



A Preliminary Analysis of the Manualized Version of the Building Social Relationships Program (BSR-M): A Brief Report



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Abstract

Social skill difficulties are often a pervasive and enduring aspect of Autism Spectrum Disorder (ASD) and can have a deleterious impact on numerous life outcomes. Unfortunately, the results of meta-analytical research have demonstrated that social skill interventions often produce poor intervention and generalization effects. This article presents the results of a preliminary study designed to assess the feasibility and the initial efficacy of the manualized version of the Building Social Relationships program (BSR-M) for children on the autism spectrum. Implications for practitioners and suggestions for future research are presented.

Keywords: Children; Social skill; Building social relationships; Autism spectrum; Teaching

The Building Social Relationships Program

The search for effective social skills programming for children and youth on the autism spectrum has proven to be an elusive endeavor for practitioners and researchers alike. Autism Spectrum Disorder (ASD) is characterized by substantial difficulties in social communication skills and interpersonal functioning [1]. These social skill challenges impact both social cognitive processing (e.g., perspective taking, joint attention, cognitive flexibility, restricted interests, and social problem solving) and social skills (e.g., initiating interactions, responding to initiations, and interactional reciprocity) of children on the autism spectrum. Most critically, these social skill difficulties lead to substantial impairment in their ability to build and maintain social relationships with peers and have been linked to several deleterious life outcomes such as social failure and peer rejection, bullying, anxiety, depression, substance abuse, suicidal ideation, delinquency, and other forms of psychopathology [2-4]. There is a clear need for effective social skills programming for children and youth on the autism spectrum, but successfully teaching social skills can be challenging.

Numerous literature reviews and meta-analytical studies have been conducted on social skill intervention studies involving children and adolescents with and without ASD [5-12]. Though

the collective outcomes of these studies have produced wide variability in terms of main intervention effects, these studies have produced more consistent findings in the area of generalization of skills. The meta-analytical reviews have indicated that a persistent weakness in social skills training research is the failure of researchers to consistently measure and demonstrate acceptable generalization effects, and to adequately plan for generalization in their interventions [6,7,9]. In fact, only 15 of the 55 studies reviewed in the Bellini et al meta-analysis of social skill interventions for school-aged children on the autism spectrum, measured generalization effects, and the studies that did measure generalization often produced poor generalization effects. The need for effective social skills programming that improves social skills, and successfully facilitates skill generalization, is particularly salient for children on the autism spectrum as social skill difficulties are an underlying feature of the condition, and generalization of skills can be especially challenging for this population of children.

The Building Social Relationships (BSR) program [13,14] provides a systematic approach for teaching social interaction skills to children and youth on the autism spectrum. The program was based on a conceptual framework that views social interactions as an integration between social cognitive

processing and the execution of social behaviors (i.e., Thinking and Doing). The social cognitive domain involves knowing what to do (declarative knowledge) and how to do it (procedural knowledge). It also involves social problem solving, perspective-taking, self-awareness, observational learning, and attentional processing. Behavioral execution involves the performance (e.g., motor movements) of social skills in social interactions, such as initiating, responding, and maintaining reciprocal interactions. To successfully improve social performance, the BSR program utilizes multiple strategies that address both social cognitive processing and the behavioral execution of skills.

The BSR program incorporates evidence-based strategies and includes best practice features of social skills programming, including explicitly planning for generalization. The program integrates 13 of the evidence-based social skill strategies identified by both the National Professional Development Center for Autism [15] and the National Standards Report published by the National Autism Center [16]: video-modeling, modeling, social narratives, naturalistic interventions, visual supports, peer mediated instruction, parent implemented interventions, self-management, prompting, time-delay prompt fading, structured play groups, cognitive behavioral intervention, positive reinforcement, and social skills groups. The BSR program also addresses another critical component of successful social skills programming, matching strategies with the type of skills deficit [6,9]. The program utilizes strategies that facilitate the acquisition of new skills, and strategies that enhance the performance of existing skills. Finally, the BSR program explicitly plans for the generalization of skills across settings and persons via the use of various well-established generalization strategies, such as training with multiple persons and in multiple settings, ensuring the presence and delivery of natural reinforcers for the performance of social skills, prompt fading, providing multiple exemplars for social rules and concepts, training skills “loosely” by varying the instruction, directives, strategies, and prompts used during skill instruction), and teaching self-monitoring strategies [14]. While the specific procedures and outcomes of the original BSR program have been outlined and summarized elsewhere in the literature [13,14,17,18], the focus of the present study is on the development and implementation of a practitioner-oriented manualized version of the BSR program.

