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Philadelphia College of Osteopathic Medicine

Department of Psychology

USING COGNITIVE BEHAVIORAL THERAPY TECHNIQUES TO IMPROVE
SOCIALIZATION SKILLS FOR HIGH SCHOOL STUDENTS WITH HIGH
FUNCTIONING AUTISM

By

Erika D. Wood

Submitted in Partial Fulfillment of the Requirements for the Degree of

Doctor of Psychology

June 2019

PHILADELPHIA COLLEGE OF OSTEOPATHIC MEDICINE
DEPARTMENT OF PSYCHOLOGY

Dissertation Approval

This is to certify that the thesis presented to us by _____
on the _____ day of _____, 20____, in partial fulfillment of the
requirements for the degree of Doctor of Psychology, has been examined and is
acceptable in both scholarship and literary quality.

Committee Members' Signatures:

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one's dreams. Thank you for emphasizing the importance of pursuing your passion and being a genuine helper to others.

Abstract

The literature on the use of cognitive behavior therapy (CBT) suggests that it is a well researched and evidenced-based viable intervention in teaching and improving social skills for children with high functioning autism (HFA). Autism is a prevalent diagnosis for children and adolescents as school settings struggle with how to provide effective interventions and support to address students' deficits with communication and social skills. Students with HFA may not have difficulty with verbal language skills; however, there is the expectation of being able to navigate social relationships, use social communication and be aware of social cues and rules which are directly related to their diagnosis. This was a pilot study designed to explore the use of CBT in teaching social skills to address deficits in social cognition and social awareness for 4 adolescents with HFA receiving special education services in a high school setting. The duration of the group intervention was six-weeks. Pre and post assessments were conducted using the Social Responsiveness Scale-Second Edition (SRS-2) and the Social Skills Intervention System (SSIS) to obtain measures regarding parents' and students' perceptions about social cognition, social awareness and perceived needs regarding social skills. Results were limited by a small sample size and indicated there were no measureable significant differences between parent and student ratings pre and post intervention. There were, however, additional data that noted the feasibility of this intervention in a high school setting for students with HFA.

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Chapter 1: Introduction

Using Cognitive Behavior Therapy Techniques to Improve Socialization Skills for High School Students with High Functioning Autism

Autism Spectrum Disorders (ASD) has become a prevalent diagnosis for children and adolescents. The Center for Disease Control (CDC; 2018) reports that approximately 1 in 59 children and adolescents will have a diagnosis of ASD. According to the American Psychiatric Association [APA] (2013), ASD is defined as a neurobiological disorder characterized by deficits in social communication and restrictive and repetitive interests. ASD is also considered a spectrum disorder with a range of specific impairments to children's and adolescent's functioning. This range includes those with average to above-average intellectual abilities without expressive and receptive language impairments to those with intellectual disabilities and severe language impairments, who may also communicate nonverbally. There is also a co-occurrence with one or more non-ASD developmental, psychiatric, neurological, chromosomal and genetic disorders at 83% (CDC, 2014). According to the Diagnostic and Statistical Manual-Fifth Edition (DSM-5; APA, 2013), ASD diagnostic criteria consists of persistent deficits in social communication and social interaction across multiple contexts, as manifested currently or by history: deficits in social-emotional reciprocity, deficits in nonverbal communicative behaviors used for social interaction and deficits in developing, maintaining and understanding relationships. The diagnostic criteria also consists of restrictive, repetitive patterns of behavior, interests or activities manifested by stereotyped or repetitive motor movements, insistence on sameness, inflexible adherence to routines or ritualized patterns

of behavior, highly restricted, fixated interests that are abnormal in intensity or focus and hyper-or hypo-activity to sensory input or unusual interest in sensory aspects of the environment (DSM-5; APA, 2013).

Service Provision in Schools

In school settings, many students who meet the diagnostic criteria for an autism spectrum disorder are provided services and supports either through an Individual Education Plan (IEP) via the Individuals with Disabilities Act (IDEA) or a 504 plan via the American Disabilities Act (ADA). Issues often arise regarding how to best serve students with ASD in providing not only strategies and interventions in increasing communication and academic skills but also social skills. This is an area of need specifically for students diagnosed with ASD without an accompanying intellectual and language impairment. This was previously known as Asperger's Syndrome and is currently known as High Functioning Autism (HFA) or Social Communication Disorder. Although HFA is not a specific diagnosis in DSM-5, Social Communication Disorder has been newly added and includes individuals with impairments in social communication but without evidence of restrictive or repetitive behaviors or interests (APA, 2013). Students with these diagnoses typically do not exhibit overt deficits in verbal communication skills; however, they often experience pervasive difficulties with social skills (Reaven, Blakeley-Smith, Culhane-Shelburne, & Hepburn, 2012). This is especially problematic for adolescents with HFA because they have difficulty with social awareness, social cognition, social motivation and social competence, which are required to navigate social relationships and the general social environment that is a major component of the school setting.

School psychologists are mental health service providers within school settings and as such, often provide services and supports to students in addressing social-emotional and behavioral needs, including individuals with ASD. School psychologists are charged with using evidenced-based practices as part of program planning, effective treatment, and evaluation; however, there is a lack of evidence-based programs for addressing social skills needs for children and adolescents with ASD in schools. Most interventions for social skills with children and adolescents with ASD and HFA are carried out in laboratories and clinics (Kasari & Smith, 2013). The implications for interventions are that the main goal is to affect the child or adolescents' behavior at school despite being implemented in another context (Kasari & Smith, 2013). This phenomenon suggests an increased need for research on social skills interventions conducted within school settings, which provide more natural environments for the practice and generalization of social skills.

Given the limited time constraints and also the multiple duties that school psychologists are required to perform, there is a need for techniques that are relatively brief and can be practiced in school settings. IDEA, The Individuals with Disabilities Education Act (IDEA) requires that students receive research supported practices within the least restrictive environment (Sitlington & Clark, 2007). Cognitive behavioral therapy (CBT) techniques are researched and evidenced based and present an efficient and effective intervention in improving socialization skills in children and adolescents with HFA. CBT can be implemented in both small and large group settings as well as individually. CBT has been identified as an effective treatment approach for mental health symptoms in typically developing youth; it can also be applied with other

populations, including children and adolescents with ASD (Reaven, et al., 2012, p. 410). Specifically, CBT has been found to be an effective intervention in addressing the nuances of socialization which include reading social cues, interpreting body language and taking perspectives with nondisabled peers (Mennuti, Christner, & Freeman, 2012; Reaven, et al., 2012; Scarpa, Williams White, & Attwood, 2013). CBT techniques also address issues of comorbidity with ASD and HFA, such as Attention Deficit Hyperactivity Disorder (ADHD), Generalized Anxiety Disorders, Social Anxiety and Depression (Reaven et al., 2012).

According to Scarpa, and colleagues (2013), CBT techniques often require modifications and adaptations to be effective in working with students with HFA. The rationale is that children and adolescents with ASD, particularly HFA have differences in perceiving, thinking and learning compared with their typically developing peers (Scarpa et al., 2013). For example, a child or adolescent with strong verbal reasoning skills may benefit from using text and reading materials to improve his or her understanding of the concepts and strategies of CBT. Alternatively, students with strengths in visual reasoning skills may be better served where learning is emphasized with pictures and visual information rather than with conversation (Scarpa et al., 2013). CBT has also been noted to be an effective intervention for adolescents with HFA because it presents a very logical and linear way of thinking and helps to explain the reasons why we have emotions, how to identify and measure emotions and how to communicate and manage emotions (Scarpa et al., 2013). CBT is also useful in addressing issues related to emotional regulation and anxiety, which are common comorbid conditions for children and adolescents with HFA (Reaven, 2011; Scarpa & Reyes, 2011).

Although CBT has been shown to be an effective treatment, individually, for children with HFA, there is burgeoning research regarding CBT intervention for adolescents in group settings (Reaven et al., 2012). A review of the literature suggests a rapidly growing evidence base for group interventions to facilitate social skills in adolescents with ASD (Miller, Vernon, Wu, & Russo, 2016). Cappadocia & Weiss (2011) noted that in a review of three studies implementing CBT with social skills training, there was pre and post-improvement with social skills. Social skills training programs that include a parent component also demonstrated positive outcomes (Cappadocia & Weiss, 2011; Lordo et al., 2017; Mandelberg, Frankel, Cunningham, Gorospe, & Laugeson, 2014). The literature also suggests that most group format interventions include a combination of didactic, teaching and experiential components (Miller, et al., 2014). However, most of this research comes from clinic-based implementation. Research on implementation in schools has been limited, despite the social communication deficits that children and adolescents demonstrate in school settings.

In addition, many studies of social skills treatment groups for students with HFA do not include enough students who are culturally and linguistically diverse. A majority of the literature on autism spectrum disorders notes the disparity in diagnosis and treatment with culturally and ethnically diverse students compared with their non-ethnically diverse counterparts (Mandell, Ittenbach, Levy, & Pinto-Martin, 2007). Mandell, et al., (2007) and Mandell, Listrud, Levy, & Pinto-Martin (2002) note that children and adolescents from ethnic minority groups are diagnosed with autism at much later ages than their Caucasian counterparts. Children and adolescents from ethnic

minority backgrounds are most likely to be diagnosed with other conditions besides autism. As a result, the delayed autism diagnosis contributes to the lack of access to evidence-based treatments and interventions.

A review of the literature also reveals that interventions for improving socialization skills within a group setting have often occurred in clinical settings rather than school settings. These types of settings although useful, often do not lend themselves to the possibility of students practicing acquired skills within natural settings where they interact with nondisabled peers daily as within the school setting. Schools and the classroom environment provide opportunities for students with HFA to practice skills with nondisabled peers, which in turn leads to greater chances for generalization.

Purpose of the study

The purpose of this study is to expand previous research by examining the school-based use of CBT techniques within a group setting to improve socialization skills for high school students with high functioning autism. This study will also contribute to addressing gaps in the current literature by including a parental involvement component and addressing service delivery to adolescents with HFA who are from culturally and ethnically diverse backgrounds.

Specifically, this study aims to examine whether or not the use of CBT techniques is an efficient and effective tool to use with social skills groups for ASD within the school setting. Additionally, this study will examine whether or not social competence, social motivation, social cognition, and social skill use will improve following the implementation of a group CBT social skills training for ASD in schools, as measured by ratings, self-reports of skills, and direct observation. It was hypothesized that: 1) Social

motivation, social awareness and social cognition for high school students with HFA will be improved following participation in the program; 2) There will be significant differences between parent and student ratings social skills and problem behaviors pre and post intervention.

Chapter 2: Review of the Literature

Autism Spectrum Disorders and High Functioning Autism

Although the current prevalence rates of children and adolescents diagnosed with autism spectrum disorders (ASD) is 1 in 59 according to the CDC (Baio, Wiggins, Christensen, et al., 2018), the rates are significantly higher for males, with 1 of 42 diagnosed compared with females, with a rate of 1 of 189 being diagnosed (Otero, Schatz, Merrill, & Bellini, 2015). According to the DSM-5 (2013, p.53), the essential features of autism spectrum disorders include, “persistent impairment in reciprocal social communication and social interaction and restrictive, repetitive patterns of behavior, interests or activities”. The current prevalence rate is estimated to be about 1% of the population; however, there are questions about whether or not the higher rates of diagnosis are due to the expanded definition of autism, which includes children and adolescents who were previously diagnosed with pervasive developmental disorder, not otherwise specified (PDD, NOS), Childhood Disintegration disorder and Asperger’s Syndrome. Additionally, there is an additional category of social communication disorder. Although not considered an autism spectrum disorder, the diagnosis of social communication disorder includes the continued, persistent impairment in reciprocal social communication and social interaction skills but without the restrictive and repetitive patterns of behavior, interests or activities.

DSM-5 (2013) describes the level of severity that social communication, social interaction and restrictive, repetitive patterns of behavior are exhibited in individuals with autism, with a range from requiring support to requiring very substantial support. Requiring support means that without supports in place, the social communication

deficits and restrictive, repetitive behaviors cause noticeable impairments. Requiring substantial support means that there are marked differences in social communication and restrictive and repetitive behaviors, even with supports in place. Examples include unusual or unsuccessful responses to social initiation of others and an inflexibility which interferes in social interactions with others. Additional examples include difficulty in coping with change and also other behaviors that are frequent and obvious enough to even the casual observer and significantly interfere with functioning. These behavioral characteristics demonstrate a range of impairments and highlight the need for a range of supports and interventions. Within school settings, the diagnosis of autism and the level of support vary because there may also be the additional component of intellectual impairments. Individuals identified as having high functioning autism do not exhibit an intellectual impairment. However, because there is not an intellectual impairment with children and adolescents identified as HFA, the issue of deficits in social interaction and communication skills can be minimized. Due to these social skills deficits, children and adolescents with HFA are often the targets of bullying and other negative social interactions, which further increase social isolation (Otero et al., 2015). Given the level and impact of social skills deficits for adolescents with HFA, the significance of social interaction and repetitive and restrictive behaviors also requires a range of supports.

