behaviors or classroom and recess behaviors (Barkley et al. 1999; Kamps et al. 2000; Kamps, Kravits, Stolze & Swaggart, 1999; McConaughy, Kay & Fitzgerald, 1998). One study reported only 1 out of 4 behaviors improved significantly, namely interference behaviors, between pre and post test for both treatment and control groups (Braswell et al. 1997).

The majority of the 15 studies using rating scales for outcome measurement used control group designs. One study reported significant differences in Total Problem scores on the TRF between pre and post test with all pre test scores in the clinical range and all post test scores subclinical; however, no control group was used in this study (Flicek, Olsen, Chivers & Kaufman, 1996). Two studies reported that more than half of the rating scales, measuring adaptive and maladaptive behaviors as well as aggressive and withdrawn behaviors, indicated significant improvement between pre and post test for treatment groups compared to control groups (Golly, Stiller & Walker, 1998; Walker & Kavanagh, 1998). In three studies, on half of

the rating scales used, students in the treatment groups improved significantly more between pre and post test on measures of aggression, attention, adaptive behaviors and social skills, than control students (Barkley et al. 1999; Kamps et al. 2000; Serna, Nielsen, Lambros & Forness, 2000).

The remaining nine studies reported outcomes on rating scales that were not significant for the most part. In two studies, treatment groups improved significantly more between pre and post test than control students on only one-fourth of the variety of standardized and individualized rating scales. Ratings of appropriate requests, aggression, rejection and clinical behaviors were significant (Kamps, Kravits, Stolze & Swaggart, 1999; Lochman, Coie, Underwood & Terry, 1993). One study reported a drop in clinical levels at pre-test to subclinical levels for one-fourth of the participants (Serna, Lambros, Nielsen & Forness, 2002), another study reported significant differences between treatment and control groups on an aggression scale only at the third year follow up (Vitaro & Tremblay, 1994), one reported significant group differences on the BASC only for the severely aggressive subgroup (August et al. 2001), and one study reported significant differences on only 2 out of 8 rating scales, using a variety of subscales measuring social competence and aggressive-disruptive behavior change, between treatment and control groups at post test (no pre test data was available) (Conduct Problems Prevention Research Group, 1999). Two studies utilizing standarized rating scales reported significant time effects for both groups on measures of externalizing, internalizing, and social behaviors, between pre and post test, but no group differences were found (Braswell et al. 1997; McConaughy, Kay & Fitzgerald, 1998). Finally, one study reported that all differences found using teacher ratings of students' daily behavioral performance were not significant for treatment compared to control

groups between pre and post test (McMahon, Wacker, Sasso & Melloy, 1994).

Socio-metric ratings were used in four studies, all of which employed control group designs. One study reported that students in the treatment group improved significantly more than students in the control group between pre and post test on all socio-metric measures, both peer status and peer nominations (Biernert & Schneider, 1995). Another study found significant pre to post group differences in favor of the aggressive/rejected treatment group on half of the socio-metric measures, including social acceptance and ratings of aggression, but no significant differences for rejected only students (Lochman, Coie, Underwood & Terry, 1993). One study found significant improvement for those in the treatment group on peer ratings of disruptiveness compared to those in the control group at 3 year follow up, but not at one or two years post treatment (Vitaro & Tremblay, 1994). In the fourth study, one third of the sociometric measures (peer social preference and peer-nominations) indicated significant in favor of the treatment group at post treatment, however, there were no pre-treatment values to use as comparison between pre and post for either group (Conduct Problems Prevention Research Group, 1999).

Self-reports were used in four studies, all of which were conducted as control group designs. Significant pre to post test differences were seen for treatment compared to control groups in two studies, one measuring self perceptions of competence and the other measuring general self-worth ($p<.01$) (Lochman, Coie, Underwood & Terry, 1993; Biernert & Schneider, 1995). In the third study, meaningful differences in self-reports of delinquency between treatment and control groups at 3 year follow up were found in favor of the treatment group (Vitaro & Tremblay, 1994). In the fourth study, both treatment and control groups improved between pre and post test on self-reports of adjustment and maladjustment using the BASC-Child

Scale (Braswell, et al., 1997).

Academic measures were the least compelling of all the outcome measures in the studies evaluated. Four studies used standardized academic tests to measure changes between treatment and control groups and/or pre and post treatment. Three studies used control group designs and all but one study compared pre and post values, the fourth of which compared post treatment values only. Of the four studies one reported significantly higher scores for the treatment group at post treatment compared to control group scores on two out of three academic measures (Conduct Problems Prevention Research Group, 1999). Another study reported that treatment groups improved somewhat over control groups between pre and post treatment (ES = .26) (August, Realmuto, Hektner & Bloomquist, 2001). One study indicated that there were no significant differences between pre and post test for treatment compared to control groups (Barkley et al., 1999;2000) and the fourth study found no significant improvement between pre and post test for any of the intervention students (Flicek, Olsen, Chivers & Kaufman, 1996).

Of the four additional measures used, social cognition measures were compelling with treatment groups improving significantly over control group students comparing pre and post test scores (ES = .37) (Conduct Problems Prevention Research Group, 1999). Behavior reports also demonstrated significant change, with all target students improving between pre and post test ($p<.05$) (Flicek, Olsen, Chivers & Kaufman, 1996). The DSM diagnostic criteria demonstrated some change with what appeared to be fewer symptoms at post test for the treatment only group than the parent training only group, but differences were not statistically significant and the combined treatment group demonstrated no change, which seems counter-intuitive (Barkley et al., 1999;2000). Weekly teacher ratings demonstrated the least change in pre to post test

comparisons between treatment and control groups (Kamps, Tankersley & Ellis, 2000).

