Evidence In-Sight:

THE EFFECTIVENESS OF SOCIAL SKILLS GROUPS FOR CHILDREN WITH AUTISM

Date: November 2011
The following Evidence In-Sight report involved a non-systematic search and summary of the research and grey literature. These findings are intended to inform the requesting organization, in a timely fashion, rather than providing an exhaustive search or systematic review. This report reflects the literature and evidence available at the time of writing. As new evidence emerges, knowledge on evidence-informed practices can evolve. It may be useful to re-examine and update the evidence over time and/or as new findings emerge.

Evidence In-Sight primarily presents research findings, along with consultations with experts where feasible and constructive. Since scientific research represents only one type of evidence, we encourage you to combine these findings with the expertise of practitioners and the experiences of children, youth and families to develop the best evidence-informed practices for your setting.

While this report may describe best practices or models of evidence-informed programs, Evidence In-Sight does not include direct recommendations or endorsement of a particular practice or program.

This report was researched and written to address the following question(s):

- What does the research indicate about the effectiveness of social skills groups for children with autism? Are there particularly well-supported practices or programs?

We prepared the report given the contextual information provided in our first communications (see Overview of inquiry). We are available at any time to discuss potential next steps.

We appreciate your responding to a brief satisfaction survey that the Centre will e-mail to you within two weeks. We would also like to schedule a brief phone call to assess your satisfaction with the information provided in the report. Please let us know when you would be available to schedule a 15-minute phone conversation.

Thank you for contacting Evidence In-Sight. Please do not hesitate to follow up or contact us at evidenceinsight@cheo.on.ca or by phone at 613-737-2297.
1. **Overview of inquiry**

This request originated with a regional health centre that runs a social skills group for children with autism. They would like to ensure that they are using evidence-informed practice when offering this service, and are requesting an overview of the evidence base for treatment groups for children with autism.

2. **Summary of findings**

   - Few studies have demonstrated the effectiveness of social skills group interventions, and in general, reviews of group interventions are mixed.
   - The majority of studies described in the literature, and a persistent problem within the social skills training literature in general, is that research has not consistently demonstrated gains in social skills across settings and maintenance over time.
   - Total improvement of social skill deficits does not occur, and difficulties with social skills persist even for those who receive good treatment.
   - For social skills instruction to be effective, maintenance and generalization must accompany skill acquisition and must reflect the specific needs of each group member.
   - Social skills training may be most effective when integrated into natural settings such as on the playground and at home.

3. **Search strategy**

   - Where we looked for information: EBSCO Host (Medline, PsycInfo, CINAHL, Health Business Elite, Nursing & Allied Health Connection: Comprehensive, Psychology and Behavioral Sciences Collection, Biomedical Reference Collection, Comprehensive), Google Scholar, and The Cochrane Library, The Campbell Library, NREPP, California Evidence-Based Clearinghouse.
   - Search terms used in databases: autism, social skills groups, evidence informed.

4. **Findings**

   Deficits in social skills are a key feature of autism spectrum disorders (White, Keonig, & Scahill, 2007). The failure to develop social skills has been linked with long-term difficulty with adjustment, mental health problems, and delinquency (Asher & Wheeler, 1985; Elder, Caterino, Chao, Shacknai, & Simone, 2006). Social skills training (SST) is a child-specific intervention that involves teaching explicit skills related to conversation through behavioural and social learning techniques (White et al., 2007). SST has been conceptualized as a four-step process that includes (Gresham, 1988):
   1. Promoting skill acquisition
   2. Enhancing skill performance
   3. Removing interfering behaviours
   4. Facilitating generalization

   Promoting skill acquisition can include teaching appropriate social behaviour through modeling, coaching and instruction. Enhancing skill acquisition can include rehearsal, reinforcement, and cooperative learning strategies. Removing interfering behaviours may involve a response-cost system, and differential reinforcement. Generalization can
be promoted by using different training opportunities, and using community-based reinforcements (for a detailed description see Gresham, 1988).

One of the principal critiques of SST is that skills learned are not generalizable to different settings (Plaisted, 2001; Klin & Volkmar, 2000). Social behaviour is contextual, and as such, individuals who receive interventions in an artificial situation will face difficulties with generalization. In order for interactive behaviours to be maintained, training should occur in the environments where generalization is to occur (Drasgow, Halle, Ostrosky, & Habers, 1996). Social behaviour taught in a naturalistic setting, such as the home, school, or community setting using informal intervention provides a relevant setting for learning social skills (Gresham et al., 2001).