Autism and adolescence. The developmental period of adolescence presents as having many challenges emotionally, physically and academically. Many of these challenges are problematic during transitions to high school where social roles, responsibilities and academic demands increase. These challenges are more substantial for adolescences with HFA because experiencing these changes lead to stress, anxiety

and other emotional issues (Cridland, Caputi, Jones, & Magee, 2014). During adolescence, the differences between those with HFA and their typically developing peers become more apparent. Adolescence is also a time in which social relationships and being able to read social cues become important in navigating various social environments with peers and adults. Also, adolescents with HFA are also viewed by their teachers and others as highly capable, given their average and above average intellectual functioning; however, these strengths are often in academic environments with few internal resources determining how to handle interactions in social environments (Reaven, 2011). In the high school environment, there are changing social expectations so many of the behaviors that are common characteristics with HFA are even more problematic compared with typically developing peers. Because of these social difficulties, students identified with HFA tend to view social interactions and situations as “different”, which increases anxiety. Cridland et al., (2014) noted that because adolescents with HFA lack the recognition that other adolescents do not share the same level of interest and importance of specific restrictive, repetitive interests, it is difficult for the student with HFA to regulate how much information to share about a common area of interest with others. Adolescents with HFA have difficulty perceiving how others feel, which presents with challenges in perspective taking with other students. This also presents a challenge for students with HFA to understand how their own behavior influences others.

Ethnic minorities and autism. The issue of diagnosis and prevalence also has differences with children and adolescents who are culturally and linguistically diverse or who are members of ethnic minority groups. Mandell, et al., (2007), state that African

American children with autism were diagnosed an average of a year and one-half later, compared with their Caucasian counterparts. The delay in diagnosis also contributes to the underrepresentation of African American subjects within the genetic and biological research of autism (Hilton et al., 2010). The lateness of the diagnosis of autism also has treatment implications because of delays and access to appropriate mental health care. This underrepresentation in diagnosis also influences access to school-based services, with the implication that delayed identification leads to a lack of provision of appropriate special education services and effective parental involvement in behavioral interventions (Tincani, Travers, & Boutot, 2009).

Social Skills and HFA

Given the continued prevalence of ASD diagnoses in school settings, issues arise regarding how to best serve students with ASD in providing not only strategies and interventions in increasing social communication skills but also in social skills (Vernon, Dauterman, and Stolen, 2012; Vernon, Miller, Ko, and Wu, 2016). The need to address social skills for adolescents with HFA increases in the school environment because they are viewed to be highly capable by teachers and by others because of their intellectual abilities. However, adolescents with HFA will find themselves trying to navigate a number of social environments with few resources for how to handle them, which results in increased anxiety symptoms (Reaven, 2011). These social environments are numerous and require different resources to understand and navigate, especially within the high school setting.

Although students identified with HFA typically do not exhibit overt deficits in verbal and basic communication skills, they often experience pervasive difficulties with

social skills (Reaven, Blakeley-Smith, Culhane-Shelburne, & Hepburn, 2012). Social skills are further defined as social competence, social awareness, and social cognition (Bauminger, 2002; Bellini & Peters, 2008; Costantino, 2012). Social skills are described as those learned, socially acceptable behaviors that enable one to interact with others, behaviors that reinforce positive responses and avoid negative responses (Bellini & Peters, 2008). Social competence is defined as the judgments and perceptions of social behaviors by others (Bellini & Peters, 2008). Social awareness is defined as the ability to pick up on social cues and represents the reciprocity or “give and take” of social behavior (Constantino, 2012). Social cognition is defined as the ability to interpret and gain meaning from social cues once they are picked up; they represent the cognitive or “thinking” about reciprocal social behavior (Constantino, 2012). Bauminger (2002) also defines social cognition as the child’s ability to read and interpret correctly verbal and nonverbal social and emotional cues. This includes how to initiate a conversation, how to negotiate needs and how to enter a group.

Social skills in autism. Chevallier, Kohls, Troiani, Brodtkin, & Schultz (2012) note a specific theory regarding social cognition and social motivation for students with autism spectrum disorders. This theory presumes that motivation plays a great role in the lack of social skills for students with ASD or HFA rather than that of cognitive impairments, problems with executive functioning or theory of mind. Theory of Mind is the ability to identify the social attributes of others or oneself to gain a better understanding of the social perception of others. In Chevallier et al.’s (2012) social motivation theory, the lack of social interests deprives children and adolescents of social learning opportunities, which negatively influences social cognition or the awareness of

and the ability to pick up on social cues from others. This is especially problematic for adolescents identified with HF because these are required to navigate social relationships and the general social environment that is a major component of the high school experience. Chevallier et al., (2012) further describe aspects of social motivation to include social orienting, seeking and liking and social maintenance. Social orienting involves the positive or negative signals that capture attention in which beneficial information is a priority. This includes attending to facial expressions and body language and understanding their meaning. Social seeking and liking consist of the two components of social orienting, wanting and being rewarded for social contact. This concept speaks to others seeking and liking social contact because it is intrinsically rewarding. Social maintenance is an aspect of social motivation that involves the desire to engage with others over extended periods of time (Chevallier et al., 2012). The social environment in the high school setting is heavily influenced by group belonging with a variety of peers, navigating multiple social environments and managing different relationships with peers and adults. This environment also consists of groups of peers who exhibit sustained relationships with other peers and adults over the course of the high school experience. Typically developing adolescents tend to establish new relationships with new adults and peers during the course of their high school experiences. These social dynamics in the high school setting support the need for social skills training programs be designed to generate skills outside of a clinical setting (Bellini et al., 2015; Rao, Beidel, & Murray, 2008).

Social Skills Training

Social skills training is defined as teaching specific skills (e.g. starting conversations, ending conversations, establishing friendships) via behavioral and social learning techniques (Copper, Griffith and Filer, 1999). Combes, Chang, Austin, & Hayes (2016), found that there have been a limited number of evidence-based practices (EBPs) effectively implemented by school psychologists. The use of social skills training, which is an EBP for students with ASD or those identified with HFA tends to be placed within the duties and responsibilities of special education professionals. Bellini, et al., (2015) note the school setting is an optimal place to provide social skills training given the frequent opportunities to interact with peers within a natural environment. Schools provide multiple environments for students to interact and practice social skills (i.e. classroom, hallways, cafeteria, dances, and athletic events). However, implementing a social skills training program within a school setting can be challenging, given limited time, resources and training for school personnel working with students with ASD or HFA (Bellini et al., 2015).

Traditional social skills training. There are various types of social skills training interventions that have been used as interventions for children and adolescents with HFA. Otero et al., (2015) reports that social skills training is considered an evidence-based practice by the National Professional Development Center on Autism Spectrum Disorders (NPDC). Bellini & Peters (2008) state that most social skills training programs and interventions have the objective of promoting skills acquisition, enhancing existing skills and generalizing skills across environments and people. Cappadocia & Weiss (2011) reviewed a number of social skills training groups which included traditional social skills,

social skills with a cognitive-behavioral orientation and social skills with an additional parent component. Most traditional social skills training group programs provide practice and instruction without parental involvement or formal psychotherapeutic techniques such as cognitive behavioral therapy (Cappadocia & Weiss, 2011). Most of the studies of traditional social skills training programs last from 8 to 13 weeks and note a lack of generalization of skills due to a lack of parental involvement and use of formal evidenced based therapeutic techniques (Barnhill, Cook, Tebbenkamp, & Myles, 2002; Bauminger, 2007; Tse, Strulovitch, Tagalakis, Meng, & Fombonne, 2007).

Cognitive behavioral oriented social skills training. Social skills training groups with a cognitive behavioral focus are similar to traditional social skills training groups because there is child-focused support for practicing skills. Cappadocia & Weiss (2011) examined the literature for three different social skills training groups using a cognitive-behavioral orientation. A key difference between these social skills training groups and traditional social skills training groups include the number of hours and the intensity of the training sessions. Social skills training groups with a cognitive behavioral orientation typically ranged from 50 to 180 hours total, compared with the average of 18 hours for traditional social skills training groups. Also, social skills training groups using a cognitive behavioral orientation typically had larger sample sizes with 21 to 54 children. Advantages with social skills training groups using cognitive behavioral orientations are reflected in the intensity and duration of these interventions (Cappadocia & Weiss, 2011). Bauminger (2002) investigated a social skills training group using cognitive-behavioral therapy for students with autism spectrum disorders and found that training in social-

interpersonal problem solving emphasized and increased children's and adolescents' ability to read and correctly interpret social cues, and internal feelings and emotions.

Parental component in social skills training. Social skills training groups with an additional parent component focus on supporting the parent and implement psycho-education, parent support groups, and parent handouts or materials to supplement skill development and practice at home (Cappadocia & Weiss, 2011). In reviewing studies of various social skills training groups with parent components (Barry et al., 2003; Beumont & Sofronoff, 2008; Marriage, Gordon & Brand, 1995), the range in duration in weeks and hours was longer than traditional social skills training groups, but shorter than those with a cognitive-behavioral orientation. One drawback of these studies is that most of them did not include children in adolescence or those ranging from 13 to 18 years of age. This is an important distinction because social skills at school and at home are different, given the developmental changes in adolescence compared with students who are elementary school aged. All three social skills training group interventions indicated some improvement based on pre and post measurements. However, the gains noted from traditional social skills training groups were limited and not generalized to other environments (Cappadocia & Weiss, 2011). Cappadocia & Weiss (2011) concluded that sample sizes of the various social skills training group interventions reviewed influenced whether or not positive outcomes were present with any level of statistical significance. The larger the sample size in the social skills training group (traditional, cognitive-behavior or parent component) more consistently positive results occurred. Otero et al., (2015) noted that the variability of the delivery of social skills training programs along

with the small sample sizes has made it difficult to assess the quality of these interventions.

Cognitive Behavioral Therapy (CBT)

Cognitive Behavioral Therapy (CBT) techniques have been researched as an intervention in improving socialization skills in children and adolescents with HFA. CBT has been increasingly identified as an effective treatment approach for mental health symptoms in typically developing youth; therefore, researchers have begun applying CBT approaches to other populations, including youth with ASD, with encouraging findings (Reaven et al., 2012, p. 410). It has been found to be a particularly useful and effective intervention in addressing needs regarding the nuances of socialization, which include reading social cues, interpreting body language and perspective taking with other peers. Social communication difficulties can severely limit and interfere with the participation of students with HFA, as well as their typically developing peers. in high school social activities; this can reduce feelings of isolation and marginalization (Bambara, Cole, Kunsch, Tsai, & Ayad, 2016). CBT and Cognitive Behavioral Interventions (CBI) have been effective with youth elementary age to high school (Otero et al., 2015). The guiding principles of CBT further illustrate its usefulness as an intervention. CBT involves collaboration between the therapist and the client and promotes self-efficacy to tolerate emotions and change behaviors. CBT is short-term, directive, present-focused and goal oriented which lends itself to ease of implementation. As an evidence-based practice, which is a requirement for interventions in schools, CBT also monitors progress towards established treatment goals (Scarpa & Reyes, 2011).

Researchers such as White (2009) have suggested that CBT has usefulness when implemented in both group and individual settings. Group-based social skills for ASD or HFA has been appealing because it allows students to practice skills with peers in a semi-structured setting under the supervision of adults (White, Koenig, & Scahill, 2010). Groups create a supportive environment because, in the high school setting, students with HFA often encounter negative peer interactions. Therefore, the use of CBT techniques for students with HFA within the school setting becomes a natural fit. This is due to the nature of the school setting, the benefit of immediate practice and reinforcement of skills and the ability to report successes and failures (Mennuti, Christner, & Freeman, 2012). The use of CBT on an individual basis, although helpful does not allow the student to practice skills in a variety of environments and with different peer groups, which is important for the generalization and maintenance of skills. CBT is also useful in school settings, given the short-term, structured and time-limited nature, which keeps participants focused on solutions. CBT is evidence-based and has been shown to be effective in treating anxiety, which is highly comorbid with HFA. Therefore, using CBT in school settings can be highly effective in treating a number of conditions comorbid with HFA. One weakness of using CBT within the school setting is the limited participation of parents. However, this weakness can be addressed by implementing a level of parent involvement in treatment planning and activities such as psycho-education and homework (Mennuti, et.al, 2012).