The manualized version of the BSR program (BSR-M) was developed to make implementation of the BSR program more accessible and time efficient for practitioners. Similar to the original BSR program, the BSR-M program targets both social cognition and social behaviors, and the strategies have been selected to target both skill acquisition and performance deficits. The BSR-M program also utilizes methods to facilitate the generalization of skills across settings and persons. Unlike the original BSR program, where individualized and comprehensive session plans are created each week of the program, and modified weekly by the clinician, the session plans are completed for the clinician at the beginning of the 9-week program, and not modified. That is, the strategies and techniques have been “manualized” or

structured for the therapist or instructional team. In the BSR-M program, target skills are determined in advance of the 9-week program and session structure plans lay out every strategy to be delivered and each skill to target.

The purpose of this preliminary study was to evaluate the feasibility and initial efficacy of the manualized version of the BSR program (BSR-M) for children on the autism spectrum. Specifically, the primary purpose was to assess the utility of the intervention strategies, procedures, dosage, structure, and outcome measures used in the BSR-M program, and to determine whether the initial outcomes of the program warrant further testing in a larger study. Ultimately, the goal of this preliminary study was to use this information on feasibility, utility, and initial efficacy to design a future multi-center, and multi-site, randomized control study on the BSR-M program.

Methods

Participants

Fourteen boys on the autism spectrum between the ages of 6-12 participated in the preliminary study of the BSR-M program. The children had been previously diagnosed with ASD as reported by parents at intake. The cognitive functioning of the children in the program ranged from mild cognitive impairment to above average intelligence. The language ability of the participants also varied. Some children had limited expressive language skills while others exhibited age-appropriate expressive language. The preliminary program was implemented over a three-year period and involved seven social skill groups. The seven groups were comprised of 2-3 children on the autism spectrum, and one same-age peer mentor. Children were assigned to groups based upon their age. Informed consent was obtained from parents prior to beginning the program.

Intervention procedures

The BSR-M program was implemented at the Social Skill Research Clinic (SSRC) at Indiana University, Bloomington. The SSRC is a university-based clinic specializing in designing, implementing, and measuring the outcomes of social skill interventions for children on the autism spectrum. Instruction was delivered by school psychology graduate students under the supervision of the clinic director, who is the author of this article. The BSR-M program was implemented once a week for 9 weeks, and each session lasted 45 minutes. Each session was split into two instructional parts (Figure 1), based on the conceptual framework of the BSR program (Part 1: Strategies to address social cognitive processing and Part 2: Strategies to teach social interaction skills). A third section of each session consisted of a five-minute data collection period (referred to as, “Free-Play”) that is used for progress monitoring purposes. Each of the sessions was taught in a group format, and every group contained at least one peer mentor who was similar in age to the children on the autism spectrum who were in the group. The peer mentor was taught how to effectively initiate and respond to their friend on the autism spectrum and was provided with on-going coaching during the

9-week session [14]. This peer mentor was a typically developing child who exhibited average or above average social skills in comparison to the students enrolled in the social skills group. In addition to the group session, the author met with parents of the participating children three times during the 9-week program to go over the intervention objectives and targeted skills, to show them the content and goals of the session structure plans, and to

provide suggestions for strategies the family could use at home to prompt and reinforce the performance of the targeted skills in the natural environment. The parent feedback sessions also allowed the parents to share any concerns or general feedback they might have had on the social skills program, or on their child's social performance in general.

STRUCTURE OF A SESSION IN THE BSR-M PROGRAM (45-MINUTE SESSION)

Part 1 (20 minutes):

Social Cognitive Processing

Social-cognitive tasks and instruction that target at least two of the following areas each session: social problem solving, perspective taking (and pre-perspective taking skills), self-awareness, observational learning, joint attention, divided attention, and declarative knowledge (e.g., social rules, norms).