Discrepancies in outcome measures

Some studies used only one type of outcome measure whereas others used two or more which allows for a more comprehensive assessment. A total of 7 studies used only one outcome measure, usually either rating scales or direct observations. Ten studies used a combination of 2 outcome measures, three used 3 measures, one used 4 measures and one used 5 measures. Of those that used more than one measure, approximately half of the studies reported consistent outcomes across all measurements and half of the studies reported mixed findings or discrepancies across the measures used.

A common discrepancy across outcome measures is that between direct observations and teacher ratings. In one of the studies evaluated, significant reductions in 4 out of 5 aggressive behaviors were observed between pre and post treatment ($p<.04$) but teacher perceptions of aggression between pre and post treatment did not change (Kamps, Tankersley & Ellis, 2000). In another study, significant time effects only were seen on rating scales for treatment and comparison groups, but group differences were found in favor of the treatment group on direct observations (ES = .61 - 1.04) (McConaughy, Kay & Fitzgerald, 1998). Other researchers observed significant improvement of on task behavior as well as significant reductions in problem behaviors, however, teacher ratings were not significantly different between pre and post test (McMahon, Wacker, Sasso & Melloy, 1994).

Discrepancies were also common between parent and teacher measures (Middleton & Cartledge, 1995). Six studies used both parent and teacher rating scales, five of which reported results separately. In one study, parent and teacher ratings were very consistent on all measures

(Conduct Problems Prevention Research Group, 1999). The other four studies reported mixed consistencies and discrepancies between teacher and parent ratings. In one study, teacher ratings on the BASC did not change significantly over time or by condition, but parent ratings on the BASC indicated significant improvement for both treatment and control groups. Problem solving scales were rated similarly by both teachers and parents, with both groups demonstrating improvement across time (Braswell et al., 1997).

In three out of four studies, teachers reported more significant effects across time and/or condition than parents. This contrast is understandable considering that treatment is typically conducted in the school setting and targeted behaviors are those identified as relevant in the school context. Contrasts were found between teacher and parent ratings of problem behaviors on the SSRS, with significant differences between treatment and control groups on pre and post test teacher ratings ($p<.04$) and no significant differences were reported on parent rating scales. However, social competencies were rated as improving by both parents and teachers at a significant level for treatment groups (Serna, Nielsen, & Lambros, 2000). No significant differences in parent ratings on the CBCL were found comparing treatment and control groups, but significant group differences were reported by teachers for Attention and Aggression on the TRF (Barkley et al, 1999). Teachers reported significant pre to post test improvement for both treatment and control group students on problem behaviors on the SSRS and TRF and social competency scales on the SSRS. Parents reported significant improvement on ratings of problem behaviors pre to post test for both groups on the SSRS and CBCL, but no significant differences were reported for social competency on the SSRS (McConaughy, Kay & Fitzgerald, 1998).

Measuring Behaviors Targeted in Treatment

Studies measuring different behaviors or constructs also report some mixed findings. For example, problem behaviors may be rated as improving significantly, but social competency may not change significantly across time. Some of the mixed findings are also explained by evaluating the behaviors directly targeted in treatment compared to those that are not directly targeted, such as academics or internalizing behaviors.

The goal with most treatment approaches is to both reduce the problem behaviors, or competing behaviors, and increase positive social skills and competencies, however changes in both positive and negative behaviors are not always demonstrated equally. There were mixed findings in the studies reviewed, however, negative behaviors changed more consistently than positive behaviors. In one study, aggression improved significantly in the group with the most severe behavioral symptoms, however, social competence did not improve significantly in any groups (August et al., 2001). In another study, greater change was seen in negative behaviors, with significant pre to post differences across groups on 3 out of 6 scales and significant change in only 1 out of 5 appropriate behavior ratings (Kamps, Kravitz, Stolze, & Swaggart, 1999). A third study found that more significant changes were seen with ratings of aggression (3 out of 3 scales) than with ratings of pro-social behaviors (1 out of 4 scales) for the aggresssive/rejected intervention group (Lochman, Coie, Underwood & Terry, 1993).

Differences between externalizing behaviors and competency ratings were seen in a study comparing parent teacher action teams and social skills instruction only. Externalizing behaviors improved for groups receiving both parent and social skills components compared to groups receiving social skills instruction only, with group differences on 3 measures and

improvement across time only on 2 measures. Differences in competency ratings were seen between groups on 1 measure, and differences for time interactions only were seen on 2 measures. Differences in competency scores were not significant between groups or across time on 2 measures (McConaughy, Kay & Fitzgerald, 1998).

In two studies, greater changes were noted for positive behaviors with significant changes on 6 out of 8 social cognition and competence scales from pre to post test compared to significant changes on 2 out of 9 aggressive-disruptive behavior scales (Conduct Problems Prevention Research Group, 1999). Similar differences were found in the second study, with more significant pre to post differences for observations of positive behaviors (4 out of 6 scales) than negative behaviors (3 out of 8 scales) across groups (Kamps et al., 2000).

Behaviors indirectly targeted during interventions may or may not improve. Students receiving interventions to reduce aggression and increase academic engaged time were also rated on their level of withdrawn behavior. Aggression levels pre-treatment were clinical, however withdrawn behavior was subclinical. Aggression was significantly reduced following treatment, but withdrawn behavior was not significantly different (Golly, Stiller & Walker, 1998; Walker & Kavanaugh, 1998). Response generalization may occur more frequently with similar behaviors, as in the case of a single subject study in which the target student received interventions for complaining and whining specifically, but other negative behaviors, such as non-compliance improved as well, even though compliance was not directly targeted (Herring & Northrup, 1998). In the majority of studies it is difficult to evaluate whether outcome measures were used to evaluate changes in behaviors that were targeted directly or indirectly in treatment due to vague or general treatment descriptions. For example, several studies measured aggression, social

competency and ability to maintain attention; the description of the intervention states that self-control training or a training package was used. Without the specific description of the treatment it is difficult to determine whether students were specifically trained to manage anger, increase positive social interactions and to stay on task (Barkley et al. 1999; McConaughy, Kay & Fitzgerald, 1998).

