

Critical Review:

Getting by with a little help from friends: The effects of group therapy on teaching social skills to adolescents with Autism Spectrum Disorder (ASD)*

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This critical review examines the efficacy of a group based therapy approach for teaching social skills to adolescents with Autism Spectrum Disorder (ASD). Seven articles were included in this review. Study designs included: four single group pre-post-test designs, one non-randomized control trial study, one randomized control trial (RCT) study, and one single subject multiple-baseline design study. Overall, the results of this review provide suggestive evidence that a group therapy approach is an effective intervention method for teaching social skills to adolescents with ASD. Recommendations for clinical practice and future research are discussed.

Introduction

In the world today, the number of individuals diagnosed with Autism Spectrum Disorder (ASD) continues to rise. According to the Centers for Disease Control and Prevention (2014), about 1 in every 68 children are identified with ASD. Researchers have asserted a need for more evidence-based practice methods to meet the needs of this population (Schreiber, 2011). According to Weiss and Harris (2001), social dysfunction was identified as one of the most significant features of ASD and improving social functioning has been considered one of the most important intervention goals when working with individuals with ASD. For this reason, having a large amount of evidence-based intervention techniques available to improve the social functioning of those with ASD is beneficial to speech-language pathologists and other professionals working with individuals with ASD.

There is a significant amount of research available on the efficacy of a group based therapy approach in teaching social skills to adolescents with ASD. According to Barry, Klinger, Lee, Palardy, Gilmore, and Bodin (2003), the naturalistic setting of a social skills group with peers has the ability to promote age-appropriate interaction outside the group setting. The use of a group therapy approach allows for speech pathologists, who often have heavy caseloads, to make efficient use of their limited time in order to see several clients at once. Additionally, a group therapy approach allows for the clients to learn not only from their speech pathologist, but also from one another (Laugeson, Frankel, Gantman, Dillon, & Mogil, 2012). Utilizing a group therapy approach to improve social functioning would provide an opportunity for individuals with ASD to practice their newly learned

social skills with their peers in a semi-structured environment with assistance (White, Koenig, & Scahill, 2010).

Many studies explore the use of a group therapy approach to teach social skills to children with ASD, however, few examine the use of this approach with an adolescent population. Adolescence is an important developmental period where there is a close interaction between cognitive growth and social abilities. According to Larson and McKinley (2007), adolescence is a time where one attains the ability to think at an abstract level, establishes personal identity, and has accelerated cognitive growth and personality formation. Therefore, it is important to examine and identify evidence-based interventions available specifically for adolescents (ages 10 to 19 years). The following review will appraise the current research pertaining to the use of a group therapy approach in teaching social skills to adolescents with ASD.

Objectives

The primary objective of this paper is to critically evaluate the existing literature regarding the effectiveness of group based therapy programs in teaching social skills to adolescents with ASD. The secondary objective is to provide speech-language pathologists, who may be interested in group based intervention to teach social skills, with evidence based recommendations regarding its' implementation.

Methods

Search Strategy

**This paper was created as a required assignment for the CSD9639 Evidence Based Practice for Clinicians course at Western. While it has been evaluated by course instructors for elements of accuracy and style, it has not undergone formal peer-review.*

The following computerized databases were searched to obtain peer reviewed journal articles: PubMed, PsycINFO, ERIC, JSTOR, and Google Scholar. Keywords included: [((ASD*) OR (AUT*)) AND (“social skills”) AND (“group therapy”) AND (“adolescent”)].

Selection Criteria

The studies selected for inclusion in this critical review were required to focus on enhancing social skills in a group format as the primary means of treatment for adolescents, specifically between 10 and 19 years of age, with ASD. Papers published prior to the year 2000, those that were not solely research studies, and those that did not directly address a social skills program were excluded from this review. There were no limitations regarding research design or outcome measures.