Part 3 (5 minutes):

Free play data collection

Part 2 (20 minutes):

Social Skills

Behavioral strategies that target one or more of the following target social behaviors each session: joining in play, asking questions, responding to initiations, taking turns/reciprocity, maintaining personal space

Figure 1: Displays the content structure of the BSR-M program.

The lead therapist was given the session structure plans for each week in advance of the sessions. The session structure plans outlined both the targeted skills and strategies that were the focus of each session. The session structure plan targeted at least two featured skills in both Part 1 and Part 2 of the session. The featured skills represented the various component skills that the child needed to learn and perform to be successful in peer interactions. In addition to the featured skills, the session structure plans outlined the specific strategies that were used in the session to address both social cognitive processing and the performance of social behaviors. Though the skills and strategies were identical for all children participating in the BSR-M program, play items and games varied across groups to ensure that they were developmentally appropriate for the children in each group.

All student clinicians received direct training from the author prior to participating in the program. In addition, student clinicians participated in weekly training and supervision sessions with the author prior to each group meeting to go over the prior week's session and to prepare for the current week's session. The author observed and reviewed video recordings of all sessions to ensure intervention fidelity and provided post-session feedback to the clinicians immediately following each session.

Outcome variables and assessment measures

The BSR-M preliminary program utilized both Type I and Type II social skill assessment measures [19] to determine the collective outcomes of the program. The BSR-M program used two measures of social competence (or Type I measures), the Social Skills Improvement System (SSIS) [20] and the Autism Social Skill Profile (ASSP) [21]. The SSIS is a widely used rating scale that provides information on the social functioning of children and adolescents ages 3–18. The ASSP is a social skill assessment measure that provides a comprehensive evaluation of social competence for youth on the autism spectrum. The items on the ASSP cover many of the social behaviors typically exhibited by children on the autism spectrum, including initiation skills, social reciprocity, perspective taking and non-verbal communication skills. The ASSP was designed for use by youth between the ages of 6-17.

The BSR-M preliminary program also utilized Type II measures (i.e., direct observation of social behaviors) to determine the collective outcomes of the preliminary program). The percentage of unprompted positive social engagement with peers was used as the primary outcome variable for the program. Social engagement was defined as sustained and interactive participation in an

activity or play sequence with a peer involving shared actions, toys, objects, and play items. Negative behaviors such as taking an object from another child or pushing another child were not counted as social engagement. Examples of social engagement include pulling another child or being pulled in a wagon, taking turns during a board game, engaging in a conversation, playing jointly with play structures, balls, building blocks, cars, action figures, etc. All instances of unprompted verbal and non-verbal social initiations and responses to peers were coded as social engagement (please contact the author for a more complete description of the behavioral codes used in the BSR-M preliminary study).

Observer training and data collection

The author trained the student clinicians in the behavioral observation techniques (collection and coding) that were used in the preliminary study. In addition, the student data collectors had an opportunity to practice recording social interactions prior to beginning the group sessions. To establish inter-observer agreement (IOA) in training sessions, the student data collectors engaged in practice sessions where they recorded behaviors while watching video recordings of past social skill groups conducted at the SSRC. Training continued in this fashion until the data collectors achieved 90% agreement in their recordings.

The SSIS and ASSP (i.e., rating forms) were administered at the beginning and end of the 9-week BSR-M program. Observations of social skills were conducted each week during group sessions by graduate level school psychology student clinicians under the direct supervision of the author. Week 1 served as a baseline period, and no instruction was delivered. Data were collected during the first and last 5 minutes of session one, and during the first 5 minutes of session two, allowing for 3 baseline data points for each child. Data on social behaviors were then collected at the end of each group session throughout the 9 weeks of the program. Two student clinicians collected social engagement data for each participant. The student clinicians compared their data and disagreements in the results were discussed until a consensus could be reached. In addition, the author also observed all sessions via live and recorded video streaming and “broke” any remaining “ties” during the post-session feedback meeting with the student clinicians. To measure generalization of skills across settings, data on social engagement with peers was collected via observation at the children’s school during recess. School observations were conducted at the beginning and end of the 9-week program (note: the school observations were only conducted for students living within a 20-mile radius of our clinic). School observations were conducted for 10 of the 14 children in the preliminary study. Social engagement was measured by using a partial interval time sampling procedure, with 10-second intervals.