Externalizing behaviors are frequently more sensitive to change than internalizing behaviors. This may be explained by considering that the areas typically addressed in social skills curriculum are related to resolving conflicts and managing aggression rather than techniques to manage depression or anxiety. Students with externalizing behaviors are also more often involved in social skills remediation than students with internalizing symptoms, as was discussed in the section on participant characteristics. In the studies evaluated, significantly greater pre to post test and group differences were seen for externalizing behaviors than internalizing behaviors (McConaughy, Kay, & Fitzgerald, 1998; Barkley et al., 1999).

Academic measures are sometimes used to evaluate outcomes of social skills interventions, however, academic performance is not being targeted directly. In theory, academic performance should improve when behavioral symptoms are managed if behaviors are interfering with educational attainment, however, this is not achieved in many cases, at least initially. As reported in the above section, academic changes were not significant in 2 of the 4 studies that used them among their outcome measures (Barkley et al., 1999;2000; Flicek, Olsen, Chivers & Kaufman, 1996). The Vineland adaptive scale was used in one study as an evaluation measure, however, the scales used to compare pre and post intervention were not directly related to social skills and not surprisingly, the outcomes were only mildly significant at best. Daily Living Skills

improved for experimental students with a mild effect size comparing pre to post levels (ES = .25) and Communication did not improve (p>.52) (Serna, Nielsen & Lambros, 2000).

Summary

In summary, measurements are a critical component in reporting outcomes of social skills intervention studies. In the studies evaluated, researchers were most likely to note significant changes over time when using observational measures to evaluate outcomes. All but one study using observational measures reported statistically significant pre to post test improvement for treatment students on half or more of the scales used. In more than half of the studies using rating scales, one fourth or less of the measures were significantly different between pre and post test. Socio-metric, self rating scales and other measures are used less frequently, but three out of the four scales used in all three categories demonstrated significant pre to post test differences between groups for at least half of the measurements. Academic measures were the least compelling of all outcome measurements used.

Discrepancies need to be considered as well in evaluating outcomes. Based on the studies evaluated, it is fairly common for discrepancies to occur between different types of outcome measures, especially observations and rating scales. Discrepancies may also occur between teacher and parent ratings of students, as was found in four out of the five studies reporting the values of both. The setting of the treatment (ie school versus home) and behaviors targeted may need to be considered when evaluating these differences. The type of behavior being measured is an important area of consideration as well. Problem behaviors may decrease and positive social behaviors may increase equally, as was the case in 7 out of the 13 studies that measured both positive and negative behaviors. However, negative behaviors were measured as changing

significantly more than positive behaviors in four studies, whereas positive behaviors changed significantly more than negative behaviors in only two studies. Despite the discrepancies, it is still best practices to use multiple methods of measurement for a more comprehensive view of the outcome of social skills interventions.

In light of encouraging the use of multiple methods of measurement, it needs to be emphasized that outcome measures need to address behaviors directly targeted in treatment. It is important to note the baseline levels of behavioral symptoms being measured. For example, students identified with predominantly externalizing behaviors prior to intervention should not be expected to demonstrate significant improvement on internalizing scales. However, many studies measure both externalizing and internalizing symptoms without emphasizing this factor. Similarly, studies that measure areas that are indirectly targeted in treatment, such as academic scales or adaptive behaviors such as communication, may portray results that are not significant, but these areas should not be expected to change as a result of social skills training.

Summary of Factors Impacting Social Competency Training

The factors that potentially contribute to the success of social skills programs for students classified as or at risk of emotional/behavioral disorders include the setting of intervention, the timing of intervention, the characteristics of the participants and the characteristics of the interventions. The way in which outcomes are measured also plays a role in the perceived success of interventions.

The studies reviewed were conducted in three types of settings: regular education settings, special education settings or small groups and specialized or alternative educational settings. Based on the studies reviewed, the 11 studies based in regular education settings and

the 7 studies conducted in special education settings or small groups produced similar outcomes. Although it was not possible to compare the studies using a common metric, there was a similar breakdown in the number of significant and not significant outcomes. The 3 studies conducted in specialized or alternative settings resulted in more significant outcomes overall, suggesting that interventions conducted in this setting may lead to greater improvements, however, the small number of studies does not allow for a clear conclusion to be drawn.

Studies including parent training as a component of treatment essentially extended treatment beyond the school setting to the home or clinical setting. Approximately half of the 21 studies covered in the section on settings included parent components. Research emphasizes the need to include this component for successful outcomes, however, the results of the comparison of the studies reviewed indicated that outcomes were only slightly more significant for interventions including a parent component. In the three studies that controlled for the parent component, two indicated that there was no significant difference between groups with and without the component and one reported that there was a significant improvement in groups with the parent component compared to those with social skills training only. Reasons for the lack of conclusive support for parent training may be lack of parent attendance or follow through as seen in several studies and may also involve parental readiness for change (Barkley et al., 1999; August et al., 2001). There is also a possible "sleeper effect" or delay in the impact of parent training that is more apparent over time as was found in one study with significant group differences at three years post treatment, but not sooner (Vitaro & Tremblay, 1994).

The timing of intervention was divided into five age groups, with 3 to 5 studies in each group. Early intervention studies were considered to be those that targeted students in pre-school

and kindergarten. First grade and second grade students were considered to be somewhat borderline for early intervention and the fifth group, with a mean age of approximately 10 years old or fourth grade, were not considered to be early intervention. The results of the comparisons between age groups did not indicate that there is a strong difference between the outcomes of early intervention versus later intervention. The majority of studies conducted with pre-school and kindergarten age groups as well as older elementary school age groups (mean age 10) reported significant outcomes. There were some studies reporting significant outcomes in the first and second grade age groups, but overall the studies in these age groups reported slightly fewer significant outcomes. There is not a strong correlation of age with the success of intervention based on the studies examined.