Data Collection

Results of the literature search yielded seven articles that are consistent with the selection criteria. Articles consisted of four single group pre-post-test designs, one non-randomized control trial study, one randomized control trial study, and one single subject multiple-baseline design study.

Results

Single Group Pre- Post-Test Designs

Barnhill, Tapscott Cook, Tebbenkamp, and Smith Myles (2002) investigated the effect of an adaptation of “Teaching your Child the Language of Social Success” on non-verbal communication skills in 8 adolescents (12-17 years old, 7 males, 1 female) with either Asperger Syndrome or Pervasive Developmental Disorder- Not Otherwise Specified (PDD-NOS). In this program, three trainers targeted skills such as understanding tone of voice, vocal inflection, and identifying and responding to facial expressions. Following each session the adolescents participated in a recreational activity in the community for 2-3 hours. Appropriate Wilcoxon signed-rank tests on the pre- and post-treatment performance on the Diagnostic Analysis of Nonverbal Accuracy 2 (DANVA2), revealed that most participants improved their ability to read nonverbal communication of others, and some participants developed and maintained social friendships. Given the nature of this design, this is an appropriate statistical analysis.

Results of this study should be evaluated with caution. The single group pre-post-test design is limiting because it does not provide a repeated baseline or control group. This means that any improvements observed cannot be confidently attributed to the intervention alone, but may be due to other unknown factors (e.g., age-related

maturation). The generalizability of the findings is limited due to: the small sample size (n=8), the unequal gender distribution in the sample, and the use of only one environment in the intervention. Furthermore, the authors did not utilize inclusion criteria assessments to confirm the participants’ diagnoses and there was limited use of outcome measures in this study, decreasing the validity of the study’s findings. Overall, this study provides equivocal evidence regarding the use of a group therapy approach in teaching social skills to adolescents with ASD.

Epp (2008) investigated the effect of the SuperKids program, on improving the social skills of 44 school age children (11-18 years old, 38 males, 6 females) with ASD. In this program, each group was led by a therapist and students met once a week after school for one hour. The program targeted the students’ social skills and problem behaviours. Appropriate paired samples t-tests on the pre- and post-treatment performance on the Social Skills Rating System (SSRS) questionnaire, revealed improvements in the students’ social behaviours and decreases in several of their problem behaviours (i.e., internalizing behaviours, hyperactivity, and problem behavior scores). Given the nature of this design, this is an appropriate statistical analysis.

Results of this study should be evaluated with caution. The authors reported that some of the students in the SuperKids program may not have received an official diagnosis. This decreases the generalizability of the study’s findings. The single group pre-post-test design is limiting because it does not provide a repeated baseline or control group. This means that any improvements observed cannot be confidently attributed to the treatment, but may be due to other unknown factors (e.g., age-related maturation). The only outcome measure used by this study was the SSRS and not all questionnaires were completed and returned by the parents and teachers, decreasing the validity of the results. Overall, this study provides equivocal evidence supporting the effectiveness of group based therapy to improve the social skills of adolescents with ASD.

Stichter et al. (2010) examined the effect of the group based Social Competence Intervention (SCI) in 27 male adolescents (11-14 years old) with high-functioning autism (HFA) or Asperger Syndrome (AS). The ten week SCI targeted three related social cognition processes (i.e., emotion recognition, theory of mind, and executive functioning) in five curriculum units utilizing cognitive-behavioural intervention principles and scaffolding. A portion of the participants’ parents were involved in a concurrent parent education program. The students’ social abilities, theory of mind, emotion recognition, and executive functioning were measured pre- and post-

treatment using a variety of assessments. Appropriate paired samples t-tests on the pre- and post-intervention performance measures revealed that the SCI was effective in increasing the students' social competence, specifically in executive functioning and emotion recognition via facial expression. Given the nature of this design, this is an appropriate statistical analysis.