Group treatment and cognitive behavioral therapy. There are studies that note the efficacy of group CBT programs in adolescents; however, the focus has been specifically on reducing anxiety symptoms (Scattone & Mong, 2013). “Some of the

advantages of conducting CBT groups include serving more than one individual at a time, a decreased wait period for treatment and the opportunity for instruction and feedback within a supportive group environment” (Scattone & Mong, 2013 p. 931). Although both individual and group treatment approaches have been noted to be equally effective in treating anxiety with the general population, little is known about the differences of these treatment modalities for children and adolescents with ASD (Scattone & Mong, 2013). As school psychologists, it may be presumed that using group treatment may be effective in providing intervention to a large number of children and adolescents within the school setting, especially regarding limited time and resources. Bauminger’s (2007) study used a cognitive-behavioral-ecological intervention as part of a two-year study for HFA students and noted the utility of group-centered intervention on children’s ability to interact cooperatively with peers during structured and non-structured social situations, with noted changes in social cognition including social problem solving, emotional knowledge and recognition.

There have been many studies that have used group cognitive behavior therapy in a randomized trial; one study, specifically, included approximately fifty (50) children from a wide age range of 7 to 14 who also had diagnoses of anxiety in addition to HFA (Reaven et al., 2012). One of the limitations of this study was the lack of diversity in subjects because most of the children were Caucasian. Other limitations included a lack of a control group that was comparable with the time and attention to active treatment and also the relatively small outcome measures that were not normed on children and adolescents with HFA (Reaven et al., 2012). Other studies using group intervention have consisted of seventy-one children being assigned to participate in three small groups,

which consisted of children only, parents and children and a wait-list control group following consent forms (Sofronoff, Attwood, & Hinton, 2005). Limitations of this study included the small size of each grouping, the fact that children were separated by gender within groups and the reliance of parent report, which may have revealed a bias of expectations of improvement following their participation in this study (Sofronoff, Attwood, & Hinton, 2005). A group study by Wood et al., (2015) noted that in conducting group interventions using CBT protocols, that core coping skills including behavioral activation, cognitive restructuring and in vivo exposures should be included, using child-friendly acronyms to help children remember the sequence of steps taught to cope with anxiety. Many of the studies using CBT in a group therapeutic treatment plan or protocol noted the sequence of tasks and activities across interventions. An example included a study from Scarpa & Reyes (2011), which describes a group CBT intervention to improve emotional regulation in children with HFA, using one-hour group sessions over a 9 week period with an agenda and specific topics for each session. Structured sessions are another consideration in designing an effective CBT program using group meetings or therapy as an intervention. Interventions that include a parental component either through psycho-education and/or group intervention also improve the efficacy of CBT treatment with adolescents with HFA, which ensures continued use of strategies after this intervention ends.

Modifications to CBT for Adolescents with HFA

According to Scarpa, Williams White, and Attwood (2013), CBT techniques often require modifications and adaptations to be effective in working with students with HFA. The rationale is that children and adolescents with ASD, particularly HFA have

differences in perceiving, thinking and learning, compared with their typically developing peers (Scarpa et al., 2013). CBT has also been noted to be an effective intervention for adolescents with HFA because it presents a very logical and linear way of thinking and helps to explain the reason why we have emotions, how to identify and measure emotions and how to communicate and manage emotions (Scarpa et al., 2013). CBT is also useful in addressing issues related to emotional regulation and anxiety, which are common comorbid conditions for children and adolescents with HFA.

Although there is the general evidence across research studies that CBT is an effective intervention to use with children who present with a variety of clinical presentations, there is concern about the appropriateness of CBT for children with HFA. This concern is more reflective of the cognitive aspects of the treatment and also that most CBT treatment for students with HFA focus on the behavioral component (Lickel, MacLean, Blakeley-Smith, & Hepburn, 2012). There are questions about the cognitive aspect of CBT that may require modifications for students with HFA. The primary modifications to CBT that have been shown to make them more accessible for children with ASD and anxiety include the development of disorder-specific hierarchies, the use of concrete visual tactics, use of child-specific interests and the inclusion of parents in the treatment program (Moree & Davis, 2010). Additional modifications have included using a developmental model to adjust activities to the child's ability level. The recommendations of role plays, visuals, and the child's special interests with the use of social skills topics have also been deemed appropriate modifications (Moree & Davis, 2010).

Various studies have also noted the importance of assessment information on children with ASD or HFA to assist in making modifications to a CBT treatment program (Mennuti, et. al, 2012; Scarpa et al., 2013). Considerations of children and adolescents' intellectual abilities and information processing are helpful in determining strengths and weakness in their learning abilities (Scarpa et al., 2013). In addition to a clinician's awareness that children and adolescents with HFA may have difficulty with processing emotions, memory for sequential information and processing information in new contexts, there should be an awareness of the time it may take children and adolescents to process and respond to CBT techniques cognitively rather than intuitively (Scarpa et al., 2013). Scarpa & Reyes (2011) describe considerations for children with Attention Deficit Hyperactivity Disorders and Executive Functioning deficits which are often core to students who are also diagnosed with HFA. These considerations include increasing knowledge of emotional regulation strategies and parent confidence in being able to manage their child's emotions. Literature has suggested modifications that can be adaptive for use in CBT, especially for those who also have a diagnosis of ADHD ; these include highlighting relevant information, using graphs and visual aids, clearly posting and repeating directions, and providing a visual schedule (Scarpa et al., 2013). Regular feedback, supervision, and monitoring are essential in maintaining attention and reducing the number of distractions (Scarpa et al., 2013). Research also highlights some programming modifications for CBT, which include friendly and easily repeatable acronyms, as noted in the study by Donoghue, Stallard, & Kucia, (2011) such as PRECISE (Partnership working, Right developmental level, Empathy, Creative, Investigation and experimentation, Self-discovery and Efficacy and enjoyable). In using

the PRECISE model, there are modifications such as using visual and written information to reinforce the concept of partnership in CBT, being specific and directive and using precise literal language that matches the developmental level of the child. Additional modifications include setting realistic goals broken down into small steps, involving the parents for the reinforcement of skills, and using practical experiences from the child's everyday life to demonstrate links between thoughts, feelings, and actions (Donoghue, Stallard, & Kucia, 2011)

Given issues of atypical development with children and adolescents diagnosed with HFA, compared with their typically developing age peers, there may be some difficulty in engagement with some of the CBT tasks within an intervention setting, either group or individual (Lickel et al., 2012). This is a rationale for the limitations of extending CBT interventions for younger children to an adjusted level for adolescents. It appears that there has to be some innovation in developing and designing CBT interventions for HFA adolescents in maintaining interest and motivation for treatment (Reaven, 2011). There is a gap in the research literature regarding intervention studies for students with HFA because the majority focus on elementary school-aged children versus high-school aged students (Miller, Vernon, Wu, & Russo, 2014; Wong et al., 2015). Wood, et al., (2015) note that there has been limited attention given to treatments for adolescents with ASD. Also, many research studies on social skills interventions using CBT occur within clinical settings rather than in schools. There is also an additional gap in the literature regarding this type of intervention with adolescents with HFA who are culturally or linguistically diverse; most of the studies consist of few children from ethnic minority groups. These factors illustrate the continuing need for

more research on interventions for adolescents and young adults with HFA who are ethnic minorities and within school settings.

CBT and Co-Morbid disorders with HFA

Anxiety, Emotional Regulation and Attention Deficit Hyperactivity Disorders (ADHD) are common characteristics and co-morbid diagnosis with students with ASD and HFA. Scarpa & Reyes (2011) state that there are few research studies about emotional regulation in children with ASD, but they demonstrate increased rates of comorbid disruptive behavior disorders and anxiety. Kreslins, Robertson, & Melville (2015, p.1), note that approximately, “70% of children with ASD or HFA experience psychiatric comorbidity, with the most common being anxiety”. The prevalence rates of anxiety involving children and adolescents with ASD range from 11 to 84%. Although anxiety tends to present across the spectrum of autism, its presence tends to be influenced by individual factors such as age, the degree of social impairment and level of intellectual functioning (Kreslins et al., 2015). The most frequently reported types of anxiety include obsessive-compulsive disorder (OCD), social anxiety, and specific phobia which occur with typically developing children and those with ASD; however, within the ASD population, OCD tends to be more common (Kreslins et al., 2015).

Anxiety disorders and autism. Overall, the literature demonstrates that CBT presents as an effective intervention in improving social skills for adolescents with HFA in treating other co-morbid conditions such as anxiety, ADHD, emotional regulation and adaptive skills (Maddox, Miyazaki, & White, 2017; Scarpa & Reyes, 2011; Scarpa, Williams White, & Attwood, 2013). Anxiety disorders are a common characteristic and co-morbid diagnosis of students with ASD and HFA. CBT is often used as an initial

treatment for anxiety disorders with typically developing children and adolescents (Sukhodolsky, Bloch, Panza, & Reichow, 2013). Given the fact that CBT is considered an effective evidenced-based intervention in treating anxiety disorders, there is a growing body of research on the efficacy of using CBT to aid in reducing anxiety symptoms with those also diagnosed with HFA (Gates et al., 2017; Laugeson & Park, 2014; Moree & Davis, 2010; Wood et al., 2015). There is also the issue that there is a higher prevalence of anxiety disorders, particularly social anxiety and behavioral avoidance with adolescents with HFA, compared with younger children with HFA and typically developing peers. Wood et al., (2015), noted that there have been gains in anxiety treatment with CBT groups that also included improved ratings in adaptive skills and autism symptom severity. Kendall (2018) notes that group treatments tend to have practical advantages in the treatment of anxiety. These treatments include normalizing anxiety symptoms through peers, increasing and encouraging social contact with peers and providing service delivery that is conducted in an efficient and timely manner.

The methodology of most studies examining CBT, anxiety and HFA have included pre and post-test data as a comparison of the severity of symptomology of anxiety and characteristics of ASD or HFA in potential subjects. However, the best methodology in examining the effectiveness of using CBT with social skills includes the use of randomized control trials (RCTs) (Bauminger, 2007; Chang et al., 2014; Miller, Vernon, Wu, & Russo, 2014; Rao, Beidel, & Murray, 2008). Some studies have used the Autism Diagnostic Observation Schedule (ADOS) and the Social Communication Questionnaire (SCQ) and documented a symptom checklist using the DSM-IV TR (Reaven, 2011). Others have used instruments specific to HFA in what used to be known

as Asperger's Syndrome (AS) using the Childhood Asperger's Syndrome Test coupled with items based on DSM-IV TR criteria (Sofronoff, et al., 2005). These instruments were used to distinguish between children who had a diagnosis of Asperger's Syndrome from High Functioning Autism because this was based on whether or not the child had a significant language delay before the age of three. However, there have been recent diagnostic changes to the DSM; therefore, with the DSM-5, future considerations may include noting distinctions between children having HFA from those diagnosed with social communication disorders. Other studies have included the use of the Beck Anxiety Inventory (Scattone & Mong, 2013), and parents' reports of anxiety using the Spence Children's Anxiety Scale and the Reynolds Children Multidimensional Anxiety Scale (RCMAS). Wood et al., (2015) used a variety of anxiety scales in their study; however, there were other scales used related to social skills and autism-specific characteristics such as the Social Responsiveness Scale, Second Edition (SRS-2) and the Social Skills Rating System (SSRS) used to measure outcomes from the social skills interventions (Laugeson, Gantman, Kapp, Orenski, & Ellingsen, 2015; Vernon et al., 2016).

In addition to using pre and post-test data measures to gain information regarding the effectiveness of CBT as an intervention, interview data with parents and teachers have been included to gain additional perspectives of the effectiveness of CBT within the home and school settings. Reaven (2010) reports that there are questions about whether or not CBT should be supplemented with social skills intervention for children with ASD; in addition, how social skills interventions should be best delivered are unclear. It is suggested that there is a link between social skills deficits and anxiety disorders,

especially with adolescents with ASD or HFA. Reaven (2010) also reports that clinicians must be careful in using specific social skills programs because the efficacy of these treatment programs is unclear for students with ASD and HFA.