4.1 Forms of Social Skills Training

Peer-Mediated Interventions: Peer-mediated interventions have been found to be effective in training school-aged children. Specifically, daily exposure in peer play with trained peers has been found to increase several social behaviours in children with autism including proximity, appropriateness and eye contact (Paul, 2003). Natural contexts in peer-mediated interventions are important to achieve generalization (Shafer, Egel, Neef, 1984).

Visual Supports: Visual supports are often used in social skill interventions for preschool and school-aged individuals. Visual supports can include Social Stories (the use of visual and written materials that teach social skills by telling stories) (Gray & Garand, 1993), scripts, and visual activities. Overall, visual supports have been found to be an effective method for enhancing social understanding and structuring social interactions for preschool and school-aged children with autism (Reichow & Volkmar, 2010).

Video Modeling: Video modeling (an intervention that seeks to tap into the visual learning style of autistic children) is effective for teaching social skills (Reichow & Volkmar, 2010). Video modeling uses videotapes instead of live scenarios to depict targeted behaviours. Watching videotapes enable the child to focus their attention on the behaviour modeled in the tape (McCoy & Hermansen, 2007). Video modeling is often used in conjunction with another intervention, and may not be powerful enough to elicit desired changes in behaviour as a sole intervention.

Naturalistic Techniques: Naturalistic techniques provide structure to parent-child interactions and seek to build scenarios that would generalize to a child’s natural environment. They may be used to teach imitation and/or joint attention behaviours, and have been found to be effective for young children (Ingersoll, Dvotcsak, Whalen, & Sikora, 2005). Parent training is an effective method for increasing social skills of young children, however more research is required to verify its effectiveness with older children (Reichow & Volkmar, 2010).

Group Formats: Group interventions are frequently used in treatment for individuals with higher functioning autism spectrum disorders (Solomon, Goodlin-Jones, & Anders, 2004) and can be combined with any of the above mentioned forms of SST. Groups provide opportunities for interactions with peers in a relatively naturalistic setting (Solomon et al., 2004; White et al., 2006). The format allows children the opportunity to build friendships that could extend beyond the group (Carter, Meckes, Pritchard, Swensen, Wittman, & Velde, 2004). There are advantages and disadvantages to forming mixed groups that include children with and without autism. Intensive skill instruction is possible in a group composed of exclusively of children with autism (Solomon et al., 2004). In addition, an exclusive group creates a safe
Autism Social Skills Groups

environment for peers to interact who share the same experience (Marriage, Gordon, & Brand, 1995). The inclusion of children who do not have the disorder allows for the opportunity to interact in a more naturalistic way (Klin & Volkmar, 2000).

There are inherent challenges that come with studying groups, and as such, there have been few randomized control trials and manualized programs for individuals with autism spectrum disorders (Elder et al., 2006; Solomon et al., 2004; White et al., 2007).

4.2 Evidence-informed Social Skills Training Programs
Reichow & Volkmar (2010) reviewed sixty-six evidence-based social skills training interventions for children and youth with autism. To be included in the review: studies had to feature individuals identified as having an autism spectrum disorder; studies had to evaluate interventions designed to improve social skills, and must have evaluated at least one social outcome; evaluation had to be conducted using true experimental design, quasi-experimental multiple-group comparison, or single subject experimental designs; the study must have been published or accepted for publication in a peer-reviewed journal between 2001 and July 2008, and studies had to receive acceptable or strong ratings in the Evaluative Method for Determining Evidence-Based Practices in Autism (For a full description of the evaluative method, see: Reichow, Volkmar, & Cicchetti, 2008).

Of those who met criteria for the review, the most frequently used interventions for school-aged children were methods based on Applied Behaviour Analysis (ABA) and peer training with visual techniques and video modeling. ABA interventions included in the review were delivered by many agents, including parents, peers, and other adults, and most typically included prompting, reinforcement, imitation, modeling paradigms, and self-monitoring. ABA interventions were used most frequently in support of another intervention type, such as video modeling, visual supports, and peer training. There is much support for the use of interventions using ABA.