The generalization of the findings from the Stichter et al. (2010) study should be made carefully since the sample involved all male students and did not provide a repeated baseline or control group. This means that any improvements observed cannot be confidently attributed to the treatment, but may be due to other unknown factors (e.g., age-related maturation). Additionally, only 17 of the 27 families participated in the concurrent parent education program, which decreases the validity and reliability of the findings. Parents reported on a portion of the outcome measures increasing the biases that may be present due to the parents' knowledge of their child's SCI participation. Furthermore, in the early units of the SCI not all outcome assessments were given due to the curriculum and methods of assessment evolving as the intervention was progressing. Therefore, some of the early participants were missing data resulting in small sample sizes for the analyses of some outcome measures. Given these limitations, this study provides equivocal evidence supporting the effectiveness of group based therapy in teaching social skills to adolescents with ASD.

White, Koenig, and Scahill (2010) investigated the effect of a group based outpatient social skills training program, adapted from the Social Development Program curriculum, on improving social functioning in 15 adolescents (mean age of 12 years old, 14 males, 1 female) with either ASD, high-functioning ASD, or PDD-NOS. The 16 week intervention involved four groups each consisting of two group leaders, four participants, and one typically developing peer tutor. Baseline data on the social functioning of the group participants was obtained pre- and post-intervention, as well as, 3 months following the end of the intervention using a variety of outcome measures.

Statistical analyses of the data were completed using paired t-tests and reliable change indices (RCI). Given the nature of this design, these are an appropriate statistical analyses. Results of the analyses indicated that 9 of the 15 participants' demonstrated improvements in their social skills, but all participants failed to generalize their learned social skills to school and home environments. Based on the teachers' reports, there were no significant changes with treatment from baseline to the end of treatment.

White et al. (2010) identified several limitations in their study. The sample size was small (n=15) and was comprised of all males, which limits the generalizability of the results. Also, participant assignment to one of the four intervention groups was not explained clearly in the study decreasing the validity of the findings. The study did not utilize a control group decreasing the internal validity of the results. Therefore, improvements observed cannot be confidently attributed to solely the intervention, but may be due to other extraneous variables (e.g., natural maturation of the participants). Additionally, the parents of the participants were invested in the potential benefit the treatment may have for their children, therefore, the outcome measures completed by the parents may have positive reporting biases. These biases limit the validity of the findings. Lastly, the authors of this study failed to explain the exact ways the social skills program was adapted from the Social Development Program curriculum limiting the replicability of this study's intervention program. Overall, this study provides suggestive evidence against the effectiveness of group based therapy in teaching social skills to adolescents with ASD.

Non-Randomized Control Trial Study Design

Laugeson, Frankel, Gantman, Dillon, and Mogil (2012) examined the efficacy and durability of the PEERS Program in 28 adolescents (12-17 years old, 23 males, 5 females) with ASD. The 14 week parent assisted study utilized a treatment group and a delayed treatment control group. Maintenance of treatment gains were assessed, only for the treatment group, after a 14 week follow-up period. A variety of questionnaires and rating scales were administered pre- and post-treatment to both the participants' parents and classroom teachers. Statistical analyses of the data were completed using a MANOVA and immediate outcome measures were converted to difference scores (DS). The outcome variables at the 14 week follow-up assessment were evaluated using t-tests. Given the non-randomized control trial study design, these statistical analyses were appropriate. Results of proper analyses revealed improvement in the adolescents' social skills knowledge, social responsiveness, and overall social skills in a variety of areas, while decreasing autistic mannerisms and increasing the amount of peer interactions. Greater improvements were noted for the treatment group, as compared to the delayed treatment control group. Additionally, treatment gains were maintained at the 14 week follow-up assessment.

There were several limitations present in Laugeson et al.'s (2012) study. The authors identified that due to financial constraints a comprehensive diagnostic evaluation to verify the diagnoses of the participants was

not possible, therefore, this compromises the validity of the participants' diagnoses. Additionally, the parents of the participants played an active role in the intervention and parent rating scales were used as primary outcome measures, therefore, biases may be present in the data. It is also important to note that the teacher reports of the participants' social functioning generated a poor response rate, thereby, limiting generalizability of the findings given the small sample size.