Students participating in the studies reviewed were either classified as having an emotional/behavioral disorder or identified as being at risk of developing such. The majority of studies were conducted with at-risk samples (16 studies) compared to studies with students classified EBD (6 studies). The majority of the studies with students with EBD had significant outcomes, with 4 out of the 6 studies reporting significant pre to post differences on more than half of the measures. In just half of the studies with students identified as at-risk, statistically significant differences were seen between treatment and control groups on more than half of the outcome measures. However, the study designs between the two categories were notably different. Most studies conducted with students with EBD used single subject designs or compared pre and post test data only and most studies with at risk students used control group designs. Therefore, the differences in outcomes may be accounted for by the type of statistical comparisons in the study design rather than the difference in classification status of the students.

Diagnostic characteristics of students with emotional and behavioral disorders may play a role in the outcome of treatment. Of the studies that looked separately at externalizing behaviors and internalizing behaviors, most indicated that there were more significant changes in externalizing behaviors over time. However, it is important to note that baseline levels of students' externalizing behaviors were significantly higher and reached clinical levels more often than internalizing symptoms, therefore changes in internalizing behaviors would be less noticeable. Two studies (Lochman, Coie, Underwood & Terry, 1993; Bienert & Schneider, 1995) designed separate treatment programs to target different behavioral symptoms, however, only one study controlled for matching treatment to symptoms as a variable. In this study, students receiving treatment specific to their behavioral deficits or symptoms demonstrated greater gains than those receiving the opposite, or cross-over treatment, suggesting that this may be a factor impacting intervention success (Bienert & Schneider, 1995). However, based on the results of one study no strong conclusions can be drawn.

Intervention characteristics that may play a role in overall success include behavioral, cognitive and emotional components as well as individualization strategies. Behavioral components were included as part of a comprehensive intervention in all studies reviewed, which makes isolating this component difficult, however, a few studies controlled for behavioral components to some extent. The use of group contingencies stood out as the most effective behavioral strategy in one study (Herring & Northrup, 1998) and the intensive behavioral component used in the First Steps to Success studies resulted in significant improvement even during the first phase of treatment before the introduction of the home based social skills instruction and, in the case of two twin subjects, without the training at all (Golly et al. 2000).

In addition to behavioral components, the 8 studies employing both cognitive and emotional competency training were as effective overall as the 6 studies using just a cognitive approach, with a fairly equal mix of significant and non-significant outcomes across studies. All three studies that emphasized emotional competency or affective education in the curriculum reported significant outcomes on the majority of measures for intervention groups compared to controls, suggesting this approach may be more effective. There were fewer studies in this category, however, which does not allow for an equal comparison.

Several individualization strategies were used in the studies reviewed, including individual instruction, individual treatment goals and Child Mastery. Only two studies used individual instruction in treatment, both of which also included a small group component. Only one study controlled for individual instruction as a variable. The results indicated that one on one treatment with a therapist was effective in teaching the skills in a therapeutic setting, but skills did not generalize to natural settings based on this intervention. The four studies that developed individual student goals using IEPs with students classified as EBD all reported significant pre to post test improvement in positive behaviors and decreased negative behaviors on the majority of outcome measures. Fewer significant results were obtained in a study with students identified as at-risk comparing the group with individualized goals to those receiving general instruction only. The results of Child Mastery procedures, which assessed students individually and provided intervention until students reached skill mastery, were mixed, with half of the outcome measures supporting significant improvement in one study and one fourth of the students demonstrating significant improvement in the second.

Significant differences were seen based on outcome measures used in the studies

reviewed. Studies using behavioral observations to measure change reported the most significant outcomes with all but 1 out of 17 studies reporting significant pre to post test improvement on more than half of the observations used. In contrast, the majority of the 15 studies using parent and teacher rating scales to demonstrate change between pre and post test reported significant results on one fourth or fewer of the measures. Socio-metric ratings and self-report scales were used far less frequently (4 studies each), but on the majority of measures, there were significant pre to post test differences. Academic measures resulted in the least compelling outcomes and were used in only four studies.

Discrepancies between outcome measures were common, especially when comparing the results of observations with rating scales in the same study. Discrepancies were also seen between teacher and parent ratings of students in four out of the five studies using both raters. Only slight differences were seen when comparing change in positive versus negative behaviors, with a few more studies reporting more overall changes in negative behaviors compared to positive behaviors.

Implications for School Psychologists and Practice

School psychologists could play a strong role in putting the findings of the literature review into practice. The majority of the studies described in the review required program consultants, facilitators or trainers to implement the interventions, which would also be an appropriate role for school psychologists. School psychologists conducting social skills interventions in the school setting could apply much of the research, the strategies and program designs, in working with teachers, students and parents. School psychologists may be able to influence the development of programs in a variety of settings, including both the regular

education setting and special education settings. Successful approaches in the special education setting that could involve school psychologists include matching symptoms with treatments, training students with EBD as peer trainers and creating individualized programs for students with IEP goals. A variety of successful strategies should be considered when developing or implementing social skills programs. There were also some approaches that did not lead to positive change that may need to be avoided in practice.

A number of original treatment approaches were outlined and proved to be fairly successful in the regular education setting, including the Combination Classroom and the First Steps to Success. The Combination Classroom was a novel approach to treating students with emotional and behavioral disorders while providing appropriate role models in the regular education setting (Flicek, Olsen, Chivers & Kaufman, 1996). A school psychologist could be an instrumental team member in organizing this project, which would involve a strong class-wide behavioral management program, a social skills curriculum with regular activities, and training for the resource teacher, classroom teacher and assistants.

The First Steps to Success programs were successful in the regular education setting and would require a consultant with expertise in behavioral strategies, ideally a school psychologist. In this approach, the consultant was directly involved with the student at the onset of the program in order to both provide the behavioral intervention and to model for the teacher how the program was to be implemented. There was also a period of follow up where the consultant monitored during the teacher implementation phase to establish treatment integrity (Golly et al. 1998; 2000). The main complication for practice with this program was the home based component, which was conducted in each child's home over a 6 week period. A possible option

in cases where liability issues and time constraints preclude school psychologists from home based interventions would be to conduct the parent training as a class at the school.

