

Research Article

A Limited Review of Social Skills Training for Children with ASD

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Abstract

There are no medications to cure Autism Spectrum Disorder (ASD). Behavior therapies and skills training are generally at the root of “treating” the disorder. Due to the social communication challenges characteristic of ASD, one necessary intervention target for children with ASD is improved social skills. Social skills training can occur in multiple settings such as at home, at school, or in a clinical setting. However, many young children with ASD need direct instruction and support for interacting with their peers in their classrooms. Thus, the purpose of this limited review of the research was to examine the effects of social skills training delivered in small group settings to improve social skills of young students with ASD. Four studies were reviewed and the findings suggest that small group social skills training allows students more opportunity for active involvement in the learning. In small groups, it is easier to be sure that all students receive the same intervention. There is less likely a chance that children will be overlooked in the learning. In small group settings there is a better chance of developing rapport between students. Finally, in small group settings there is more opportunity for peer learning. Implications for practice and future research will be discussed. This review examines the effects of social skills training in small groups for children with ASD.

Keywords: ASD; Peer-Based Interventions; Peer Social Skills InterventionsA

Introduction

Although the severity of Autism Spectrum Disorder (ASD) ranges along a spectrum, the disorder is marked by a deficit in social skills and communication skills. Peer interaction is important during early development, but many students with ASD lack opportunities and practice to interact with their peers due to limited communication and social skills [1]. Group based interventions involve training in which more than one person is involved in the training. Groups often take place in school settings and can also involve variations of dynamics. For example, a child with ASD may be placed in a group with typically developing peers, only with other children with ASD, or a group that is a mixture. Research points to positive results from small group interventions for reaching targeted behaviors for children with ASD [2-5]. A previous review by Dekker et al, (2014) [6] evaluated the efficacy of peer-mediated interventions developed to improve social skills of children with ASD. This review evaluated several studies implementing small group interventions for children with ASD. The results indicated the small group interventions are a viable

treatment for building targeted social skills. They provide models of social behaviors by children of the same age without social skills difficulties. Small group interventions also provide opportunities to teach, practice, and reinforce learned skills. Inclusive classroom settings, in which students with disabilities are included in general education classrooms with supports as needed, are becoming increasingly more common. Studies indicate that there are positive effects for preschool children with disabilities in inclusive settings [7]. Effective small group interventions are an important element to the inclusive classroom because they will foster a better sense of community in diverse settings, as diverse groups of students are placed in small group intervention settings. In comparison to this review, Hotton and Coles (2016) [8], reviewed thirteen studies of interventions for adolescents and adults with ASD. Spain and Blainey (2015) [9] reviewed five studies of adults with ASD. All of the studies involved social skills interventions. Similarly, to the findings of this review, they found that social skills training was effective in improving social skills for the study participants.

The purpose of this paper was to conduct a limited review of the research to examine the effects of social skills training for young students with ASD that are delivered in small group settings. This review extends previous literature reviews by examining the

variation in measuring tools and target skills among the research studies. The research question addressed in this review was: What are the effects of social skills programs taught in small groups on improving the social behaviors of children with ASD between the ages of 4 and 13 years old?

Method

The Educational Resources Information Center (ERIC) database was used to find articles suited to this review. The studies needed to include small group training in social skills. Small group for the purpose of this review is a range of four to seven children per intervention group. The studies also needed to include students diagnosed with ASD. The criteria for age was pre-pubescent, up to age 13. The key words searched were: social skills training, ASD, peer-based interventions, and peer social skills interventions and utilizing a parameter of articles from 2007-2017 in order to inspect the most recent studies. Each of the studies targeted social skills training in small group settings. The coding system was designed around the number of total participants, the length of the study, as well as the ratio of children with autism to typically developing

peers in the study. The studies were reviewed by inspecting the study interpretations of behavior of children with ASD in various settings after they received social skills training.

Results

The four studies included in this review ranged in sample size from five children to 137 children. Group sessions ranged in sizes from 4-7 children per small group intervention training. The groups included a mixture of males and females. The studies also included both students with ASD and their typically developing peers. A summary of the included studies is provided in (Table 1). A review of author conclusions suggested that the social skills programs taught in small groups were an effective means of improving social skills for children with ASD. Considerations of methodological quality of the reviewed research are presented in (Table 2), which indicates that the quality of the studies is split between weak and adequate. This range in quality is mainly due to the sample size of the study and or the observer, responder, or rater consistency. A description of each reviewed study is provided in the following section.