Results

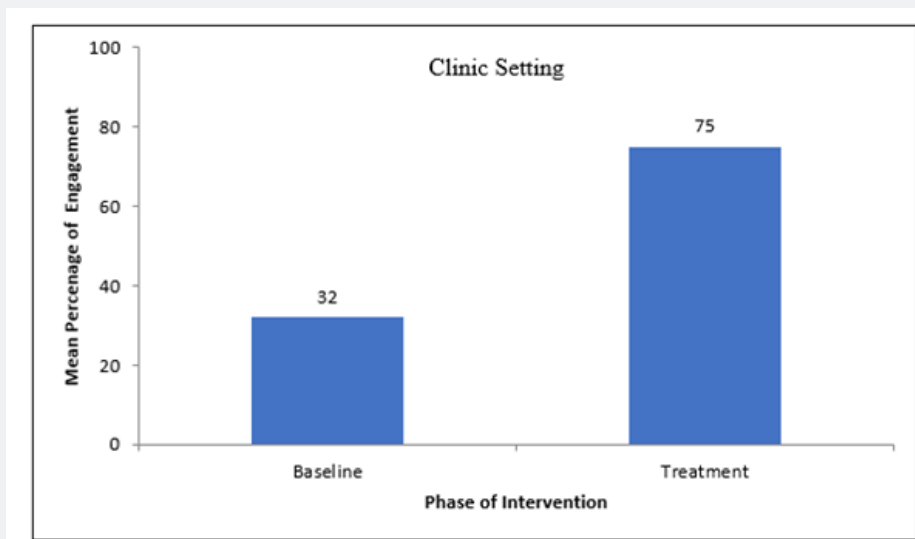


Figure 2: Mean percentage of unprompted social engagement within the clinic for baseline and treatment phases (n = 14).

Mean social engagement with peers in the clinic setting increased substantially during the 9-week BSR-M program for all 14 participants (Figure 2). Mean social engagement increased from 31.7% at baseline (range = 0 - 75, *SD* = 27.6) to 75.1% in the intervention phase (range 22 - 100), *SD* = 23.2). Generalization

data on social engagement at school were collected and analyzed for the 10 children who lived within a 20-mile radius of our clinic. The children’s mean social engagement with peers at school improved substantially after the 9-week BSR-M program (Figure 3). Nine of the 10 participants demonstrated increases in

peer engagement at school. Mean social engagement increased from 19.5% at baseline (range = 0-57, *SD* = 24.8) to 58.8% in the intervention phase (range 2-100), *SD* = 29.2). Effect size was calculated to determine the magnitude of the change from baseline

to treatment in both the clinic and school settings and interpreted using Cohen’s commonly used benchmarks [22]. Large effects were demonstrated in both the clinic ($d = 1.68$, 95% CI [0.81-2.54] and school settings ($d = 1.44$, 95% CI [0.46-2.42, 9]).