Another component of the research on CBT involving children and adolescents with HFA includes parental involvement and their perceptions of the effectiveness of this intervention in reducing anxiety and improving social skills. Cappadocia & Weiss (2011) summarized social skills training groups with parental components and noted that measurements used included a range of data from parent report to the use of the Social Skills Rating System (SSRS) and Social Skills Questionnaire (SSQ). Other studies reviewed that included a CBT orientation included rating scales such as the Behavior Assessment System for Children (BASC). Studies that examined interventions with a parental component also noted that there was a psychoeducational program for parents while their children participated in the intervention group (Cappadocia & Weiss, 2011). In reviewing the literature, it was noted that there were few studies that included adolescents or high school students (ages 14 and older) in their treatment except for those examining traditional social skills training intervention but not focusing on students with HFA. Parental involvement is an important aspect of working with children with ASD or HFA in a CBT program (Beaumont & Sofronoff, 2008; Kendall, 2018; Moree & Davis, 2010, and Sofronoff, Attwood, & Hinton, 2005). Sofronoff et al., (2005) suggest that subjects whose parents were involved in treatment had better outcomes especially at follow up after the CBT treatment ended, compared with those children who did not have parental involvement. There is also a consideration of maintenance of skills after the treatment group has

ended. The parental involvement aspect of intervention programs using CBT appears to be a valuable component to using CBT in decreasing anxiety and improving symptomatology related to HFA. This also reflects many activities within a CBT treatment program which includes homework to help generalize targeted skills outside of the therapy and treatment sessions, and parents acting as facilitators for children practicing social skills at home (Beaumont & Sofronoff, 2008; Kendall, 2018; Reaven & Blakeley-Smith, 2013).

Evidenced-Based Practices of Social Skills Interventions for HFA using CBT

Peers. There are a number of well researched evidenced based practices of social skills interventions for adolescents with HFA. One such intervention includes the Program for the Education and Enrichment of Relational Skills (PEERS) developed at the University of California, Los Angeles (UCLA) to teach adolescents with HFA the skills needed in establishing and maintaining friendships and managing peer conflict (Laugeson, Frankel, Gantman, Dillon, & Mogil, 2012; Laugeson & Park, 2014; Schohl et al., 2014). PEERS uses core principles of CBT to improve social functioning and interaction skills of children and adolescents with HFA. PEERS is a manualized program that is conducted in a small group format and applies CBT to methods of instruction which include psychoeducation, role plays, cognitive strategies, behavioral rehearsal, feedback, homework and parental involvement within a small group format (Laugeson & Park, 2014; Schohl et al., 2014). One study of PEERS evaluated middle school and high school adolescents' social competence and friendship skills over a fourteen (14) week period for approximately ninety (90) minutes a session (Laugeson et al., 2012). These sessions included extensions of the original PEERS model with

additional didactic lessons on the appropriate use of social media, cyberbullying, online safety, strategies for handling rumors and gossips, strategies for handling bullying and changing bad reputations (Laugeson et al., 2012).

Another essential component of PEERS is that parents of adolescents play a role in the intervention. Parents participate in separate, co-occurring sessions during the PEERS program and as a result learn to act as social “coaches” for their adolescents (Laugeson et al., 2012; Schohl et al., 2014). In being coaches, parents are instructed on ways they can help their own adolescents overcome barriers to the weekly socialization homework (Laugeson et al., 2012). In many social skills group programs, one of the lacking elements for many such programs and interventions for adolescents with HFA are the structured involvement of parents. Parents further provide support through direct instruction, modeling appropriate social behavior and supervising the practice of social behavior. PEERS also focuses on teaching social etiquette and the rules of social interactions by identifying common social situations and using simple rules of social interaction and communication skills. This model follows the learning profile of most adolescents with HFA because lessons are concrete and structured (Laugeson et al., 2012; Schohl et al., 2014). Common skills addressed in PEERS include conversational skills (i.e. how to begin and end a conversation), developing and establishing friendships, using humor appropriately and handling rejection, rumors, and gossip (Schohl et al., 2014).

PEERS has been researched and studied using random controlled trials (RCTs) and clinical trials. Laugeson et al., (2012) noted that in a previous randomized control trial using PEERS, adolescents’ knowledge of social skills improved and get-togethers with friends increased, compared with the delayed treatment group. Results from parent

reports also suggested that adolescents significantly decreased ASD symptoms related to social responsiveness and adolescents social skills knowledge increased (Laugeson et al., 2012). This was evidenced by improvements in parent ratings using the Social Skills Rating System (SSRS). However, one drawback of the PEERS program is the lack of non-disabled peers included as models for appropriate social skills.

Start. The Social Tools and Rules for Teens Program (START) was developed by Dr. Ty Vernon at the University of California at Santa Barbara (UCSB). START uses an experiential learning model and CBT to teach social skills using adolescents with HFA and non-disabled peers. Experiential learning is described as the process of learning through real experiences and being able to reflect on these experiences (Kolb, 2014). Vernon, Miller, Ko, & Wu (2016) notes that although structured social skills intervention models are growing and widely used interventions, there is limited research available on the potential benefits of experiential learning within a social skills learning model. The model for START emphasizes natural interactions within a peer group along with didactic approaches, a “learning by doing” intervention (Koegel, Vernon, Koegel, Koegel, & Paullin, 2012; Vernon, 2014). The benefits of this model are that there is exposure so that adolescents may feel included and accepted by a peer group, use of the group forum to fully participate and become involved in a learning process where success and failure can occur in a socially safe environment (Vernon et al., 2016). The approaches used by the START program also enable adolescents to generalize skills and promote self-awareness and reflection skills (Vernon et al., 2016).

The START program is presented in a “club-like” format resembling an after-school, extracurricular club or activity. The group meets on the campus of UCSB with

adolescents aged 12-17 who have an existing diagnosis of ASD based on DSM-5 criteria (Miller, Vernon, Wu, & Russo, 2014; Vernon et al., 2016). Inclusion criteria included the use of full sentence phrases to communicate and a verbal IQ equal to or greater than 70 (Vernon et al., 2016). The START is a twenty-week intervention, with two-hour weekly sessions consisting of the following components: an individual therapeutic check-in session, a group unstructured socialization time, a structured group activity, group discussion, and practice of the social skills topic and a individual check out session with parental involvement (Vernon et al., 2016).

The check-in sessions are typically 5 minutes in length and provide an opportunity for adolescents to reflect on their experiences during the previous group activity and to review the social homework from the previous week (Vernon et al., 2016). The unstructured socialization period typically lasts for 20 minutes and is allowed to happen without an agenda to create natural social connections among peers. This period typically includes adolescents engaging in conversation with each other, playing video and board games and using food and snacks to create a casual, club-like atmosphere (Koegel et al., 2012; Vernon et al., 2016). The group activity phase includes a structured activity with a focus on the weekly topic. The activities vary each week and encourage sharing and learning about peer interests, increase comfort working within a group and facilitate cooperation and teamwork (Vernon et al., 2016). The topic discussion and practice phase includes individuals being asked to share their experiences on the previous weeks topic that was discussed earlier during the check-in session. Peer models introduce the weekly social skills topic, which is discussed for the remainder of the group session (Vernon et al., 2016). Topics are demonstrated by peer models using role plays,

with contrasting examples that show an inappropriate and an appropriate use of the targeted skill (Vernon et al., 2016). The check in and check out session includes a five-minute individual session with the adolescent, parent and peer model. This includes a review of the level of comfort in using the identified target skill and interacting with the group, using a Likert rating scale (Vernon et al., 2016). At this time, the adolescents are asked for their feedback or “how did it go” and are given individual feedback by the peer model. The parental component includes discussing the social skill topic with parents with directions for the continued use and monitoring of the skill at home, using homework (Vernon et al., 2016).

Massi. The Multimodal Anxiety and Social Skills Intervention (MASSI) is based on CBT principles and addresses adolescents’ thoughts, feelings and actions and the interactions among these three variables to initiate change (White, Albano, et al., 2010). MASSI also has elements of applied behavior analysis (ABA), which states that there is a function to all behavior (White, Albano, et al., 2010). MASSI attempts to target the unique needs and challenges for children and adolescents with ASD and requires three essential components: individual treatment, group treatment, and parent involvement (White, Albano, et al., 2010). The key difference between MASSI, PEERS, and START is that the treatment is in three modalities: individual treatment, group treatment and parent education and involvement. White, Albano, et al., (2010) state that any one of these modalities, if used alone, has limitations such as the generalization of skills and treatment gains to peer interactions, the lack of individualization and assessment of the impact of this treatment using traditional parent-report measures. There are additional features of MASSI which include immediate, direct and specific feedback on

performance and effort using the therapist and the parent in tandem. A second feature includes a strong emphasis on positive social learning experiences because many adolescents have experienced social failure (White, Albano, et al., 2010). A third feature consists of opportunities for children and adolescents to model new skills; those with high functioning ASD have difficulty responding appropriately in social situations because they do not know what to do. Modeling demonstrates what should happen in a given situation and increases the likelihood that the adolescent will learn the skill, especially with repeated practice (Scarpa, Williams White, & Attwood, 2013; White, Albano, et al., 2010). A final feature is the use of psychoeducation and explicit teaching about ASD and anxiety, which occurs across all three modules of this treatment program (White, Albano, et al., 2010). This feature also addresses key features of ASD including the lack of recognition and interpretation of emotions, intentions, and behaviors of others. One example is that an adolescent with HFA may not know when he or she has unintentionally offended a peer, resulting in peer rejection, but the adolescent with HFA may not understand the reason why (White, Albano, et al., 2010). This also leads to increased anxiety with social relationships and social interactions with peers. In treatment, honest conversations and explanations of how one's behavior impacts others are done in both individual and group therapy, with parents receiving education on the characteristics of HFA and anxiety (White, Albano, et al., 2010).

These programs have produced research results suggesting an improvement in overall social skills; however, there remains a gap in the literature regarding the application of these practices and treatments within a school setting. An additional limitation with these programs includes the lack of inclusion of ethnic minority students

with HFA and also non-disabled peers who actually interact with the HFA subjects on a frequent basis in a natural setting, across different environments such as within schools.

Chapter 3: Method

Participants

This study included students participating in an established socialization group for high school students grades 9-12, ages 14 to 17 with a diagnosis of Autism Spectrum Disorder, specifically High Functioning Autism. The students identified for participation in this study were receiving services via an Individualized Education Plan (IEP) and participating in a regional program designed for students with high functioning autism (HFA). Inclusion criteria consisted of a verbal IQ greater than 70 and social skills instruction either as specific goals or as an accommodation or modification on their IEPs. The established program is identified as a social communication and learning support (SCLS) program from the local central office of special education of a large suburban school system in the Mid- Atlantic region of the country. The SCLS program includes students participating in general education, inclusion (classes taught by a special educator and a general educator) and self-contained (classes taught by a special educator) classes.

The high school where this study was conducted has a total student population of one thousand and sixty-four (1,064). Demographically, the high school has a student population that is ninety percent African American, five percent Caucasian, three percent Latino, and three percent Asian. The high school also services a large population of students receiving special education services; these number approximately sixteen percent of the total student population. The participants of this study consisted of three African American males, ranging in age from 15 to 17 and one female student aged 16, who identified as multi-racial. There was an additional participant who identified as an African American male, aged 17, who dropped out of the study. Specifically, student 1 is

a 16-year-old, African American male, who has had the diagnosis of autism since elementary school. Student 1 also has marked difficulties with pragmatic language, attention, and executive functioning and an additional diagnosis of ADHD, combined presentation. Student 1 has strong intellectual abilities, all of which are within the average to above-average range; however, he tends not to engage in long conversations with others and continues to have difficulty interpreting and responding to the social environment.

Student 2 is a recent transfer into the SCLS program from another high school. Student 2 is a 17-year old, African American male who has had the diagnosis of autism since early childhood. He also has a diagnosed anxiety disorder with the presence of mood liability. Student 2 exhibits average verbal skills and superior nonverbal skills but has difficulty appropriately interpreting social relationships with peers of the opposite gender. He also receives individual counseling services by the school psychologist during the school day, on a bi-weekly basis. Student 2 has an older sibling with an autism spectrum disorder diagnosis who has a high school diploma and serves in the military.

Student 3 is a 17-year old, African American male who also has had a diagnosis of autism since early childhood, at the age of three. His developmental history was significant for significant speech-language delays because he could not put words together until the age of three. Student 3's intellectual skills are in the low average range; however, his verbal abilities were within the borderline range compared with his nonverbal abilities. He receives speech-language services on a consultative basis as part of his current educational plan. However, he enjoys engaging with others and does

impressions of characters from television shows and movies. Student 3 has significant difficulty processing information and completing tasks quickly.

Student 4 is a 15-year old, multi-racial female. Student 4 has been in the SCLS program for over a year. Her history noted that she had been initially identified as having a developmental delay and was not diagnosed as having autism until the age of 5 years. Student 4 also has a diagnosis of a generalized anxiety disorder. She has average intellectual skills; however, she displays stronger nonverbal skills which were within the average range compared with her verbal skills which were within the low average range. Student 4 also receives additional services within the home and school that includes an aide who assists her with transitions (changing classes at school and leaving home to go into the community). These services also help support Student 4 to become more independent in initiating tasks such as daily living skills (getting up and getting dressed without prompting and reminders, initiating chores and communicating effectively with her family).