Despite these limitations, the study demonstrated several strengths including: blind evaluation by teachers when completing the questionnaires eliminating potential biases, utilizing a parent-assisted intervention helped to promote continued generalization of the adolescent's newly learned skills, and utilizing a control group and a variety of reliable outcome measures enhanced the validity and reliability of the results. Additionally, unlike several previous studies, this study utilized a follow-up assessment to ensure treatment gains were maintained. Overall, this study provides a suggestive level of evidence regarding the use of a group therapy approach in teaching social skills to adolescents with ASD.

Randomized Control Trial Study Design

Lerner and Mikami (2012) compared and examined the differences in observed social behaviours, child-reported peer relations, and intervention staff-reported social skills over time of both the Skillstreaming and the Sociodramatic Affective Relational Intervention (SDARI) social skills programs. The participants of the study were 13 male students (10-11 years old) with high-functioning ASD. The participants were randomly assigned to either the Skillstreaming or SDARI intervention conditions and their parents were blinded as to their child's treatment assignment. Three intervention staff members led each group in the four week condensed version of each intervention. The participants' social functioning was assessed by parents and intervention staff completing standardized measures pre- and post-treatment. Parents also completed a post-treatment questionnaire. Observational coders were used to assess the participants' prosocial behaviours in each session and the intervention staff members completed two self-report fidelity measures.

Statistical analyses of the data were completed using the following: chi-square tests, independent t-tests, repeated-measures ANOVAs, and a post hoc analysis. Given the nature of this design, these are appropriate statistical analyses. Results indicated that both intervention groups demonstrated an increase in the adolescents' reciprocated friendship nominations and in staff-reported social skills. The parents reported no change in their adolescents'

social functioning at home, therefore, the social skills did not appear to generalize.

Lerner and Mikami (2012) identified several limitations in their study. The sample size was small (n=13) and was comprised of all males, which limits the generalizability of the results. The study did not utilize a passive control group, therefore, the improvements observed cannot be solely attributed to the intervention itself, but may be due to other unknown factors (e.g., time spent in a group with other adolescents with ASD). Additionally, the intervention periods were condensed compared to their typical length decreasing the validity and reliability of the findings. Lastly, there was no follow-up assessment used to identify if treatment gains were maintained post-treatment. Despite these limitations, this study demonstrates several strengths. Lerner and Mikami (2012) randomized the participants to each condition and the parents were blinded regarding their child's assignment. The study also utilized multiple outcome measures completed by various informants (i.e., observers, parents, and teachers) that were unaware of each participants' treatment assignment, thereby increasing the validity of the findings. Lastly, this study was only the second of its kind to compare two social skills intervention programs for adolescents with ASD increasing the clinical relevance of the study's findings. Overall, this study provides suggestive evidence supporting the effectiveness of group based therapy in teaching social skills to adolescents with ASD.

Single Subject Multiple-Baseline Design

Webb, Miller, Pierce, Strawser, and Jones (2004) examined the effect of the SCORE Skills Strategy program on teaching five critical social skills in a group format to 10 male adolescents (12-17 years old) with high-functioning ASD. The 10 week SCORE Skills Strategy Program utilized role play situations designed for each of the five social skills and an assortment of games. The intervention used probe testing which was videotaped and research assistants scored the role play probe testing. Pre- and post-intervention assessments were administered and each participant completed a final videotaped role play assessment.

Statistical analyses of the data were completed using inter-rater reliability for all of the measures and t-tests to compare the participants' mean scores on the written knowledge of the group skills pre- and post-intervention. Given the single subject multiple-baseline study design, statistical analyses of this nature were appropriate. Results indicated that all of the participants made significant gains in their performance of the five social skills after the intervention. The participants were able to generalize the use of their newly learned skills to novel

situations, as evidenced in role play situations. The parents, however, were unable to notice the generalization of their adolescent's new social skills in other environments.