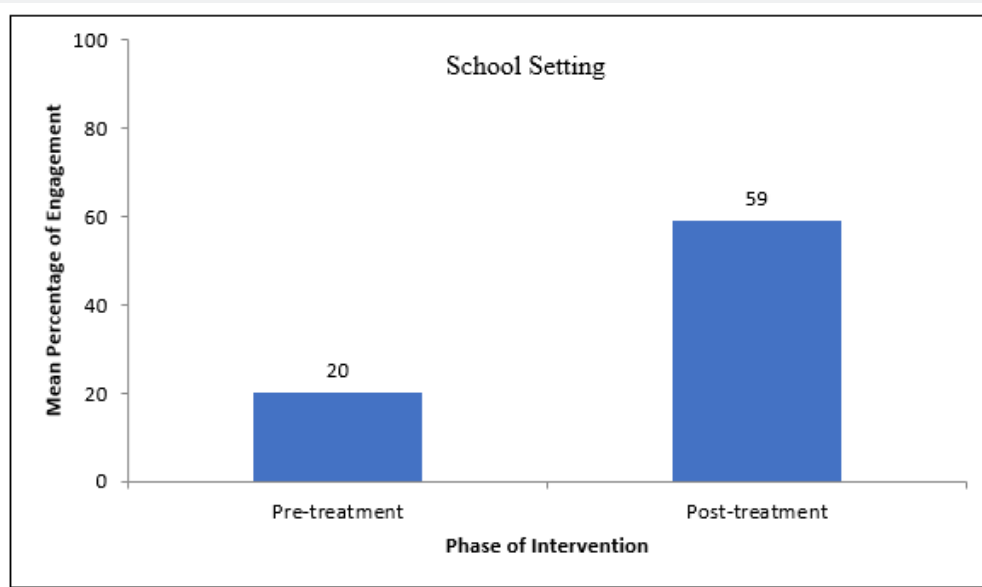


Figure 3: Mean percentage of unprompted social engagement with peers during school observations pre- and post-treatment (n = 10).

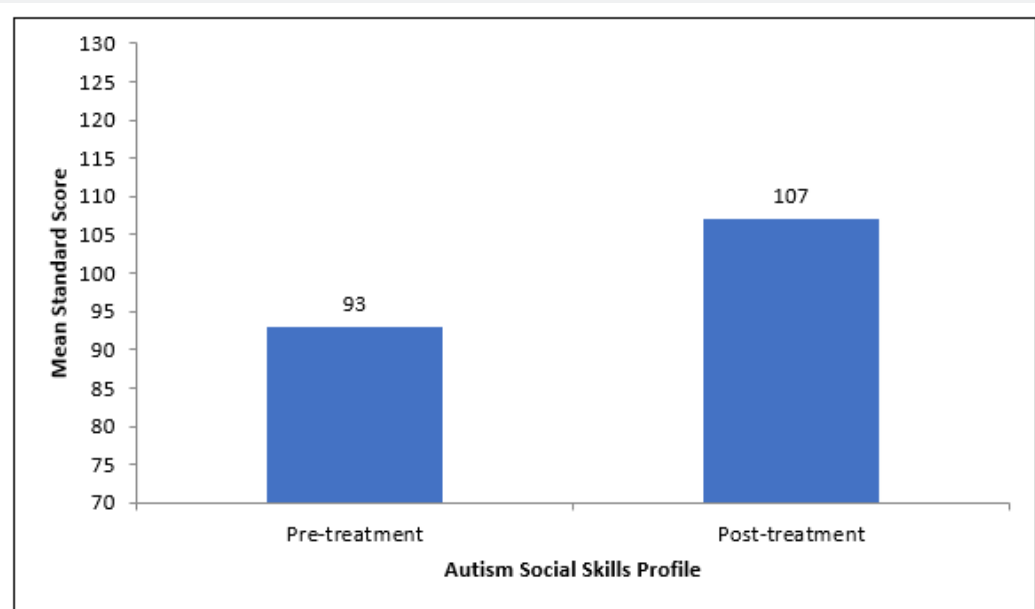


Figure 4: Mean scores for the Autism Social Skills Profile pre- and post-treatment (n = 14).