The established socialization group (SCLS) also consists of peer helpers, facilitators or models who are students within the general education population, the majority of whom do not have an identified disability as defined by the Individuals with Disabilities Education Act (IDEA). Some peer facilitators have an identified disability and receive services with various disability codes including specific learning disability (SLD) and other health impairments (OHI), specifically for Attention Deficit Hyperactivity Disorder (ADHD). The peers are used in the intervention to provide modeling of appropriate social skills for students with HFA. Peers are selected and screened by the school psychologist and school social worker by interest and motivation

for supporting and interacting with students identified as HFA. These students are given student service-learning hours for their participation, which is a state graduation requirement for those pursuing a high school diploma.

Procedures

The socialization group (SCLS) being studied is co-lead by the school psychologist and school social worker; they meet on an after-school basis, weekly throughout the school year, for approximately 120 minutes. The sessions of this established group consist of 40 minutes of free socialization time, which includes adolescents playing board games, video games, listening to music, drawing art and anime and engaging in conversation with others. The free socialization time is monitored by the social worker and school psychologist and allows the adolescents participating in the group to socialize and engage in activities of interest with other students, both those with autism and their neuro-typical peers. After the free socialization time, a structured 40-minute lesson on a specific social skills topic is introduced. Topics have included how to start a conversation, how to make greeting and introductions appropriately and how to prepare for social activities in school such as dances and athletic events. These topics also include activities such as role plays, discussion, and modeling from peer helpers. After the structured lesson, there is a 40-minute snack break and ending session. During this break, adolescents are able to engage in social conversation about the structured lesson and use socialization skills while eating snacks such as chips and pizza. The goal of this last 40-minute period provides opportunities to practice skills previously learned and also for adolescents to receive feedback about their social skills from the social worker, school psychologist, and peer helpers.

This study will explore only the 40-minute structured group lesson (the second of the three 40 minute block described previously) within the larger structure of the SCLS. These lessons are specific CBT topics, which are different from topics discussed in the established socialization group (see appendices for sample lessons). This study originally had a design for a waitlist control trial consisting of two separate groups of students identified as having high functioning autism who were already participants in the established socialization group; however, due to circumstances with the institutional review board of the local school system and additional time constraints, only one group participated in the intervention for the limited time frame of six weeks. Considerations were made regarding the reduction of time and participants because this study will be used to inform current practices for the larger, more established socialization group for the next school year.

In this study, students were randomly selected from participants within the SCLS and received social skills interventions with a CBT emphasis for separate six-week sessions. Students' participation in the group was voluntary and not a condition of their participation in the regional special education program or the larger, established SCLS. Informed consent from the parents and assent from adolescents were received for all students that participated in the CBT sessions. The demographics of the five students who began participation was consistent with expectations, given the demographics of the established socialization group. The gender of the participants reflects the prevalence rates of autism suggesting a higher rate of diagnosis with males, compared with females. The majority of students who have participated in the SCLS group identify as African American, which reflects the demographics of the current high school setting.

The literature suggests that African American students are less likely to be identified as having ASD, which has implications for early intervention services. The majority of students who participated in this study were identified as having HFA and also had identified needs for social skills and social communication skills as indicated by their IEPs. A few students had additional identified needs on their IEPs addressing anxiety and attention deficit hyperactivity disorder symptoms. This study included the perspectives of parents as several researchers (e.g., Cappadocia and Weiss, 2011; Reaven and Blakeley-Smith, 2013; Reaven, Blakeley-Smith, and Hepburn, 2014) have suggested in their studies as an essential component for improving the socialization skills and in treating other co-morbid conditions for adolescents with high functioning autism.

The after-school social skills program. The established after-school 120-minute weekly program (SCLS) begins each session with approximately 40 minutes of unstructured socialization time. This includes socialization with other students who are peer helpers, the school psychologist and school social-worker, using casual conversations, playing portable video games and board games. This unstructured time allows the co-facilitators the opportunity to observe behaviors and interactions within a natural and comfortable social environment without a set agenda. This period also allows students with HFA to socialize and interact with each other and peer helpers. The structure of the group is an extracurricular, club-like environment to reflect the nature of other extracurricular activities provided in a high school setting. The agenda and activities for each lesson are developed collaboratively by the school psychologist and school social worker. The school psychologist has had training in CBT and was able to provide guidance and assistance to peer facilitators during each session. The school social

worker also has had training and experience in providing both group and individual counseling techniques for students with HFA.

The CBT socialization skills group included transition into approximately 40 minutes of structured group activities after the unstructured socialization phase. This specific time period is the focus of this study and the CBT activities targeting social skills instruction. These activities focused on the weekly topic and included different techniques each week, which included games about the targeted topic, interactive discussion, role plays, and video modeling. There were two primary goals of this structured group activity time. The first goal was to encourage discussion and problem-solving on the individual and group level. The second goal was to increase HFA adolescents' comfort in working in groups and to emphasize cooperation and teamwork in developing social skills with nondisabled or neuro-typical peers.

After the group activity, there was a snack break of approximately 30 minutes, providing additional opportunity to practice skills learned during the group activities. At the conclusion of each structured group activity or session, participants reflected on the target skills addressed during the session and homework was assigned in the form of a social goal practice sheet for the final 5 minutes of the group intervention. The social goal practice sheet reflected the identity the person with whom the student practiced the skill being taught, along with opportunities and frequency in practicing the skill outside of the school setting (did the student practice the skill and how many times a week one, two, three or four times?) See appendix H for an example. The students had the opportunity to describe their experiences in detail using the social goal practice sheet by answering questions such as: "Who were you talking to?", "What was the conversation about?" and

“How did it go?” (Vernon et al., 2016). The social skills goal practice sheet provided additional data to the researcher on parental involvement and supervision, reflecting the practice of specific skills. This also provided the parents and students with the opportunity to provide input into the social skills goal practice outside of the school setting.

CBT Sessions. The CBT socialization group consists of six sessions, over six weeks, with each session consisting of structured social skills lessons for approximately 40 minutes. Some students selected to participate in the CBT sessions had been participating in the more established group intervention for years or since entering the SCLS program. One student had just started participating in the established group intervention and identified as a new student entering the program.

The CBT socialization group was facilitated by the school psychologist for the high school. In addition, three peers, two of whom do not have an ASD diagnosis participated as facilitators. There was one peer facilitator who had an ASD diagnosis and was a recent graduate of the program; however, these peer facilitators were not included in the study. Peer facilitators were provided guidance by the school psychologist on group facilitation skills such as how to build and sustain rapport and an introduction to group practice sessions and activities. Peer facilitators were provided with ongoing supervision to ensure appropriate practice and feedback with student participants and interactions on the specific targeted skills identified for each group session.

The forty-minute sessions and social skills lessons are not manualized and consist of various activities; these include role plays, games and direct instructional techniques, which were compiled and developed by the school psychologist and school social worker

and follow a cognitive behavioral therapy (CBT) model. There were elements of the sessions that were derived from various sources including elements from PEERS, START and the MASSI programs, published social activity workbooks, resources for teens with autism, and cognitive behavioral therapy tools (i.e. worry cards, flexible versus rigid cards and unhelpful thinking styles worksheet) (Laugeson & Park, 2014; Shaul, 2012; Vernon et al., 2016). Topics were selected based on information provided from parents and students; these were based upon their identified needs as indicated on their individual education plans and placed within a CBT framework. These skills included: psycho-education about autism spectrum disorders, an introduction to the cognitive model and cognitive triad, identifying and using self-monitoring behaviors and accepting social feedback, reducing anxiety using relaxation techniques, cognitive restructuring using thought records in social exchanges and cognitive restructuring for reciprocal social exchanges. The end of the six-week sessions included an overview of all the topics presented and the skills learned. The beginning session (session 1) included psycho-education about autism with a review of the diagnostic characteristics, which is a key component of CBT. The end of the six-week sessions included an overview of all the topics presented and skills learned. Included in Table 1 is the complete agenda that outlined all six sessions of the CBT social skills intervention group. Appendices A through G provide information and samples of session content.

Table 1

Socialization group sessions

Session	Topics
Session 1	Introduction and Psycho-education about Autism
Session 2	The Cognitive Model and the Cognitive Triad
Session 3	Self-monitoring behaviors and social feedback
Session 4	Reducing Anxiety using relaxation techniques
Session 5	Cognitive Restructuring using thought records in social exchanges
Session 6	Cognitive Restructuring for reciprocal social interactions and summary

Measures

Student participants were asked to complete a self-reported rating scale, the Social Skills Intervention System (SSIS) as a pre and post-intervention measurement tool (Gresham & Elliot, 2008). The SSIS student rating scales (ages 13-18) form measured seven domains of social skills functioning: Communication, Cooperation, Assertion, Responsibility, Empathy, Engagement, and Self-Control. The communication scale included items such as taking turns, making eye contact during a conversation, using an appropriate tone of voice and gestures, and being polite by saying appropriate greetings and phrases. The cooperation scale included items such as helping others, sharing materials, and complying with rules and directions. The assertion scale included items such as initiating behaviors, such as making introductions, asking others for help and

responding to the actions of others. The responsibility scale included items such as showing regard for property or work and demonstrating the ability to communicate with adults. The empathy scales included items such as showing concern and respect for others' feelings and viewpoints. The engagement scale included items such as the adolescent's ability to join activities in progress, being able to invite others to join, initiating conversations, making friends and interacting with others. The self-control scale included items which measure the adolescent's ability to respond appropriately to conflict and non-conflict situations, which include disagreeing, teasing and taking turns and compromising (Gresham and Elliot, 2008). Composite scores and subscales of the SSIS were used as dependent variables to answer the research questions and hypotheses in this study.

The SSIS also measured five domains of competing problem behaviors: Externalizing, Bullying, Hyperactivity, Inattention, Internalizing and Autism Spectrum. Externalizing included being verbally or physically aggressive, arguing and failing to control temper. Bullying means forcing others to do something, hurting people physically or emotionally and not letting others join in an activity. Hyperactivity/Inattention included behaviors such as moving about excessively, lack of impulse control and becoming distracted. Internalizing includes behaviors such as feeling anxious, sad and/or lonely. The autism spectrum problem behavior scale included common characteristics of social skills problems which include poor social interactions, not taking part in conversations, not making eye contact, making odd gestures and becoming upset at changes in routine or having purposeless routines (Gresham and Elliot, 2008). Gresham and Elliot (2008) explained that students rate how true each social skill and problem

behavior item is for them using a Likert scale (*not true, a little true, a lot true and very true*) and the importance of each social skills item (*not important, important, critical*).

Parents were given a complimentary version of the SSIS to evaluate their perceptions of their adolescents' baseline skills. The parent version of the SSIS form has 83 items. The SSIS provided both combined and sex-specific age-based norms for parent, teacher and student rating scales. The parent forms included norms for ages 3 to 5, 5 to 12 and 13 to 18 (Gresham & Elliot, 2008 p. 3). The student rating forms provided norms for ages 8 to 12 and 13 to 18; the normative scores were developed from a nationwide standardization sample of approximately 4,700 children aged 3 through 18 years representing the U.S. population according to sex, race, socioeconomic status and geographic region (Gresham & Elliot, 2008 p.3). The internal consistency alpha reliability coefficients indicated median scale reliabilities of the social skills and problem behaviors scales were in the mid to upper .90s for every age group on each form (Gresham & Elliot, 2008 p.65). The test-retest reliability for the parent form noted subscale reliability in the .70s for the social skills subscales and the .80s for the problem behavior subscales, with the mean scale and subscale scores remaining stable across administrations (Gresham & Elliot, 2008 p.68). Students and parents were given the SSIS post-intervention to determine if there had been any changes in social skills importance and problem behavior and to compare similarities among ratings.

Parents of student participants completed the Social Responsiveness Scale-Second Edition (SRS-2) as a pre and post-intervention measurement tool to assess the influence of treatment when the students were at home. The SRS-2 is a 65-item questionnaire measuring social reciprocity, social motivation, social cognition social awareness and

repetitive and restrictive behaviors (Constantino and Gruber, 2012). The SRS-2 reported internal consistency alpha reliability coefficients for the parent forms to be above 0.90 and there were strong correlations with other measures of autism symptomology such as the subscales of the Autism Diagnostic Interview-Revised (Constantino and Gruber, 2012). Parents completed the school-age SRS-2, pre-intervention, to assess the social behaviors of children and adolescents. The school-age SRS-2 was designed to measure dimensions of interpersonal behavior, communication and repetitive/stereotypical behaviors that are characteristics of autism spectrum disorders (Constantino and Gruber, 2012). The SRS-2 provided two subscales, *social communication and interaction (SCI)* and *restrictive interests and repetitive behaviors (RRB)* that correspond to the DSM-5 criteria for autism (Constantino and Gruber, 2012). The SRS-2 was used post-intervention, and a comparison was made in using this measure pre and post-intervention to determine if there were significant differences in ratings from parents across these domains.