The authors of the review concluded that, overall, social skills groups have a positive effect on group members. It should be noted that the majority of social skills groups included in the review were conducted alongside another treatment program, so research examining social skills groups as the sole intervention is lacking. Further, some studies did not show strong effects, some had inconsistent results, and some reported poor maintenance of skills. Of the studies included in the review, the only social skills group that showed generalizability was LEGO® therapy.

Reichow & Volkmar (2010) conclude that while the findings of the social skills groups were generally positive, some studies did not have strong effects, some had inconsistent results, and/or reported poor maintenance of skills. Additionally, many of the studies evaluated social skills groups as one component in a treatment package. Therefore, the effects of social skills groups as a sole intervention remain widely unknown. That said, social skills groups have accumulated sufficient evidence to be classified as evidence-based practice (Reichow, Volkmar, 2010). It should be noted that the reported range that SST can improve social skills varies widely; population characteristics, matching treatments to type of social skill problem, treatment integrity, assessment, and generalization issues are the factors that may contribute to success rates (Reichow, Volkmar, 2010).
A study conducted by Owens and colleagues (2008) compared the effectiveness of LEGO therapy to SULP in a group of children aged 6 to 11 years who had a diagnosis of high functioning autism, autism spectrum disorder, autism or Asperger Syndrome. LEGO therapy and SULP groups met for one hour per week over 18 weeks. A control group was included to ensure results were not a consequence of maturation. Autism-specific social difficulties reduced following LEGO therapy, in contrast to no change in the SULP group or the control group. It should be noted that the magnitude of the change was small. Both groups showed a change in maladaptive behaviour scores for the two intervention groups, and both groups were significantly lower than the control group. When compared to the control group, there was an improvement in socialization and communication for the LEGO and the SULP groups. When observed on the playground, it was found that those in the LEGO therapy group increased the duration of social interactions, while the SULP group did not. The improvement of socialization on the playground suggests generalization. It could be concluded that both LEGO therapy and SULP have the potential to help children with autism improve social behaviour and are better than no intervention. LEGO therapy may be more effective than SULP at reducing autism-specific social difficulties (Owens et al., 2008).

### Lego® Therapy

<table>
<thead>
<tr>
<th>Client Profile</th>
<th>Children aged 5-17 years with social difficulties associated with autism and Asperger syndrome</th>
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<tbody>
<tr>
<td>Overview &amp; Supporting Evidence</td>
<td>LEGO therapy is training aimed at helping children and youth improve their social interaction and communication skills. A number of studies have found that using LEGO as a tool for group interaction and communication with peers increases self-initiated contact and the duration of social interaction in other group settings, such as on the playground or in the cafeteria. A typical project involves building a LEGO set, where one child is assigned the role of the “engineer”, one the “supplier”, and one the “builder”. Group members are required to follow social rules to work as a team to complete the build.</td>
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LEGO therapy has been systematically evaluated in several research studies. LeGoff (2004) found that following 24 weeks of sessions (90 minute group session, one hour individual session per week), significant differences were found in 47 children with autism. Frequency initiating social contact and the duration of social interactions in the school playground significantly increased, showing generalizability. There were no differences for those wait-listed for the program. Results at three-year follow-up indicate that social skills of those who received therapy had significantly improved in comparison to the control group (LeGoff & Sherman, 2006).

| Other Information | LEGO therapy is described in detail in LeGoff’s original study: LeGoff, 2004 Additional information: [https://wiki.inf.ed.ac.uk/twiki/pub/ECHOES/InteractionalFocusReciprocity/Loegoff2006.pdf](https://wiki.inf.ed.ac.uk/twiki/pub/ECHOES/InteractionalFocusReciprocity/Loegoff2006.pdf) Training is available, conducted by The Center for Neurological and Neurodevelopmental Health for $975.00. Additional information can be obtained from knicosia@thecnnh.org. |
### Social use of Language Programme (SULP): Manualized Program

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<th>Client Profile</th>
<th>Children aged 9 - 12 years with learning difficulties; often used to help children with autism</th>
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| Overview & Supporting Evidence | SULP is a social communication teaching approach. The program uses a curriculum and takes a hierarchical learning approach. Teaching is based on stories, group activities and games. Skills covered include eye contact, listening, turn taking, proxemics (social distance between people appropriate for speech), and prosody (rhythm and intonation in speech).  