School psychologists are likely to be involved with students served in special education settings and at least in a position to consult with the teachers if not directly treat these students. Many of the studies conducted in small group settings or special education settings used program designs and methods that are highly adaptable to practice. In developing small group interventions the literature supports matching treatment to symptoms, for example, differentiating students with externalizing symptoms from students with internalizing symptoms and treating these separately. The school psychologist could play an integral role in matching symptoms to treatment by conducting formal assessments to determine the clinical symptoms of the students and by obtaining curriculum that uses best practices in treating the specific symptoms. It may be important to consider self concept of students involved in small group settings and use strategies to prevent a negative impact on self-esteem.

School psychologists are an invaluable resource for self-contained classrooms and specialized or alternative settings, where a high percentage of students have severe emotional and behavioral needs. The approach of training students in these classrooms as peer trainers to teach the other students could be an effective tool (Blake, Wang, Cartledge & Gardner, 2000). This approach was both original and successful, but would need to be considered case by case. The concept has real possibility, especially with those students who are reinforced by peer attention, demonstrate strong leadership qualities or need opportunities to develop a contrasting role. Supporting the process of mainstreaming students in these settings would also be an important role for the school psychologist.

Several studies with students classified EBD involved IEP goals and were conducted as single subject designs. A school psychologist could be a valuable resource in developing goals and interventions as well as data tracking systems to determine the impact of treatment strategies with individual students. The practice of returning to baseline conditions as was done in single subject designs may not be in the student's best interest in practice, but tracking progress is important and varying treatment strategies is also applicable in the school setting. An example of how this might be done would be to gradually introduce treatment components or to gradually remove behavioral strategies, as was done with the student in the Herring and Northrup (1998) study. The intervention could begin with direct social skills instruction, followed by generalization strategies utilizing both teachers and peers. The instruction, reinforcement, prompts and coaching could then be faded in order to depend on more naturally occurring maintenance strategies in the environment. It would be important to track the students behavior throughout the course of the program as well as the changes in treatment strategies in order to determine the impact of the treatment and to ensure those effects are maintained.

In general, the use of individualized goals, group contingencies and generalization to the natural school settings are strongly supported for practice. The component of parent training is encouraged in the research, and although the efforts to involve parents often require more time and resources in practice, it is important to include this component when possible. It may be especially critical for long term outcomes and for change to extend beyond the school setting.

Some findings of the review indicate what not to do or what may not be necessary in practice. It appears to be inefficient to extend the length of treatment beyond one year, as was seen in those studies that were conducted longer and had similar outcomes as those conducted

less than a year. It also appears that an intensive clinical component in conjunction with regular classroom interventions is not overly effective based on the study that applied this approach (Conduct Problems Prevention Research Group, 1999). It is also important to carefully consider what specific behaviors are being treated when using outcome measurements and to look at pre-test levels of symptoms to make sure normal symptom levels are not being targeted.

Recommendations for Future Research

Several recommendations for future research can be made considering the potential factors impacting social competency training for students classified or at risk of developing emotional/behavioral disorders. The setting of treatment is an important consideration and more research could be done to determine whether or not students experience different outcomes in regular education versus special education settings. The level of success of social competency training in specialized or alternative settings may need to be explored to determine if there are specific factors in this type of setting that lead to greater improvements. Student classification status may also need to be considered as possibly influencing variable. For example, it would be helpful to determine if social competency training conducted in regular education settings is as successful as training conducted in special education settings for students classified as EBD and vice versa. In addition, examining outcome differences for training conducted in regular education settings versus small group settings for students identified as at risk is important.

Student characteristics may also contribute to different outcomes. Studies conducted with students classified as EBD responded somewhat more favorably to treatment than students identified as "at risk" of such, however, the study designs were dramatically different in each case. There were more single subject designs with students with EBD and more control group

designs with students at risk, which creates a difficulty in evaluating the true difference. Further research of this variable could influence treatment delivery as well as determine the agents providing treatment, since students classified EBD are generally served in resource settings, and students identified as at risk would receive interventions in regular education settings.

Symptom severity was another factor that appeared to influence outcomes and may need to be explored further. There was only one study evaluating this variable specifically, but based on the results it is possible that students with severe emotional and behavioral needs experience a greater level of change as a result of intervention. This may only reflect that there is more room for improvement with students with more severe needs. It may also help to explain why EBD classification and specialized settings are purporting somewhat higher gains.

Another student characteristic that may influence treatment outcomes is the nature of the disorder, whether internalizing or externalizing. Students with externalizing disorders appeared to experience greater levels of improvement overall than students with internalizing disorders. However, these findings may be due to the fact that students typically had lower levels of internalizing symptoms at baseline than externalizing symptoms and therefore, had less room for improvement (or no need for improvement) on internalizing symptoms. These areas warrant further research in order to target those students who would most likely benefit from interventions. Just as some mental health disorders are more responsive to certain types of treatment students with certain symptoms may be more receptive to certain aspects of social competency training.

Further research on several components of treatment may shed light on factors of success and could help to guide the development of successful intervention approaches. Isolating

behavioral components in interventions may point to specific strategies that increase positive outcomes and could help to clarify the importance of behavioral strategies in comparison to other treatment components. Further research on the First Steps to Success program, isolating the separate components, may be able to explore whether program success is mainly due to the use of intensive behavioral strategies. Based on the positive outcomes of a few studies in the review, further research is needed contrasting interventions that use emotional competency training, excluding a cognitive component, with studies that use cognitive components only or that combine the two approaches. Again, this may be associated with student characteristics and matching treatment components to specific student needs could make a difference.