During the study, each participant was administered the SSIS student form by the lead evaluator to assess and obtain baseline measures of students' social skills and problem behaviors. Consequently, each participant's parent completed the SSIS parent form to obtain baseline measures of their perceptions of each student's social skills and problem behaviors before beginning the CBT socialization intervention group intervention. Parents also completed the SRS-2 at baseline as an additional measurement of pre-intervention characteristics. After the six-week sessions, both students and parents were again administered the SSIS to measure social skills and problem behaviors.

Parents were given the SRS-2 again, post intervention, to note any changes in symptoms and characteristics mentioned previously.

This study used additional measures, including a self-monitoring form, which noted the frequency, length, and cooperation of practicing the specific skill related to each lesson that the student is required to practice at home with parental supervision. This form was completed by the student and the parent collaboratively. These measures were reviewed by the researcher to address the fidelity of implementation and to indicate further practice for targeted skills within the group.

Chapter 4: Results

To examine whether or not social motivation, social awareness, and social cognition will improve, following the implementation of a group CBT social skills training for ASD, a paired samples t-test was conducted to compare ratings from the parent version of the Social Responsiveness Scale, Second Edition (SRS-2) with its subscales. The SRS-2 consists of the previously mentioned subscales and includes a total score which was used as part of a pre-intervention and post-intervention analysis to determine whether or not there would be a significant difference in ratings to indicate a change in these variables. There was one missing data sample because the parent of one participant did not complete the SRS-2 pre-intervention. As a result, this specific data was not included in the data set, which resulted in a sample of 3 instead of 4 for these particular ratings. Results based on total ratings on the SRS-2 noted that there were no significant differences in total scores pre-intervention ($M=63.00$, $SD=5.292$) and post intervention ($M=64.50$, $SD=5.447$).

The results also noted that there was no significant difference when comparing pre and post intervention ratings with social communication, social motivation, social awareness, social cognition and restrictive and repetitive behaviors $T(2)= 1.000$, $p>0.005$; $T(2)=0.762$, $p>0.005$; $T(2)=0.854$, $p>0.005$; $T(2)=-.1.000$, $p>0.005$; $T(2)=1.000$, $p>0.005$). There were also no significant differences overall for social communication and interaction $T(2) =0.655$, $p>0.001$ pre and post intervention. Parents reported that their children enjoyed attending the group and had been attending the other larger, established group intervention for years, which focused on more traditional social skills topics and interventions. There was one parent who reported that his/her child had

participated in the larger group only since the middle of the school year. Parents reported that they would like their children to generalize skills learned and taught during the group intervention, whether it was CBT focused or traditional social skills.

Table 2

Paired Samples Statistics SRS-2 Subscales Comparison Pre and Post Ratings

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Social Awareness Pre	63.33	3	9.074	5.239
	Social Awareness Post	60.33	3	7.506	4.333
Pair 2	Social Motivation Pre	68.67	3	7.767	4.485
	Social Motivation Post	67.00	3	5.292	3.055
Pair 3	RRB Pre	62.67	3	10.017	5.783
	RBR Post	61.33	3	8.021	4.631
Pair 4	Social Comm & interaction Pre	62.67	3	3.786	2.186
	Social Comm & interaction Post	61.33	3	2.309	1.333
Pair 5	Social Communication Pre	59.00	3	2.646	1.528
	Social Communication Post	58.33	3	1.528	.882
Pair 6	SRS 2 total score pre	63.00	3	5.292	3.055
	SRS 2 total score post	62.00	3	2.646	1.528

To examine the second research hypothesis, whether or not there would be significant differences in parent and student ratings of social skills, ratings from the SSIS were used from participants and their parents. There were no significant differences

between student and parent ratings pre-intervention with social skills $T(3)=0.540$; $p>0.005$ or with problem behaviors $T(3) = -0.1750$; $p>0.005$. There were also no significant differences between student and parent ratings, post-intervention for social skills $T(3)=1.256$; $p>0.005$ and problem behaviors $T(3)=-2.568$; $p>0.005$.

Given the limited time frame of this intervention (i.e., six weeks), and the small sample size of participants ($N=4$), additional data were reported, including descriptive data from rating scales and standard scores resulting from student and parent ratings. In an additional examination of standard scores on the SSIS comparing students' and parents' pre and post intervention ratings, many students reported improvements with their ratings of social skills post-intervention; however, they also rated their social skills to be adequate or within the average range pre-intervention (See table 3 for descriptive information). Parents' ratings noted some improvements with social skills; however, these improvements were slight and the standard scores seemed to fit the standard error of measurement (See table 4 for standard scores comparisons for pre and post intervention ratings). One exception was student 4, whose parent rated her social skills as slightly worse or overall, below average when compared with age peers, based on the normative data on the SSIS, post intervention. An explanation included examining the individual social skill ratings, which decreased from average to below average for cooperation and assertion from pre to post intervention.

Table 3

SSIS Descriptive Ratings of Social Skills Subscales Student and Parent Pre and Post Intervention

Social Skills Subscales	Student	Student Pre Behavioral Level	Student Post Behavioral Level	Parent Pre Behavioral Level	Parent Post Behavioral Level
Communication	Student 1	Average	Average	Average	Average
	Student 2	Average	<Average	Average	Average
	Student 3	Average	Average	Average	Average
	Student 4	<Average	Average	<Average	<Average
Cooperation	Student 1	Average	Average	Average	Average
	Student 2	Average	Average	Average	Average
	Student 3	<Average	Average	Average	Average
	Student 4	Average	Average	Average	<Average
Assertion	Student 1	Average	Average	>Average	Average
	Student 2	>Average	Average	Average	Average
	Student 3	Average	Average	Average	Average
	Student 4	Average	<Average	Average	<Average
Responsibility	Student 1	Average	Average	Average	Average
	Student 2	Average	Average	Average	Average
	Student 3	Average	Average	Average	Average
	Student 4	Average	Average	<Average	<Average

Empathy	Student 1	Average	Average	>Average	< Average
	Student 2	>Average	Average	Average	Average
	Student 3	Average	Average	Average	Average
	Student 4	<Average	<Average	<Average	<Average
Engagement	Student 1	>Average	Average	>Average	< Average
	Student 2	>Average	<Average	Average	Average
	Student 3	Average	Average	>Average	Average
	Student 4	<Average	<Average	<Average	<Average
Self-Control	Student 1	>Average	Average	Average	Average
	Student 2	Average	Average	Average	Average
	Student 3	Average	Average	Average	Average
	Student 4	<Average	< Average	<Average	<Average

>Average=Above Average; <Average=Below Average

Table 4

SSIS Standard Score Comparisons Student and Parent Pre and Post Ratings

Measure	Student	Student Pre	Student Post	Parent Pre	Parent Post
SSIS	Student 1	90	102	80	92
	Student 2	83	92	105	101
	Student 3	103	93	91	87
	Student 4	82	77	62	55
Problem Behavior	Student 1	115	86	110	103
	Student 2	87	86	116	138
	Student 3	90	86	118	115
	Student 4	106	104	116	109

In examining problem behaviors on the SSIS, Student 1 rated his behaviors to be above average pre-intervention compared with other students' ratings. However, Student 1 also rated problem behaviors to have significantly improved post-intervention. based on the standard score comparison. In examining parents' pre and post intervention ratings for problem behaviors, many rated their students as having average to below average skills in this area. However, the parent for student 2 ratings indicated that problem behaviors increased post intervention, based on standard score comparisons pre and post interventions. This is noteworthy because other parents' ratings in the study noted some decrease when comparing standard scores in problem behavior ratings, post-intervention.

An additional examination of the data, as noted in table 5, the parent ratings for student 2 indicated average ratings for bullying and internalizing behaviors; however, post-intervention ratings indicated that these subscales were rated to be within the above average range. In examining student 2 and his parent’s ratings of social skills pre and post intervention, the parents’ ratings appeared more positive, with most ratings being within the average range, which indicates adequate skills in these areas. However, student 2 ratings changed from average to below average with communication, pre and post intervention. Student 2’s ratings also changed from above average in assertion pre intervention to average post intervention.

Table 5

SSIS Problem Behavior Subscales Individual Ratings Student and Parent Pre and Post Intervention

Problem Behavior Subscales	Student	Student	Student	Parent	Parent
		Pre	Post	Pre	Post
Externalizing	Student 1	Average	Average	Average	Average
	Student 2	Average	Average	Average	Average
	Student 3	Average	Average	Average	Average
	Student 4	Average	Average	Average	Average
Bullying	Student 1	>Average	Average	Average	Average
	Student 2	Average	Average	Average	> Average
	Student 3	Average	Average	Average	Average
	Student 4	Average	Average	<Average	Average

	Student 1	Average	Average	Average	Average
Hyperactivity	Student 2	Average	Average	>Average	> Average
Inattention	Student 3	Average	Average	Average	Average
	Student 4	Average	Average	>Average	Average
	Student 1	Average	Average	Average	Average
	Student 2	Average	Average	Average	> Average
Internalizing	Student 3	Average	Average	Average	Average
	Student 4	Average	Average	>Average	Average
Autism	Student 1			>Average	> Average
Spectrum	Student 2			>Average	> Average
(parent rating	Student 3			>Average	>Average
only)	Student 4			>Average	>Average

>Average=Above Average; <Average=Below Average

Further examination of the data indicated that there were no significant differences between pre-intervention and post-intervention ratings among the same raters for students and for parents. Ratings for social skills using the SSIS noted no difference when parents rated students' social skills before and after the CBT group intervention sessions $T(3)=1.102$; $p>0.001$. There were also no differences between parents' ratings for students problem behaviors before and after the CBT group intervention sessions $T(3)= -0.257$; $p>0.005$. Students' ratings indicated no significant difference between social skills ($M=89.00$, $SD=9.878$) and problem behaviors ($M=99.50$, $SD=13.279$) before and after the CBT group intervention sessions $T(3)= -0.281$; $p>0.005$ and $T(3)=1.344$,

$p > 0.005$. However, students rated their social skills more positively than their parents had rated them, both before and after the intervention. During group sessions, students indicated specific areas that they wanted to change such as becoming less distracted, becoming more independent, being flexible with changing plans and expressing emotions and feelings with others more freely. Participants also expressed the ideas that they thought that they were able to make changes to their thoughts, feelings, and behaviors but with assistance and support; this was accomplished in examining content from the weekly practice sheets.

No significant differences were found when examining correlations among the parent and student ratings of social skills. It appears, however, that parents' and students' social skills scores were positively correlated ($r = 0.230$, $p > 0.005$). There appeared to be more positive correlations with social skills, post intervention, with students and parents ($r = 0.692$, $p > 0.005$); refer to table 6, which follows. Ratings of problem behaviors were negatively correlated ($r = -0.809$, $p > 0.005$) before the CBT group intervention sessions. Students tended to rate themselves as having more positive social skills and fewer problem behaviors compared with their parents' ratings. Post intervention, this relationship did not seem to change; students again rated their social skills to be more positive, compared with their parents' ratings. Problem behaviors were also rated to be not as difficult according to participants' ratings, compared with some of the parents who rated students to have more problem behaviors, even post intervention.

Table 6

Paired Samples Correlations of SSIS Social Skills and Problem Behaviors Pre and Post Intervention for Student and Parent Ratings

		N	Correlation	Sig.
Pair 1	SSIS Social Skills Student Pre SSIS Social Skills Parent Pre	4	.230	.770
Pair 2	SSIS Problem Behavior Student Pre SSIS Problem Behavior Parent Pre	4	-.809	.191
Pair 3	SSIS Social Skills Student Post SSIS Social Skills Parent Post	4	.692	.308
Pair 4	SSIS Problem Behaviors Student Post SSIS Problem Behavior Parent Post	4	-.316	.684

Although there were no significant changes in ratings of social skills, problem behaviors, social communication, social awareness, social motivation, social cognition, and repetitive and restrictive behaviors pre and post-intervention, anecdotal information from parents and students reflected, positively, the use of the activities that were CBT focused in a group setting. Parents reported that they would like students to practice skills more frequently with other peers and not only within the home setting. Parents also reported that the psycho-educational activity about autism was especially helpful and useful in exploring their children's perspectives of having autism, especially in the high school setting. In reviewing anecdotal and observational data of students during the

group sessions, all students participated and were engaged in the activities. Students reported that they enjoyed the psycho-education about ASD, including the differences between ASD and HFA. Students also reported to the investigator that they enjoyed the relaxation techniques during the session on anxiety and relaxation techniques. Students also reported that the use of visuals during the activities was helpful in learning about the various concepts such as the cognitive triangle, triad and thought records. Students were also observed enjoying participating in the role plays, especially with the peer facilitators because the investigator used practical situations that occur within the high school setting (See appendix for examples). Parents reported anecdotally to the investigator that they believed that this group intervention and the established social skills group intervention were beneficial for their students in the school setting. Many parents reported that the after-school socialization group as a whole was a significant reason why they wanted their students to participate in the SCLS program. Parents reported that in many instances their adolescents have socialized with each other in various activities that were not school related. One parent reported that his/her adolescent meets weekly with another student with HFA who attends another school outside of the school setting.