Author(s)	Study type	Type of literature	Number of Participants	Participants Age	Population Criteria	Description	Conclusions	Intervention
Cotugno (2009) [2]	pretestposttest design	Journal Article	18	ages 7-11	Children diagnosed with ASD and Children who were typical	efficacy of a social skills group intervention program/ measures used were the Walker-McConnell Scale of Social Competence and the MGH YouthCare Social Competency/ Social Skill Development Scale.	approach can be effective in improving core social deficits in individuals with ASD.	Peer Group

<p>Kasari, Dean, Kretzmann, Shih, Orlich, Whitney, King (2016) [4]</p>	<p>direct observation</p>	<p>JJournal Article</p>	<p>125</p>	<p>ages 9 to 13</p>	<p>Children diagnosed with ASD</p>	<p>1: 86 observations (71 boys and 15 girls) used to determine the prevalence of behaviors in the chosen settings and validity. 2: 39 observations (29 boys, 10 girls; of which 9 boys and 4 girls had been included in the prevalence/ validity</p>	<p>Using SOM is an effective addition to measuring social skills</p>	<p>Group</p>
<p>Radley, O’Handley, Battaglia, Lum, Dadakhodjaeva, Ford, McHugh (2017) [5]</p>	<p>Interventional</p>	<p>JJournal Article</p>	<p>137</p>	<p>ages 7-12</p>	<p>Children with ASD and Children who were typical</p>	<p>compare outcomes from two different social skills interventions /measures used were the Friendship Survey and Friendship Qualities Scale.</p>	<p>social skills group at school can affect peer engagement and peer acceptability</p>	<p>Behavioral: SKILLS vs ENGAGE</p>
<p>Dekker, V., Nauta, M. H., Mulder, E. J., Sytema, S., & de Bildt, A. (2016) [3]</p>	<p>multiple probe study</p>	<p>JJournal Article</p>	<p>5</p>	<p>4.5 years old to 5 years old</p>	<p>3 children with ASD, 1 with SLI, and 1 with mixed receptive expressive language disorder and autism</p>	<p>efficacy of the Superheroes Social Skills program in reaching target behaviors for children. No overlap of All Pairs was utilized to measure the effect of the intervention, and parental reports were also taken.</p>	<p>improvement in the targeted skills after the intervention</p>	<p>Superheroes Social Skills</p>

Table 1: Study Summaries.

Authors	Independent Variable	Dependent Variable	Confounding Variable	Quality Indicators
Cotugno (2009) [2]	social skills group intervention	stress/anxiety, attention, & flexibility/transitions	teacher/parent ratings consistency	Range: $p < .01$ & $p < .05$ inter-consistency reliability parallel-forms reliability Adequate
Kasari, Dean, Kretzmann, Shih, Orlich, Whitney, King (2016) [4]	social skills group intervention	peer engagement, peer acceptability	survey response consistency	p values varied immensely parallel assignment pre, post, and follow-up Weak
Radley, O’Handley, Battaglia, Lum, Dadakhodjaeva, Ford, McHugh (2017) [5]	social skill training	targeted social skills	observer consistency	very small sample size Weak
Dekker, V., Nauta, M. H., Mulder, E. J., Sytema, S., & de Bildt, A. (2016) [3]	SOM	targeted social skills	observer consistency	large sample size, many instances of observation Adequate

Table 2: Study comparison of findings and quality indicators.

Summary of Studies

Radley, O’Handley, Battaglia, Dadakhodjaeva, Ford, and McHugh (2017) evaluated the efficacy of the Superheroes Social Skills program in reaching target behaviors for children with ASD. The study was conducted with three children with ASD and two typically developing peers who have social deficits. The children received social skills training in a small group setting. The training consisted of children with ASD reading social narrative comics, utilizing self-monitoring cards, and watching instructional DVD teaching target social skills. The skills targeted for the intervention included facing the other person, making eye contact, using appropriate voice and volume, using the proper facial expression, demonstrating relaxation through normal breathing, and using even-paced speech. Kasari, Dean, Kretzmann, Shih, Orlich, Whitney, and King (2016) [4] compared outcomes from two different social skills interventions for students with ASD. The parallel intervention randomly assigned 148 children into two different interventions: skills or engagement. The skills