Individualization is a treatment component worth further consideration and research since many of the studies using individualization procedures purported successful outcomes. It may be beneficial to provide certain types of instruction in individual settings, or to examine the needs of children to determine what type of instruction would be best suited for them individually. However, individual instruction alone may not meet the needs of students due to the lack of peer based involvement and limited social opportunities. It may be successful, however, to use both individual and group instruction in conjunction with each other. In general, few studies have controlled for individual treatment as a variable. Further research is needed to determine the significance of an individual approach, especially since that may limit the number of students that would receive interventions, as is seen in the special education parallel.

Matching treatment to social skills deficits in a group setting appears to be well worth consideration. There were only two studies applying this technique, but results are promising, indicating that there may be a significant difference between matched and unmatched treatment.

There is some support for individualization in treatment, and matching treatment to symptoms, however, The effectiveness of individualized goals appears to be a key area, especially comparing pre to post change using IEP goals. The child mastery approach, involving set criteria for and evaluation of individual child achievement, is another area that warrants further research.

Parent training components are another area that warrant further exploration, especially to identify the factors that may lead to the success of this component. Parent training may be a critical component to effect long term change and impact behavior across school, home and community settings. However, it is a costly component, especially when conducted with parents individually and in their home vicinity. Areas of research that could help to maximize the impact of this approach include evaluating parental readiness for change prior to treatment and reinforcing parents for consistent attendance and follow through. Longitudinal measurements would be helpful to determine the impact of training over time. It may also be cost effective in the long run to evaluate the impact of various approaches, such as home based components, parent child interaction sessions or parent training groups. When considering cost effective approaches, length of treatment does not appear to be correlated with successful outcomes and longer treatment may be cost ineffective.

Treatment design and outcome measurements appear to be correlated with the reported success of interventions. Single subject designs or those studies that compared only pre to post test data tended to report more significant outcomes than studies using control group designs. Similarly, studies that measured change using mainly observational data reported more significant outcomes than studies using rating scales or a combination of several outcome measures. Therefore, future research may need to take these factors into consideration when

evaluating the success of interventions. Examples of how this might be done include, comparing like measurements and similar study designs to determine the actual difference in outcomes or adjusting the expectations of studies based on the study design and the number and types of outcome measurements used.

Conclusion

The literature reviewed is consistent with the previous research and results of meta-analyses on social competency programs with students with emotional and behavioral disorders. The outcomes are modest overall. The literature review provided valuable information related to program designs and original approaches to providing social skills interventions in a variety of settings and with a variety of different components. Many of these approaches are practical in the school setting and lend themselves to useful applications. There are also several leads that point to specific factors that result in the most successful outcomes. It may be necessary to approach the realm of treating emotional and behavioral disorders with creative and original methods, however, it would benefit the research field to have studies and treatment designs duplicated to strengthen the reported outcomes of novel techniques. This is a field that can prove to be disheartening, considering the lack of profound impact, however, it is one that many would consider worthwhile. As in the story of the person on the beach throwing starfish back into the ocean, who is questioned for their seemingly pointless endeavors, the answer continues to be that "it matters to that *one*".

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Summary of Articles

Authors	Subjects	Description	Components	Measurement/ Results
1. August, Realmuto, Hektner & Bloomquist (2001) See pg. 69-71, 83, 101-103	245 Kindergarten & 1st Graders; 124 Program, 121 Control; High risk for aggressive and/or disruptive	6 wk Summer School; Soc. Skills 1 hr/day; Agents - Teachers and Counselors; Teacher consultation during regular school yr	Bx - Point system, report cards Emotion - Affective Ed. Cognitive-Social Problem Solving Peer mentors Parent Training	Academic - Group x Time sig. ($p<.02$); Teacher/Parent Rating Scales- aggression, hyperactivity & impulsivity not significant except Severely Aggressive sig. grp x time x severity ($p<.04$); Social Competence - ns
2. Barkley, Shelton, Crosswait, Moorehouse, Fletcher, Barrett, Jenkins & Metvia (1999; 2000) See pg. 71-73, 82-83, 103	158 Kindergarten: 39 Parent Training (PT), 37 Special Tx Class (STC), 40 Combined (STC & PT), 42 Control High risk/ Disruptive: Hyperactive, Impulsive &/or Conduct Problems	Special Tx classrooms (15 students); 9 months; Grp. Soc. Skills training Agents - master & reg. teacher, psych. consult.; Consultation w/ 1st grade teachers	Behavior - Token system, response cost, report card Cognitive - Self control training Emotion - Anger control training Parent training	STC and Combined groups > Control and PT groups on: Adaptive measure ($p<.002$); Observations - Externalizing ($p< .008$) Internalizing (ns); *SSRS* ($p< .008$); CBCL (ns); Academic, Parent surveys, *HSQ & SSQ* (ns); DSM criteria - ns;
3. Biernert & Schneider (1995) See pg. 52-54, 89, 107-108, 120	78 6th grade students; 38 Tx, 40 Control; At Risk Aggressive or Isolated Deficit specific or Crossover treatment	Small grp social skills; 10 - 1hr weekly sessions Agents - Psych students	Behavior - Token, Cost response Cognitive/Emotional - Skillstreaming program Ind.- Tx/symptom match	Deficit specific > Crossover on: Self perception ($p<.002$) Sociometrics - Likeability, Aggression & withdrawn bx improved ($p<.002$)
4. Blake, Wang, Cartledge & Gardner (2000) See pg. 65-68, 89, 94-95, 122	Study 1 12 Students;10-13 years old; 6 SED& 6 with Bx Problems Study 2 6 Students; 9-13 yrs. old; SED	Self Contained Class; SocSkills1 hr/day/7wks Agents - Teachers & bx prob students	Bx - practice, feedback, modeling, prompts, positive reinforce, Social - Interaction Individ. - IEPs for SED	Observations: Both trainers & trainees experienced significant increase in positive bx and decrease in negative bx.