Regarding the use of homework and the weekly progress sheet, only student 4, used this tool consistently and was observed working on the practice activities immediately after each session. Student 4's parent reported that there was practice time for tasks, which varied. Student 4 also had the opportunity to practice with other adults because of additional services, which included the use of aides who work with this student in the home setting. Although Student 4 used the weekly practice sheet, this was not often recorded or brought to the investigator's attention; however, this information

was recorded verbally and via electronic communication from the student and the parent. The other students although engaged in the activities within the group sessions, did not consistently practice or work on the skills at home with their parents. The investigator did note that other students and parents reported more consistency with practice at home for activities related to psychoeducation about ASD and the use of relaxation techniques.

Chapter 5: Discussion

This study examined participation in a socialization group that included CBT components for high school students grades 9-12, ages 14 to 17, with a diagnosis of Autism. The goal of this study was to examine the effects of a CBT small group intervention conducted for six weeks to improve socialization skills for high school students with HFA. Another component of this intervention included parent participation, which has been seen as an important part of using CBT to address social skills with children and adolescents (Lordo, et al, 2017; Mandelburg, et al, 2014).

The results of this study suggest that no significant differences were found pre and post intervention between parent ratings of students' social communication, social awareness, or social cognition skills using the SRS-2 rating scales. There were no significant differences between ratings of students' social skills and problem behaviors and their parents' ratings using the SSIS scales. Given the small sample size, however, and the formative nature of the study, descriptive data were also reviewed. Students' ratings of their own social skills appeared to be consistent both pre and post intervention. Students' ratings of their own social skills also appeared to be more positive or less problematic compared with parents' ratings of their social skills during pre and post intervention. During group sessions, students were able to identify specific behaviors to target such as becoming more independent, becoming more flexible in handling change, communicating feelings and emotions and being less distracted. However, there were some differences between parents' ratings on the SSIS, particularly for problem behaviors. One participant (student 4) had parent ratings which indicated that problem behaviors were worse post intervention, compared with pre-intervention. In further

examining data obtained from the SSIS, student 4 was rated to have some problem behaviors that were attributed to ratings which were below average to average for bullying. These ratings could also be attributed to student 4's difficulty with the specific social skills of assertion and internalizing behaviors. Parents reported that they would like students to generalize those skills taught and learned in the group setting to various social environments, especially those outside of the home setting.

Daniel & Wood (2013) note that cognitive behavioral therapy programs targeting core autism spectrum deficits such as social responsiveness, focus on students developing cognitive strategies that will facilitate social interactions such as perspective taking and reciprocal communication. This includes understanding their own and others' thoughts, goals and behaviors, with the end result of improving the reciprocal social interactions with others. Daniel & Wood (2013) and Bauminger (2007) note that using CBT in social skills groups with students with HFA also showed increased peer cooperation. Bauminger (2007) noted that adolescents receiving group treatment had more difficulty demonstrating peer cooperation during spontaneous dyadic interactions with peers. This point speaks to the difficulties with generalization of social interactions with other peers and across settings, especially those with which students with HFA may not be familiar. Although this study did not find significance with quantitative ratings of social skills, the aims and goals of this study, which were to improve the core autism spectrum deficits of social cognition, social awareness, social interaction, and communication were consistent with the literature.

This study did not yield significant results in comparing pre and post intervention data; however, using CBT for social skills with high school student with HFA is feasible

within the school setting, based on observational and anecdotal data included in this study. The investigator experienced minimal difficulty in developing, modifying and implementing many of the activities, and these could be used within a 40-minute counseling session. The investigator also noted that many of the CBT strategies and techniques could also be used individually and could be incorporated into an already established group social skills program. It was noteworthy that not only did the participants in the study become engaged and commented positively on the activities, but also the peer facilitators were engaged and asked if they could complete the homework activities, particularly in the school setting. CBT also is an evidenced based practice that addresses anxiety disorders, which is often a co-morbid and prevalent condition for students with HFA (Kreslins, Robertson & Melville, 2015; Luxford, Hadwin & Kovshoff, 2017; White, et al, 2010). The numerous social opportunities of the high school setting (hallways, classrooms, cafeterias, and extracurricular activities), along with the ability to find and select appropriate neuro-typical peers to collaborate and participate in sessions, positively contribute to the feasibility of implementing CBT. These elements help emphasize practical skills in a natural environment where students with HFA encounter multiple social interactions. The efficiency and ease of use with CBT strategies, the targeted core deficits of ASD, the flexibility with modifications and the brief time for implementation and logical nature of CBT suggest its usefulness as a tool for school psychologists and other mental health providers in schools.

Limitations

It should be noted that there were several limitations of this study. One limitation includes the lack of a control group for comparison with this intervention. A second

limitation includes the small sample size, which limits the ability to generalize the findings. Cappadocia & Weiss (2011) note that the sample sizes of various social skills training group interventions influenced whether or not there are positive outcomes with any statistical significance. Otero et al., (2015) suggest that the variability of social skills training programs and a small sample size make it difficult to assess the quality of these interventions. A larger sample size with a randomized control trial and a waitlist control would be a preferred methodology to provide information on whether or not this intervention could be generalized to a broader population of adolescents with high functioning autism, especially in schools (Laugeson, et al, 2012; Miller, et al, 2014; Reaven, et al., 2012; Sofronoff, et al., 2005).

A third limitation is that the adolescents participating in this study were already participating in an established social skills intervention for students with high functioning autism, which is an optional part of their special education program. Because of this programming, it is difficult to know whether or not any gains were met because these students had already participated in an ongoing social skills intervention or the cognitive behavioral therapy sessions.

A fourth limitation of this study included the fact that the lead researcher was the one who independently developed and conducted the intervention. The lead examiner in this study, who had developed the CBT interventions, collected that data, consulted with the parents/guardians and performed the assessments; this, therefore, introduced the potential for bias into the study. Also, there could have been the consideration that another examiner who was blind to the nature and purpose of the study collect the data.

A final limitation includes the limited time frame of the study, six weeks. A review of the research literature supports the idea that effective social skills instruction or intervention should be implemented for eight weeks to observe any noticeable change (Miller, Vernon, Wu, & Russo, 2014). The researcher examined this shortened time frame, based on the reality of the time constraints that practicing school psychologists have to conduct group counseling interventions; as a result, it was determined that increasing the time frame of this intervention is something that should be explored for future research.

Implications and Directions for Future Research

This study was an attempt to expand previous research by implementing and evaluating school-based use of CBT as a treatment for social skills for adolescents with high functioning autism. As previously noted, there is a gap in the research investigating the use of CBT in school settings with students with ASD and social skills interventions that include a parental involvement component. Although the effectiveness of the intervention could not be established with this study, one implication is the use of CBT as part of a treatment intervention is feasible within the school setting, especially the high school setting, which addresses another gap in the literature. The students who participated in this study participated and enjoyed the activities. Their parents also reported some engagement and usefulness of the activities; however, they also wanted their students to exhibit more generalization of social skills across settings. Parents reported that the existence of a consistent social skills group, whether traditional or CBT, had a significant influence in having their adolescent participate in the SCLS program. Parents reported that their adolescents socialize with each other for activities that are not

school related. One parent reported that his/her adolescent socialized with another student who also has HFA and who attends another school, at least once a week. CBT, although evidenced based, is also practical for utility purposes within a school setting, especially the relatively brief nature of this intervention.

Another direction for future research includes conducting focus groups for parents to gain their perspectives about social skills interventions in schools. As reported in this study, parents stated that their children and adolescents enjoyed and consistently participated in the CBT intervention; however, a request was that their students generalize skills to various environments. A suggestion is the use of a pre and post evaluation tool to assess the knowledge of parents about CBT; this would provide psychoeducation to parents about CBT. Another component of CBT that could be explored further for future research is the use of homework to reinforce and practice skills, especially in using the weekly practice monitoring tool in this study. Additional direct assessment such as behavioral observations could supplement parents' perceptions of changes of their children or adolescents' behaviors, especially across a variety of settings. Providing additional reinforcement and engagement with parents in practicing skills and completing this tool would further establish the effectiveness of the intervention. In emphasizing a parental component, strategies and suggestions to help parents facilitate the practice of skills introduced in group settings can be included. Some suggestions include the use of focus groups with parents before, during and after the intervention to gain further information about their perspectives of social skill training. Another suggestion is to provide training to parents regarding how to practice and reinforce social skills in other settings to help generalize skills. This is especially helpful

in using CBT techniques because many parents may not be aware of the components of CBT and how it is used to teach social skills.

The third direction for future research includes addressing the service delivery model of social skills for adolescents with autism, especially those from culturally diverse backgrounds. Mandell, et al., (2007), note that given the differences in early diagnosis and intervention, many students and families from culturally and linguistically diverse settings are not included in genetic and treatment studies for autism. There are also implications for parents regarding access to appropriate services in schools, which creates additional barriers for their involvement in behavioral interventions (Tincani, Travers, & Boutot, 2009). The use of psycho-education for parents about autism spectrum disorders and social skills would be a helpful tool for schools to develop and implement. This is especially helpful for parents and families that may view the diagnosis of autism from a cultural perspective. Additional psycho-education regarding the social environments of schools and how this changes from elementary, middle school and high school would also be helpful in order to reinforce the need to make adjustments to educational goals and services as children and adolescents transition throughout their school careers.

Future research should also explore the use of CBT as a supplement to traditional social skills interventions. Although traditional CBT often requires adaptations and modifications for students with HFA, using traditional social skills training specifically targets skills such as starting conversations, ending conversations, establishing friendships, and joining new groups of peers (Cooper, Griffith & Filer, 1999; Vernon, et al, 2016). CBT can be embedded in current social skills curriculums as noted by studies

from Kasari & Smith, (2013), Laugeson & Park, (2014), Mandelberg, Frankel, Cunningham, Gorospe & Laugeson (2014) and Miller, Vernon, Wu, & Russo, (2014). This is particularly useful when including non-disabled or neuro-typical peers in social skills groups who serve as models. Although not a part of the study, the peer models who helped facilitate the group activities expressed an interest in the activities and the opportunity to practice skills at home. Neuro-typical peers are often provide good demonstrations of appropriate social skills, especially given the multiple social environments in high school. CBT can also be used with these peers to further increase their social skills, especially for peers who may not have autism, but are receiving services for other disabilities such as specific learning disability, emotional disability and/or other health impairments.

Although this study indicated a lack of significant differences with social motivation, social communication and social cognition according to parental ratings pre and post intervention, there was feedback that this is a worthwhile and potentially effective intervention. A future study should explore incorporating CBT into the more established and longer lasting social skills group which runs for the duration of the school year. Possibilities for this future study include comparisons for students with HFA and their peers who have good social skills, but do not have autism and may or may not have another disability or condition, such as anxiety or depression. Additional information regarding neuro-typical students' perspectives on socializing and engaging more frequently with their classmates with HFA and learning more about autism could also be explored. This includes opportunities for HFA and their neurotypical peers to practice and use social skills across the multiple settings such as the classroom, hallways,

cafeteria, dances, and athletic events, increasing the generalization of skills which has been a request of parents in increasing HFA students' socialization.

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Appendix A

Session 1: Introduction and Psycho-Education about High Functioning Autism

Spectrum Disorders

Welcome and introductions

What is Autism?

The group facilitator asks group members when they were diagnosed and how did they find out

There is an introduction to a youtube video titled, “What is High Functioning Autism”

<https://youtu.be/SukO28tQywI>

Discussion questions: Did you agree with the characteristics stated in the video? What does having Autism look like for you? Let’s talk about changes in development. What has been different from middle to high school? What have been some wins and weaknesses of having Autism as you have gotten older? Do you think having Autism is a gift or a weakness? Why and why not?

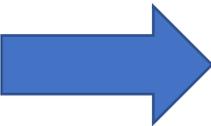
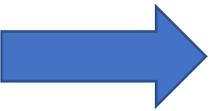
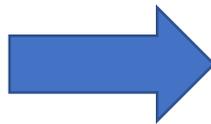
Activity 5 things: What are five things you wish your peers/classmates knew about Autism? How do you think this would help you in school?