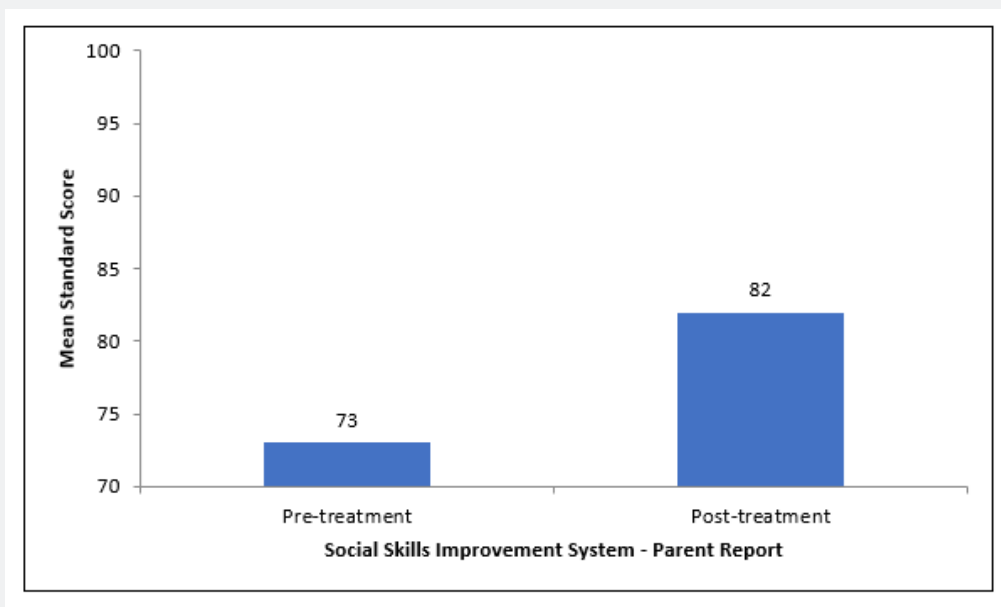


Figure 5: Mean scores for the Social Skills Improvement System – Parent Report pre- and post-treatment (n = 14).

Mean scores on the parent version of the SSIS improved from 73 ($SD = 5.8$) to 81.5 ($SD = 6.9$). Mean scores on the ASSP increased from 92.8 ($SD = 17.9$) to 107.4 ($SD = 16.8$). Increases were observed for all 14 children on the SSIS and for 12 of the 14 children on the ASSP. Effect size was calculated to determine the magnitude of the change from baseline to treatment on both instruments. A large effect was demonstrated on both the SSIS ($d = 1.66$, 95% CI [0.80- 2.52, 95%]) and ASSP ($d = .81$, 95% CI 0.36 - 1.58, 95%).

Discussion and Implications

Social skill difficulties are often a pervasive and enduring aspect of ASD and can have a deleterious impact on numerous life outcomes. Unfortunately, the results of meta-analytical research have demonstrated that social skill interventions often produce poor intervention and generalization effects. The goal of this preliminary study was to assess the feasibility of the intervention strategies, structure, and outcome measures used in the manualized version of the Building Social Relationships program (BSR-M) for children on the autism spectrum and to present the preliminary outcomes of the program. Substantial improvements in social engagement were observed in both the clinic and school setting following the implementation of the BSR-M program. The improvement in the school setting is particularly noteworthy, as successful generalization of skills is often lacking in social skills programming and is of critical importance for children on the autism spectrum. This finding supports the best practice recommendations from researchers that suggest that social skill interventions should explicitly

plan for the generalization of skills across settings and persons [6,7,9]. The preliminary study also provides encouraging data on the utility and feasibility of a manualized therapeutic approach for teaching social skills. A manualized intervention is generally thought to be more accessible and time efficient for practitioners. In the case of the BSR-M program, every minute of every session was pre-determined at the beginning of the 9-week program, and the strategies, targeted skills, and data collection techniques were provided to the therapist in advance of the 9-week program, saving the therapists many hours of preparation and planning.

Though the study produced promising data on the intervention and generalization effects of the BSR-M program, this was a preliminary study, and several limitations should be considered. First, the sample size was quite small, and no randomized control procedures were utilized. As such, the results should be interpreted with caution. Additional research is needed on a larger population of children to replicate the procedures and results of the preliminary study. Second, the preliminary study was conducted in a university clinic setting. As such, the applicability to other settings, such as school or community mental health clinics is still uncertain. Similarly, the SSRC is a research clinic established explicitly to develop, implement, and measure the outcomes of social skill interventions, and clinicians have received extensive training and supervision in the implementation of the BSR program. It is unknown if the results could be replicated by practitioners outside the SSRC. To address many of these limitations, a multi-center, and multi-site, randomized control study is planned across three university-based clinics and three school sites across the United States.

Summary

The results of the preliminary study suggest that the BSR-M program may provide an effective manualized social skills program for youth on the autism spectrum in a clinic setting. The preliminary study highlights the importance of teaching social skills in a systematic manner that explicitly plans for the generalization of skills across settings and persons. Further research is needed to replicate the procedures and results of the present study in other settings, with other practitioners, and with a larger sample of participants.

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