SULP was recently reviewed in comparison to LEGO therapy. See below for a description (Owens et al., 2008) |
| Cost and Training | Training prices vary based on the needs of the group. The entire package can cost up to 515£ (Can be shipped to Canada) |
| Staff Agency and Characteristics | Administered by teachers/teaching assistants, speech language therapists, psychologists, social workers, youth support workers. |
| Other Information | Email: orders@wendyrinaldi.com  
Website: [http://www.wendyrinaldi.com/wr-sulp-spj.stm](http://www.wendyrinaldi.com/wr-sulp-spj.stm) |

### Social Skills Group Intervention

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<tr>
<th>Client Profile</th>
<th>Children aged four to six with autism</th>
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| Overview & Supporting Evidence | Twenty-five four-to-six year old children with autism participated in one of two social skills group interventions. During the sessions, one group attended a direct teaching group that used a video-modeling format to teach play and social skills, while a second group attended a play activities group that engaged in unstructured play. Groups met for a one-hour session three times per week for five weeks. Through video modeling, the direct teaching group progressed through a series of interactive activities each week, including ball play, joint play (taking turns and finding a play partner), pretend play, and family play stations. Eye contact, smiling, and interactive play were encouraged and verbally praised. Both groups improved in prosocial behaviours.  

The program was systematically evaluated. The results of the study suggest that group interventions are an effective strategy for young children with autism. Children in the direct teaching group were found to have made greater prosocial behaviour gains than children in the play activities group at the conclusion of the program. |
| Other Information | The program is described in the article: Kroeger, Shultz, & Newsom (2007). |
A Manualized Intensive Summer Social Development Program

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<th>Client Profile</th>
<th>Children aged 6-13 with high functioning autism spectrum disorder</th>
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<tr>
<td>Overview &amp; Supporting Evidence</td>
<td>Participants were matched and randomly assigned to one of two performance feedback treatment conditions. The program was administered for six weeks, five days a week for six hours a day. Classrooms and outdoor space on a campus were used. The groups consisted of six children and three staff. Four treatment cycles were conducted daily with each cycle starting with a 20-minute structured social skills group and ending with a 50-minute therapeutic activity to practice the skills taught in the 20-minute group. Curriculum taught during the 20-minute structured group came from a program named Skillstreaming. Skillstreaming is a program that teaches social skills to children using teaching, modeling, role playing, performance feedback, and transfer of learning to teach skills such as ignoring distracting, ending a conversation and giving a compliment. The program was systematically evaluated. At follow-up, parents and staff reported significant social improvements in the children attending the program. Problem behaviours decreased. On the measure of face-emotion recognition, there was no significant change in the children's ability to identify emotions in adult or child faces.</td>
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<tr>
<td>Staff Agency and Characteristics</td>
<td>Staff were composed of graduate and undergraduate students from psychology and education.</td>
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<tr>
<td>Other Information</td>
<td>The program is described in the article: Lopata, Thomeer, Volker, Nida, &amp; Lee (2008). Information on Skillstreaming: Goldstein &amp; McGinnis (2000)</td>
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5. Next steps and other resources

Knowing what works and receiving training on an evidence-informed practice or program is not sufficient to actually achieve the outcomes that previous evaluations indicate are possible. A program that has been shown to improve mental health outcomes for children and youth but that is poorly implemented will not achieve successful outcomes (Fixsen et al, 2005). In order for a program to be evidence-informed, it needs to be applied with fidelity to the design and it needs to be implemented using supportive “drivers” related to staff competency, organizational leadership and organizational capacity. These drivers include assessing and monitoring the outcomes of your practice using evaluation or performance measurement frameworks, which are particularly important when there is insufficient evidence in the literature to guide clinical decisions. Choosing a practice is an initial step toward implementation, but the implementation drivers are essential to ensure that the program reaches appropriate clients, that outcomes are successful and that clinical staff members are successful in their work.
The Ontario Centre of Excellence for Child and Youth Mental Health has a number of resources and services available to support agencies with implementation, evaluation, knowledge mobilization, youth engagement and family engagement. For more information, visit:

http://www.excellenceforchildandyouth.ca/what-we-do or check out the Centre’s resource hub at http://www.excellenceforchildandyouth.ca/resource-hub.

For general mental health information, including links to resources for families:

http://www.ementalhealth.ca
References