5. Braswell, August, Bloomquist, Realmuto, Skare & Crosby (1997) See pg. 59-61, 86-87, 104	309 1st - 4th grade students; At Risk Hyperactive/Disruptive; ½ Information Attention Control (IAC) & ½ Multi-component Intervention (MCEI)	School based; 18 small Social Skills groups year 1 & 10 sessions year 2; 45-60min each; Agents - School psychs; Teacher component - 6+ inservice training hrs for both IAC & MCEI	Behavior - Pt. system, Positive reinforcement, response cost Cognitive - Problem solving & thought management Emotion - Anger mgmnt Parent Component - in both IAC & MCEI	*BASC Teacher* - No effects; *BASC Parent* & Problem Solving scales (Teacher & Parent) - Both groups improved; *BASC Child:* MCEI > IAC Observations - Both grps improved on 1/4 behaviors measured and no change on 3/4 behaviors
6. Conduct Problems Prevention Research Group (1999) See pg. 40-42, 84-85	891 1st grade Students; 445 Intervention, 446 Control; High Risk - Aggression & Oppositional Behavior	Regular Classrooms -57 PATHs lessons, 2-3/wk + Social Skills grps in clinic w/ Peer pairing; Teachers received training & consultation	Behavior - Teachers consulted Cog. - Problem Solving Emotion - Feelings Ed., Self control skills Peer Component Parent/Child Interact.Tx	Intervention > Control on: Social Cognition - 4/5 measures sig. ($p<.04$); Sociometric - 1/3 measures sig. ($p=.02$);Academic - 2/3 sig.($p<.01$); Observations - 2/3 measures sig. ($p<.02$); Rating Scales - 2/8 sig. ($p=.01$)
7. Flicek, Olsen, Chivers, & Kaufman (1996) See pg. 32-33, 89-90, 95, 122	3 E/BD Students; 4th & 5th Grade - ODD, Conduct Disorder & Inattentive/Internalizer	Combined Classroom; Weekly whole class Soc. Skills + Incidental teaching; Full school yr; Reg & Resource teacher	Behavior - Level system, bx reduction hierarchy, bx report cards Environment - Class climate Individualization - IEPs	Bx Reports - Improved ($p<.05$); Academic measures - ns; *TRF* - Total problems dropped from clinical (Mean T Score = 72) to average (Mean T Score = 47) for all three students
8. Golly, Sprague, Walker, Beard & Gorham (2000) See pg. 34-36, 81-82	4 Twins - K/1st grade; At Risk for Antisocial behavior - High levels of inappropriate behavior	Regular Kindergarten; First Step to Success - 20-30 min/day (30days) Agents - Reg teacher & program consultant	Behavior - Class Contingency Social - Interaction tx Cognitive - Social Problem Solving Individualization - Home Instruction provided w/ Home Based Module	Direct Observations - Academic Engaged Time (AET) increased from 75% (Twins 1, 1a & 2a) & 12% (Twin 2) at Pre-Intervention to 93% - 100% at Post Intervention (all 4 twins)

9. Golly, Stiller & Walker (1998) See pg. 34-37, 81-82, 104	20 Kindergarten Students At Risk - Aggression, Low Adaptive Behavior & High Maladaptive Behavior	Regular Classroom; First Step to Success; 30 Day program; Home Based component 6wks. Agents - Consultants & Reg Ed Teachers	Behavior - Point system, feedback and praise Individualization - Individual school based and Home Based Component	Observations - Academic Engaged Time Increased from 60% Pre to 83% Post ($p = .005$); Rating scales - 3 / 4 significant: Aggression, Adaptive & Maladaptive scales ($p < .005$), Withdrawn scale ns.
10. Herring & Northrup (1998) See pg. 46-48, 85, 95, 114, 119-120, 123.	1 Behavior Disorder (BD) Student; 2nd grade	Small group social skills; 34 sessions Agents: Teachers & peers as role models	Behavior - Group contingency, Prompts in natural setting Individual - IEP goals	Observations - Inappropriate Behaviors decreased sig. and Appropriate Behaviors increased significantly in treatment setting
11. Kamps, Kravits, Rauch, Kamps & Chung (2000) See pg. 87-88, 96	38 Students: 20 ages 5-11 in Intervention Cohort 1 (C1) and 18 ages 5-9 in Control Cohort 2 (C2); At Risk or Classified E/BD.	General Education, Resource & Special Ed. Classrooms; Social Skills weekly; C1 had 4 yrs. tx; C2 had 2 yrs tx; Teacher Training	Behavior - Home notes Token System, Contracts Cognitive/Emotional - Second Step and Skillstreaming Programs Peer Tutoring	Teacher Ratings & Observations - 7/14 scales significant ($p<.03$); Aggressive incidences dropped significantly for C1 ($p=.011$); Higher intervention & Structure resulted in better outcomes
12. Kamps, Tankersley & Ellis (2000) See pg. 38-40, 80, .	31 Intervention students,18 Comparison students - Grades Pre/K/1; At Risk for Aggression	Classroom or Small group; Social Skills 1-3 times/week + Activities 2-4 times/wk; 2 year program	Behavior - Praise and Tokens Emotional - Affection Activities Parent & Peer Programs	Observations - Significant group differences on 6/7 measures ($p<.05$) including aggression, compliance & negative verbals; Teacher weekly ratings - ns.
13. Kamps, Kravits, Stolze, & Swaggart (1999) See pg. 29-31, 90.	52 Students K - 7th Grade; 28 Target Group (11 E/BD,17 At Risk) 24 Control Group (6 E/BD, 18 At Risk)	Regular Classrooms; Social Skills Training: avg.2 times/week for1yr Agents: Teachers received consultation & training	Behavior - Point/Token & Level system Cognitive/Emotional- Second Step & Skillstreaming Peer Tutoring	Teacher Ratings - Significant group difference on 4/11 sub-scales Post tx ($p<.05$); Observations - Significant group difference on 4/8 subscales Post No direct comparisons Pre/Post