What are five things you wish your teachers knew about Autism? How do you think this would help you in school?

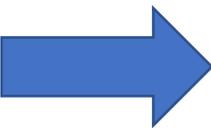
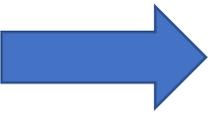
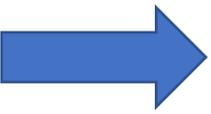
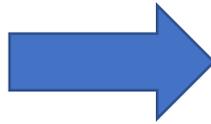
For your assignment, have a discussion with your parents about five things you wish they knew about Autism. Even if you have had discussions with them before about Autism, what are five things you wish they knew right now?

Appendix B

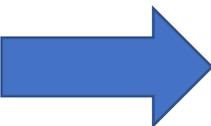
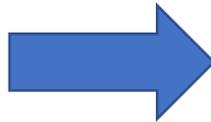
5 Things I Wish My Peers Knew About Autism



5 Things I Wish My Parents Knew About Autism



5 Things I Wish My Teachers Knew About Autism



Appendix C

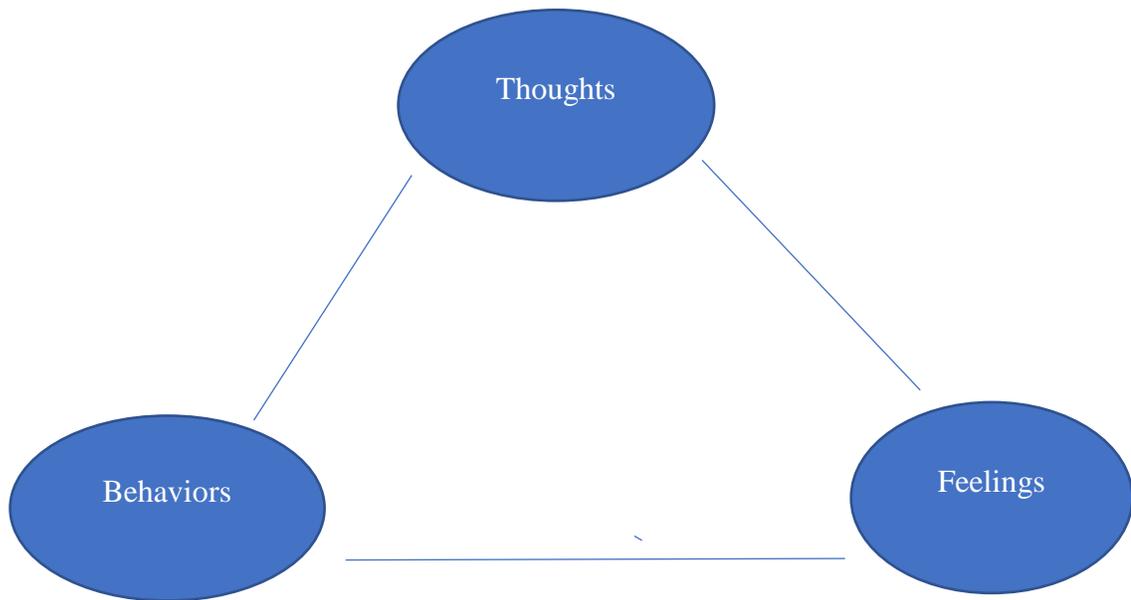
Session 2: The Cognitive Model and the Cognitive Triad

Review: “ So last session we learned about Autism and discussed the 5 things you wished your teachers and peers knew about Autism”. “How did the discussion with your parents go?” “What are five things you wish your parents knew about Autism?” How many times did you discuss this with your parents? (This leads into a review of the weekly practice sheet).

Today we are going to talk about the Cognitive Model and the Cognitive Triangle (Triad). The cognitive triangle represents our thoughts, behaviors, and feelings (emotions) for any event. It is really thinking, feeling and behaving! For example: here’s an event; your classmate whom you have known since elementary school doesn’t say hello to you in the hallway after first period. Your routine is you say hello in the hallway after first period, everyday. One automatic thought is, “My friend doesn’t like me anymore”. Another automatic thought is, “My friend has new friends and I don’t fit in” or “My friend was probably busy and just didn’t see me, I can talk to him/her later.”

How do we react or respond to our automatic thoughts? One option is, “Being sad, isolated, getting mad or not speaking to your friend for a long period of time”. Another option is, “Trying to reach out to your friend to find out what is going on and/or making plans to socialize at other times during the school day”. When an event happens, we process it through our senses and this triggers a lot of automatic thoughts, images, and beliefs. These thoughts and beliefs trigger an emotional response, which causes us to behave in a way that is consistent or supports our thoughts and feelings.

We are going to work on the cognitive triangle and the map of the cognitive model; pick an event and write down your automatic or initial thoughts about the event, which can be positive or negative. As a group, we will talk about reactions to and behaviors because of our automatic thoughts. We will practice using the cognitive triangle for homework.



Appendix D

Session 3: Self-Monitoring Behaviors and Social Feedback

Review: Hello All! Did anyone practice using the cognitive model and triangle? How did it go? How many times did you practice? (There is time for questions about the previous lesson and clarifications).

Today we are going to talk about our thinking styles. What kind of thinker are you? Part of the cognitive model is thinking about thinking. A cognitive distortion is a thought that may not be true or accurate. There are 10 common cognitive distortions that contribute to negative emotions. Let's review them and see if we can identify ones that are familiar to you.

Sometimes there are events that stress us. What is stressing you? Can you view your situation with positive eyes? What are some things you can change? What parts of your situation would you most like to change? Do you think this situation can be changed? Using positive thoughts, what possibilities are there that you didn't see before? Let's look at our thoughts which may be distorted and which then trigger emotions and behaviors. For example, Ms. Wood went to her senior prom and saw another student with the same dress, in the same color. A cognitive distortion could have been, "Ms. Wood's prom is ruined!". This is catastrophizing. What would you do? (Ask the peer facilitators to give feedback with alternatives to problem-solving and other parts of the situation that can be changed for a positive outcome). Ms. Wood did get upset for a little bit, but her prom date told her that she looked better in the dress anyway! In the end, she and her prom date had a great laugh, and she enjoyed her prom. What are the benefits of the situation you face? (what is helpful?). Finally, what are some parts of the situation

that are ridiculous or absurd that you can't help but to laugh? (Ask peer helpers to give feedback about situations that can funny and humorous).

Sometimes having autism makes us rigid or flexible in various situations. Most of the time it is hard to manage change. Let's review the definitions of rigid and flexible. Is it good to be rigid in certain situations? Is it good to be flexible in certain situations? Why or why not? (Allow peer facilitators to discuss situations with participants about times they have been rigid or flexible). For homework, you are going to practice using rigid or flexible panels. Think about times you have been rigid and times you have been flexible. Think about and write down events when being rigid has been positive and when being rigid has been negative. Think about and write down events when being flexible has been positive and being flexible has been negative. Write down how you felt in each situation and describe your thoughts and behaviors? Additional materials for this session were obtained from www.autismteachingstrategies.com and www.psychologytools.com.

Appendix E

Session 4: Reducing Anxiety and Using Relaxation Techniques

Review: Everyone, how was it practicing rigid and flexible activities? What did you think? Let's talk about times this week when you were rigid or flexible.

Today, we are going to talk about worries or anxiety. What makes you worried or anxious? How do you cope with or handle your anxiety?

We are going to listen to this recording and complete this activity. Listen to the audio and follow the directions. (Track one from the audio, *Relaxation and Self-Regulations Techniques for Children and Teens: Mastering the Mind-Body Connection* from Mary Karapetian Alvord). What did you think about this activity? How many people felt relaxed, and do you think this would be something to use to help with worries or anxiety, especially at home?

We are going to review these worry cards. Everyone has something or more than one thing that they worry about, the key is how they think about it and what they do. (Review each of the worry cards profiles and discuss each one with the students with peer facilitators providing assistance). Worry cards and materials are from www.autismteachingstrategies.com.

For homework, you are going to complete the fear hierarchy. What things or situations cause you the least amount of fear or worry? Put that at the bottom of the pyramid. The next situation or event that causes you to worry should go on the next step. Your top step should include a situation, event or thing that causes you the greatest fear or makes you the most anxious and worried. Your goal is to also talk about this with

your parents and discuss what strategies you can use to make your top worries go down a step.

Appendix F

Session 5: Cognitive Restructuring: using Thought Records in Social Exchanges

Review: Hello All! How was the practice on your fear hierarchy? What were your thoughts about identifying your smallest fears and worries and your biggest fears and worries? What did you talk about with your parents, about ways to make your biggest fears smaller?

Today we are going to talk about changing our thoughts and using ways to record our thoughts when things happen to us or during events. We are going to draw out our thoughts and to do some role plays.

Many times, we need to re-evaluate our thoughts, which in turn influences or helps to change our feelings and behaviors. When you have a thought about an event, what thought went through your mind and what is the evidence that your thought is true? How much did you believe the thought at the time? What led to the unpleasant thought? What do you feel physically, with your body? We can record the answers to these questions about our thoughts and additional questions about our feelings and our behaviors, using thought records. Thought records can be described as the thought bubbles that are above our head, just like cartoon or comic book characters. It's what you are thinking! We are going to use two frame thought bubble to describe a situation and your thoughts. In the first box, draw a situation that includes a thought over your head. What are you saying to yourself? In the second box, give yourself a different thought. How did the new thought lead to a different feeling or behavior?

Sample Role Plays: Now we are going to do some role plays. After each role play, talk about what was in your "thought bubble". We are also going to talk about how your

thoughts would lead to your feelings or behavior. What would you do differently? How do you know your thoughts are real or true?

Sample Role Play 1: You have accepted an invitation to go out with your best friend to see the new Avengers movie on Saturday afternoon. Now a new friend has invited you to go swimming and you would prefer to go swimming.

Sample Role Play 2: You hid one of your classmate's books in a closet in your math classroom on purpose. Now, your classmate is really upset with you and reports you to the teacher.

Sample Role Play 3: At lunch, you see a group of students sitting, eating, talking and laughing together. One of the students is in your classes and you have known this person since first grade. This person does not invite you to join them and the other students for lunch.

Sample Role Play 4: You have not completed your homework for 4 assignments. Your teacher has requested a meeting with you and your parents. You are also failing this class.

For homework, you can use some of these role plays or a situation you have experienced to complete the three-frame thought bubble. In box 1, draw or write about the situation or event. What is happening? In box 2, draw a picture that includes a thought bubble. What are the automatic thoughts in the situation or event? Are these thoughts true? What unhelpful thoughts are present? And in box 3, draw or write about your reaction, what are you feeling and how do you act? What would you do differently if you had different thoughts?

Appendix G

Session 6: Cognitive Restructuring for Reciprocal Social Interactions and Summary

Review: Hello All, how are we doing? Well before we review, this is our last session! So far, what have you thought about our activities? What did you think about drawing your own thought bubbles? Do you think you are like the cartoon or comic book characters with the bubbles or clouds over your head? Let's talk (with peer facilitators) about the alternative thoughts and the feelings and behaviors for each of the role plays from the last session.

Today we are going to do more cognitive restructuring, which is changing our thoughts and looking at facts and opinion. This is especially important in how we interact with our peers and classmates. What happens when you want to talk to a new classmate? What thoughts come up? What do you do? We are going to look at the map to explore how to handle our social fears and how to change our thoughts (cognitive restructuring for social fears map).

We are going to discuss, complete and review this guide on what is a barrier for interacting with peers. What are the thoughts or feelings that keep us from reaching our goals? What are the thoughts or feelings you have that keep you from reaching your goal of talking to more classmates? What keeps you from joining the chess club? What keeps you from asking the new teacher for help or making small talk with the new boy or girl in class? What keeps you from joining a group of peers in playing a new video game in the larger social group?

For the past six sessions, we have discussed having autism and things you would like your peers, teachers, and parents to know. We talked about how autism is a

neurodevelopmental disorder which impacts how we think about and respond to different social events and situations. Sometimes how we react to situations makes us feel negative emotions and behave in ways that make it difficult to be social. We learned about the cognitive triangle and the cognitive model which is about thinking, feeling and behaving! Let's discuss your experiences in these sessions? Are the activities things that would be helpful to you in the future? What are the activities and sessions that you enjoyed the most? Are these activities you would like to see used in group in the future? We are going to conclude with thanks and gratitude to everyone participating, especially our other peers who are helpers (facilitators).

Appendix H

Weekly Goal (Target Skill)

Up to ____ times this week I will

practice_____

Check a box for each time you practiced the skill:

1.

2.

3.

4.

5.

6.

Describe one of these experiences in more detail:

(For example: Who were you talking to? Who did you practice with? What was the conversation about? How did it go? Do you need more practice?)