lessons were named: “Being a Social Detective; Greetings and Goodbyes; Body Talk (Nonverbals); Humor; Conversation; Dealing with Teasing; Perspective Taking; Dealing with Emotions; and Friendship Tips. Children were given weekly homework assignments to reinforce the topics discussed in the group sessions” [4]. The engagement intervention involved typically developing (TD) peers and children with ASD at about a 2-3 to 1 ratio, so that there would be plenty of TD peers to model peer engagement and acceptance. Cotugno (2009) [2] studied the efficacy of a social skills group intervention program for 18 children ages 7-11. The intervention program was a 30-week program aimed at a treatment group and control group of 18 and 10 students respectively. The group intervention sizes ranged from 4-5 children. The program consisted of cognitive-developmental framework using group therapy, cognitive-behavioral, and skill instruction techniques to address the social competency needs and concerns of the children with ASD. This study relied upon teacher and parent ratings of the children regarding social competency, social behavior, and school adjustment to measure pre-post changes.

Dekker, Nauta, Mulder, Sytema, and de Bildt's (2016) [3] study included, "two intervention conditions: Social Skills Training (SST) and Social Skills Training with Parent and Teacher Involvement (SST-PTI), and a care-as-usual (CAU) condition without SST" [3]. The study resulted in the establishment of the Social Skills Observation Measure (SOM) as an additional way to measure social skills by observation. Due to limitations of the study, there was no clear way to characterize the observed relationships between the children. The SOM, while being a beneficial observation tool, is limited in helping to draw conclusions that would be based on other factors such as true relationships or friendships or superficial interactions. The primary emphasis on Dekker et al's (2016) [3] study placed on interventions which focus on the following: "developmental leveling (group and skill-based experiences targeted to the overall developmental level of the group); self-management (each individual takes responsibility for self-managing and self-controlling one's own behavior in order to meet group expectations); peer mediation (peer to peer interactions designed to address and resolve group issues and conflicts as they arise); priming (complex tasks are broken into simple steps with preparation and training provided for managing new aspects of a task based upon previously learned skills and strategies); and direct instruction (specific skills are selected, taught, and reinforced within the group setting)" (Dekker et al, 2016, p. 2901).

These targeted skills are similar throughout the studies. Many common group goals include understanding how to react, respond, and interact with one another while engaging in conversation, sharing of interests, and establishing connections. The Kasari et al. study compared social skills interventions in the school setting for elementary-aged children with ASD. The study resulted concluding that there was more consistent support for a skills-based, social skills group consisting of all children with social challenges than a mixed skills group of typical and children with ASD [4]. The studies consisted of two interventions which were mixed typical and ASD vs. all ASD or social difficulties) and intervention approach (didactic SKILLS based vs. activity-based ENGAGE groups. The results were based on observation of the children after the intervention on the playground, also teacher reporting on the children's behavior. Even with the large sample size, the p values for this study varied immensely which makes this study less reliable. The p value seems to vary based on the student-teacher relationship. The better the student-teacher relationship, the student demonstrates more improvement.

Unlike the other studies Radley et al (2017) [5] aimed more at generalization of skills. They state that, "training to promote generalization (i.e., presenting multiple stimulus and response exemplars) is done via video models of skill use, behavioral rehearsal with diverse peers, and social narrative comic books. Lastly, exploitation of current functional contingencies is addressed through the inclusion of peers who may provide natural social

reinforcement and may serve as discriminative stimuli for skill use in generalized settings" (2017, p. 257). Their (2017) study results report that there was an improvement in the targeted skills after the intervention. This study has a very small sample size which makes it a weak argument, but the Superheroes Social Skills efficacy has potential and should be studied on a larger scale. The study took place over five weeks and four targeted social skills were focused on during group training. Dekker, Nauta, Mulder, Sytema, and de Bildt's (2016) [3] study not only measured the behaviors of children who had undergone the social skills training, but they also tested the measuring tool used. Dekker et al determined that the Social Skills Observation Measure (SOM) used for direct observation was a viable and useful tool to use during observation. The observations for this study took place on the playground and in the classroom. The study took place over 30 weeks and targeted social competence and social skills in group.

The limitations of the current review include a limited number of studies. The current review includes only four studies that occurred within the last decade for small group social skills training for children with ASD. Another limitation of this review is the nature of the studies. The studies involved small groups which result in a limited sample size which inherently results in the typical limitations of small sample sizes. Another limitation of this review is the inclusion of only group interventions and the omission of one on one interventions. The purpose of limiting this review was to inspect the latest studies on the topic.