14. Lochman, Coie, Underwood & Terry (1993) See pg. 54-56, 108-109, 120	52 4th Grade At Risk students;26 Control grp; 26 Split Intervention: for Aggressive/Rejected (ARI) or Rejected Only (RI) students separately	34 Social Relations Sessions: 8 Small Group Sessions & 26 Individual sessions; Agents: Graduate students/psychologist	Behavior - Bx contracts, self monitoring, rewards Emotional - Dealing with negative feelings Cognitive - Social problem solving	Teacher Ratings & Peer Ratings- Significant group difference for ARI students on 4/8 scales ($p<.04$); Rejected only ns on all scales; Self-concept - Both ARI / RI groups declined ($p<.01$)
15. McConaughy, Kay & Fitzgerald (1998; 1999) See pg. 42- 44, 84, 105, 123	36 1st Grade students At Risk for E/BD; Comparison grp design: Parent Teacher Action Teams (PTAR) + Social Skills vs. Social Skills Only (SS)	Regular Classrooms; Whole class social skills instruction; 2 times/wk for 2 school years; Agents: Teachers, parents, facilitator and home/school liason	Behavior - Goals with home/school action plan Individualized - Goals Parent component with Teacher partnership and monthly team meetings	Rating Scales - Both PTAR & SS groups improved on most scales Year 1; Significant group x time effects on 4/8 scales Year 2 ($p<.05$); 4/16 ns; Observations - Significant diff. Year 1 ($p<.05$); Year 2 ns;
16. Mc Mahon, Wacker, Sasso & Melloy (1994) See pg. 49-51, 85-86, 95-96, 114-115, 122,	3 Students; Ages 7 -9; Classified EBD & LD - Socially withdrawn or aggressive; 3 phase tx→ withdrawal phase→post training→maintenance	Special Ed. Setting; Weekly small group Social Skills + main-streaming; 8 - 15 sessions/student; Agents: SPED teacher	Behavior - Praising, rewards & prompts Social - Initiate/maintain social interactions Individual - IEP goals Peer practice w/ R+	Observations - Duration on task increased 400%; Negative behavior decreased (7 Pre to 1 Post); Cooperative play increased (15% Pre to 85% Post); Teacher ratings - ns
17. Middleton & Cartledge (1995) See pg. 57-58, 83-84,	5 students in1st and 2nd grade; At risk for Aggression; ABABA design (2 Phases of tx + multiple baselines)	12 small group sessions (both Phases) + In class coaching in Phase 2; 4 week program Agents - Psych interns	Behavior - home notes, reinforcement, coaching Emotional - Feelings Ed. Ind.-1 target student/grp Parent training and Peers	Observations - Aggressive behavior decreased 65% in Phase 1 & 80% in Phase 2; Behavior reduction maintained during 1-2 week follow up
18. Serna, Lambros, Nielsen & Forness (2002) See pg. 24-27, 80-81, 124	8 Experimental & 1 Control student; Pre-school aged; At Risk for E/BD - Clinical on *Early Screening Project*	Regular Head Start Classroom; Social Skills 6 hours/week for 12 weeks; Agents - Master's level teacher, regular teacher	Behavior - Feedback, praise Cognitive - Social problem solving Social -Cooperative play Individual - Practice until child mastery reached	*Early Screening Project* - 2 out of 8 Experimental students no longer clinical at Post test; Control student still clinical + 3 additional control students reached clinical levels

19. Serna, Nielsen, Lambros & Forness (2000) See pg. 24-26, 80-81, 124	84 Preschool Children: 53 Experimental and 31 Control students; At Risk for developing Emotional/ Behavioral Disorders	Regular Head Start Classroom; 12 week social skills intervention (Two 3 hr. sessions/wk) Agents - Master's level Interventionist and Classroom teachers	Behavior - Feedback & praise in natural environ. Cognitive - Problem solving Individualization - Child Mastery achieved Parent sessions & training	*SSRS/ESP/Vineland/Conners* - Experimental students improved significantly over control students on 5/10 scales ($p<.04$). Experimental Effect Size using pre and post means averages .36; Five scales ns.
20. Tankersly & Kamps (1996) See pg. 27-28, 80	45 Preschool Children: 34 Target Students & 11 Control Students At Risk for Externalizing Symptoms/Aggression; Also 15 Comparison peers w/ normal ratings.	Regular Head Start Classroom; Small group Social Skills 2 - 3 times/week for10 wks; Activities 4 times/week; Agents: Teachers	Behavior - Praise, peer role modeling, incidental feedback & monitoring Emotional- Affection activities with large group Peer role models	Direct Observations - Duration of interactions & disruptive behavior for Target students improved significantly on 6 out of 9 total scales ($p = .05$ to .001); 3 scales not significant.
21. Vitaro & Tremblay (1994) See pg. 61-63, 86	104 Students; Ages 8-9; 46 Treatment and 58 Control Students; At Risk -Above 70%ile Aggressive/Hyperactive	Small group Social Skills training outside the regular classroom; 9-10 sessions/yr for 2yrs Agents: Peers & leaders	Behavior-Praise, practice, Reinforcement, coaching Cognitive - Problem solving Parent Training	Teacher ratings & Sociometric scales - not significant at yr 1 & 2; Significant group differences at year 3 ($p<.05$); Treatment grp less aggressive/disruptive
22. Walker & Kavanagh (1998) See pg. 34-38, 81-82, 104	46 students (24 students Year 1 & 22 students Year 2); Kindergarten; At Risk for aggression and conduct problems	Classroom based - First Step to Success; 2 - 3 month program; Agents: Consultants, teachers, parents, peers	Behavior - Point system, praise & monitoring Cognitive - Problem Solving Individual - 2-3 students per consultant Home based component	Observations - Academic Engaged Time increased for Treatment compared to Control ($p<.05$); Rating Scales - significant group difference on 3 out of 4 measures ($p < .001$); Withdrawn Bx -ns