Webb et al. (2004) identified several limitations that caution the generalization of the study's findings. The sample size was small (n=10) and consisted of all male students from one regional area limiting the generalization of the findings. The study did not utilize a control group, which means that any improvements observed cannot be confidently attributed solely to the treatment, but may be due to other unknown factors (e.g., age-related maturation). Lastly, the long-term effects of the program were not measured in this study, therefore, the maintenance of treatment skills in unknown for the SCORE Skills Strategy program. Overall, this study provides equivocal evidence supporting the effectiveness of group based therapy to improve the social skills of adolescents with ASD.

Discussion

This review examined studies related to the use of group based therapy in improving the social skills of adolescents with ASD. All of the studies demonstrated that participants made improvements, to varying degrees, in their social skills abilities following group based therapy, however, some of the studies revealed more suggestive evidence than others. The use of blinding, fidelity measures, stable baselines, use of a variety of outcome measures, and follow-up measures lead to suggestive evidence for both the Lerner and Mikami (2012) and White et al. (2010) studies and highly suggestive evidence for the Laugeson et al. (2012) study, since they utilized a control group. While the participants did demonstrate improvements in their social skills following treatment, the Barnhill et al. (2002), Epp (2008), Stichter et al. (2010), and Webb et al. (2004) studies all revealed an equivocal level of evidence. This level of evidence was due to lack of control and stable baseline, lack of fidelity measures, limited data utilized in analyses due to poor response rate, biases present due to parents involvement in the study and completion of outcome measures, and lack of reliability and consistency in the standardization of the intervention.

It is important to note that the generalization of the results from the present studies should be cautioned due the studies' small sample sizes and the unequal gender distribution in the samples. It was likely difficult to find enough female participants that met the diagnostic criteria for ASD in the population, since ASD is 5 times more common among boys than girls (Centers for Disease Control and Prevention, 2014). Therefore, the findings from the studies are somewhat limited because

they cannot be generalized to females with ASD. Future studies should try to include a more equal gender distribution in their samples (i.e., 5 males to 1 female ratio). Additionally, the majority of the studies did not utilize sufficient inclusion criteria assessments to confirm the participants' diagnoses of ASD, as a result, the researchers of the studies' relied solely on the parent's confirmation of their child's diagnosis. This may impact the validity of the studies' findings and it is recommended that future studies employ more stringent selection criteria to confirm the participants' diagnoses. Overall, results of the seven studies in this critical review indicate preliminary suggestive evidence of the effectiveness of group based therapy in teaching social skills to adolescents with ASD.

Clinical Implications

The findings from this review allows for current and future clinicians to see the clinical usefulness and relevance of utilizing a group format to enhance social skills. Speech-language pathologists often have heavy caseloads that prevent them from conducting individual therapy with their higher needs clients on a weekly basis. Utilizing a group based approach would allow for more clients to receive therapy on a weekly basis. There are, however, some issues of relevance to the clinical implication of utilizing a group based therapy approach with adolescents in a typical government funded treatment setting. In all of the studies reviewed, the authors utilized condensed versions of the intervention programs, which ranged from 4 weeks to 35 weeks in length. This raises a clinical issue since in the Ontario school board setting only 3% of the students seen for therapy in a typical year are in grades 4 and older and they are generally seen in blocks of only 10 sessions (Deloitte, 2013). Conducting a program to teach social skills may not be feasible with adolescents due to the limited amount of speech services available to the high school population. This poses an issue to the clinical use of the group intervention programs presented in this review. It is important that parents advocate for their teens with ASD to ensure they receive the necessary speech services to enhance their social skills, even if they must seek private clinical services.

In conclusion, employing a group therapy format to enhance social skills in adolescents with ASD is clinically effective. Utilizing the intervention programs presented in the studies in this review, however, may not be feasible. Future research manipulating the frequency and intensity of intervention programs is recommended.

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