Discussion

This is a limited review, as it does not include all studies performed regarding social skills training in small group settings for children with ASD. Upon conclusion of this limited review, I have determined that the effects of social skills programs taught in small groups on improving the social behaviors of children with ASD between the ages of 4 and 13 years old to have a positive impact on the social skills of the participants. Traditionally, small group learning is a desirable option. Small group interventions and learning, by design, allow students more opportunity for active involvement in the learning. In small groups, it is easier to be sure that all students receive the same intervention. There is also less likely a chance that children will be overlooked in the learning. In small group settings there is a better chance of developing rapport between students. Also in small group settings there is more opportunity for peer learning.

The quality indicators utilized for the studies included p values and the consideration of sample size. The p value for the Catugno study reflected consistency across the statistics, and fairly good reliability. Catugno's longitudinal study occurred over two years and involved the most participants. This study provides valuable data for interventions implemented over time and would

be a good study to now replicate in larger groups to continue to test the efficacy of the intervention. Cotugno’s (2009) [2] results indicate the intervention program was effective in improving social deficits in children with ASD. The program lasted thirty weeks and this longevity lends to its reliability and generates adequate results. Measures were taken to be consistent in the long process. Kasari et al (2016) [4] indicate that social skills group at school can positively affect peer engagement and peer acceptability beyond the social skills group. Teacher engagement further affected student engagement. The p value for the Kasari et al study reflected immense variation. Although the p values were weak, the study included a parallel assignment, as well as pre, post, and follow-up surveys, which bolsters the reliability of the study.

The very small sample size and concern over observer consistency causes concern for a weak study by Radley et al. Finally, even though there is concern over observer consistency, the large sample size and the frequent observations make Dekker et al’s study adequate. All the studies included typically developing peers along with children with ASD. The limitations of this review are the inconsistencies that occur across the studies reviewed including age range bands, exact measuring techniques, and subjectivity of the measured behavior. In addition, the studies also used different measures to determine the efficacy of the small group social skills training for various but similar target skills. Cotugno focused on stress and anxiety, joint attention, and flexibility and transitions and utilized the Walker-McConnell Scale (WMS) and the MGH YouthCare Social Competence Development Scale (2009). Kasari et al focused on groups and didactic skills versus activity based functions and utilized the Friendship Survey and the Social Skills Improvement System (SSIS) for measuring outcomes (2016). Radley et al focused on self-control and self-monitoring and utilized the Autism Social Skills Profile (ASSP) and The Parenting Stress Index: Short Form (PSI/SF) (2017). Finally, Dekker et al measured a wide range of target behaviors utilizing a newly developed measuring system called Skills Observation Measure (SOM) (2014). Radley et al report that there was an improvement in the targeted skills after the intervention. Although limited, the literature indicates that social skills groups including individuals with ASD and peers with shared social deficits may be useful in promoting acquisition and generalization of target social skills. (Tables 3a,3b) includes a table of limitations for each study. Although the Kasari et al study is a large sample size, there are some worrisome limitations such as the attrition rate and classroom events that were unforeseeable. Equally problematic is a small sample size that does not properly represent a population. More typical limitations include variation in atmosphere and strictness of playground and classroom settings.

Implications for practice of these interventions waver, but the evidence, weak or adequate, points toward social skills

training taught in small groups is an effective means of improving social skills in children with ASD. Based on the studies reviewed, the majority of these interventions may be used in practice in classrooms. Although relying on teacher/parent ratings present a bias, the studies that relied on blind or trained observations may still pose some bias. In the case of parent/teachers surveys, predispositions about the children may exist. In terms of blind or trained observations, perhaps information that is crucial to the results is missed due to lack of intimacy. In line with previous reviews, the small group interventions are effective means of helping to establish social skills in children who has ASD [2-5].

Authors	Study Limitations
Cotugno (2009) [2]	a small sample size, limited prior research on the social competencies and social cognitive process which influence and determine social skill development; the ongoing need for more precise assessment and measurement tools for the ASD population (e.g., the WMS reported adequate validity with typical school-based populations, but no data on individuals with ASD); the lack of a true no treatment control group of children diagnosed with ASD; and the lack of randomization across all groups.
Kasari, Dean, Kretzmann, Shih, Orlich, Whitney, King (2016) [4]	Close to 10% of the sample dropped from the study during the treatment phase due to unforeseeable circumstances uncontrollable events such as teachers changing classrooms in the middle of the school year, children moving away, and children missing too many intervention sessions significant attrition by follow-up where only 50% of the children remained
Radley, O’Handley, Battaglia, Lum, Dadakhodjaeva, Ford, McHugh (2017) [5]	No long-term follow-up data were collected, the current study did not attempt to conduct a component analysis of the program, it is not possible to determine which components of the program were most closely associated with improvements in accuracy of target social skills all participants received training of target skills in the same order & it is arguable that training order may affect the skill acquisition
Dekker, V., Nauta, M. H., Mulder, E. J., Sytema, S., & de Bildt, A. (2016)[3]	Absence of a blinded primary outcome measure, The timeframe of 15 min aimed for was not feasible for all children, due to the fact that the observation needed to fit in with the regular schedule, the degree of freedom during classroom observations was not fully comparable over all schools.

Table 3a: Comparison of Limitations.

Authors	Technique	Length of Study	Total Children	Group Size
Cotugno (2009) [2]	Peer engagement and acceptance through shared interests	2 years	150	4, 1:2 or 3
Kasari, Dean, Kretzmann, Shih, Orlich, Whitney, King (2016) [4]	Peer-based group therapy, cognitive behavior therapy, and skill instruction	30 weeks	28	4 and 5
Radley, O’Handley, Battaglia, Lum, Dadakhodjaeva, Ford, McHugh (2017) [5]	social narrative comics, self-monitoring cards, and instructional DVD teaching target social skills	8 weeks	7	4:3
Dekker, V., Nauta, M. H., Mulder, E. J., Sytema, S., & de Bildt, A. (2016) [3]	observation post-skills training	39 15 minutes observations	86	4:6

Table 3b: Study Details.

Recommendations for future research include utilizing a larger sample size for training and observation. Perhaps a study that compares two separate groups implementing the same interventions but one group significantly larger than the other in order to weigh the efficacy of the smaller group versus the larger group. It would also be recommended to vary the culture and location of the studies. Future studies may also correlate to measuring target skills less broadly and more specifically, such as utilizing different interventions but utilizing the same measurement tools. See (Table 4), the target skills as well as the measurement tools vary to an extent that perhaps they are not correlational.

Authors	Technique	Length of Study	Total Children	Group Size	Measurement	Areas Addressed
Cotugno (2009) [2]	Peer engagement and acceptance through shared interests	2 years	150	4, 1:2 or 3	WMS; MGH YouthCare Social Competence Development Scale	stress & anxiety, joint attention, flexibility/transitions
Kasari, Dean, Kretzmann, Shih, Orlich, Whitney, King (2016) [4]	Peer-based group therapy, cognitive behavior therapy, and skill instruction	30 weeks	28	4 and 5	The Friendship Survey; SSIS	didactic skills vs activity based
Radley, O’Handley, Battaglia, Lum, Dadakhodjaeva, Ford, McHugh (2017) [5]	social narrative comics, self-monitoring cards, and instructional DVD teaching target social skills	8 weeks	7	4:3	ASSP; PSI	self-control and self-monitoring
Dekker, V., Nauta, M. H., Mulder, E.J., Sytema, S., & deBildt, A. (2016) [3]	observation post-skills training in prior study	39 15 minutes observations	86	4:6	SOM	multiple targeted skills

Table 4: Tools of Measurement and Target Areas Addressed.

Conclusions

As a group, the studies contribute to developing evidence based practice in special education because they encompass many different settings and observations of varying aspects of social skills for children with ASD. Each of these studies reports some level of success with small group intervention for social skills training for children with ASD. These studies account for inspection of diverse settings and the possibility of making determinations of interventions based on setting and desired behaviors. The final implications of this review also emphasize the use of small group interventions and learning for children with ASD. Although generalization of these skills has not been fully tested, the data points to small group as effective intervention. These findings seem to reach beyond pre-pubescent children as indicated by reviews performed by Hotton and Coles (2016) [8] and Spain and Blainey (2015) [9] who reviewed studies of adults with ASD. All of the studies involved social skills interventions. Similarly, to the findings of this review, they found that social skills training was effective in improving social skills for the study participants.

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