Using Peer Mediated Interventions to Enhance Social Interactions in Children with ASD

I. Introduction

A. Peer Interactions and Friendship Behavior
   1. A powerful predictor of independence and the formation of adult relationships later in life (Brown, Odom, & Holcombe, 1996; Guralnick, 1992; Strain, 2001)
   2. Deeper relationships form with a focus on increased sensitivity to others & a desire for peer acceptance (Goldstein & Morgan, 2002)
   3. Children with ASD spend less time interacting with peers than do children without disabilities and those with other disabilities (Buhrmester & Furman, 1986; Lord & Magill, 1989)
      a. Lack of opportunity
      b. Lack of familiarity and experience
      c. Lack of the needed social skills
   4. Key social behaviors to identify & support at the preschool level (Strain, 1983; 2001; Strain & Hoyson, 2000; Tremblay, Strain, Hendrickson & Shores, 1981)
      a. Sharing
      b. Showing affection
      c. Suggesting play ideas
      d. Assisting others
      e. Sustaining encounters
      f. Engaging in reciprocal interactions
   5. Perspective-taking challenges compromise the ability to decrease egocentric interaction in older children
      a. Explore identities, beliefs and aspirations through discussion and problem solving (Goldstein & Morgan, 2002)
      b. Identify understanding and use of complex language forms, literal versus abstract meanings
      c. Assess opportunities to engage with peers
   6. To improve friendship-based outcomes for individuals with ASD, it is important to design intervention so that it ensure equal status, provides authentic and motivating activities for engagement, and several opportunities are planned for interaction (Finke, 2016)

B. Assessment Tools
   1. Social Reciprocity Scale (SRS) (Constantino et al., 2000)
      a. Uses parent & teacher input
b. Assesses several behaviors in each of 7 categories
   1) Recognition of social cues
   2) Interpretation of social cues
   3) Response to social cues
   4) Tendency to engage socially
   5) Core autistic features (restricted or stereotyped patterns of behavior)
   6) Language deficits (qualitative impairment in communication)
   7) Miscellaneous symptoms (frequently associated with ASD).

c. Rates behavior as not true (0) – almost always true (3) during the past 6 months

2. The System for Observation of Children's Social Interactions (SOCSI) (Brown et al., 1996)
   a. Evaluate behaviors
      1) Social behavior (individual action of one child on another)
      2) Social interaction (reciprocal exchange among 2 or more children)
   b. 12 Social goals (intended outcomes)
   c. 15 Behavioral strategies (social behaviors used to achieve goals)
   d. Assess outcomes
      1) Accomplishes interaction purpose
      2) Fails interaction purpose (Brown et al., 1996)

   a. Inventories children’s social and communication behaviors across several contexts
   b. Guides a team’s understanding of the child to foster a discussion about core deficits
   c. Promotes educational planning

4. Social Skills Rating System (SSRS, Gresham & Elliot, 1990)
   a. Examines social skills impacting relationships between students & teachers, peer acceptance and academic competence
   b. Uses a series of rating forms completed by parents, teachers and students; behaviors rated on frequency & importance
   c. Links results to intervention planning
   d. Is standardized & norm referenced
   e. Examines three domains
      1) Social skills=>5 subscales problem behaviors
         a) Cooperation (helping others, sharing, complying)
         b) Assertion (initiating)
c) Responsibility (communicating with adults & regard for work and property)
d) Empathy (concern & respects for others’ feelings)
e) Self-control (response to situations with and without conflict)

2) Academic competence=>reading, mathematics, motivation, parental support, general cognitive function
3) Problem behavior sub-domains=>externalizing, internalizing, hyperactivity

II. Peer Interventions

A. Early Research
1. Immersion of children with social interaction challenges in socially active peer groups (Bricker, 1978)
2. Increased access to socially competent peers (Apolloni, Cook & Cook, 1977)
3. Training peers as interventionists (Goldstein, Kaczmarek, Pennington & Shafer, 1992; Hoyson, Jamieson & Strain, 1984; Kohler, Strain, Maretzky & DeCesare, 1990; Lee & Odom, 1996; Odom & Strain, 1984; Roeyers, 1996; Strain & Cordisco, 1994; Strain, Kohler & Goldstein, 1996)
4. Educating both children with ASD and their socially competent peers (Kamps, et al., 1992; Simpson, Myles, Sasso & Kamps, 1997).
5. Establishing group friendship activities (Cooper & McEvoy, 1996) & ‘buddy skills’ (English, Goldstein, Kaczmark & Shafer, 1996) support friendship building between young children with disabilities and their typical peers

FINDINGS: Children with ASD who have opportunities to experience peers without disabilities will increase the time they spend in interaction, their responsiveness to partner initiations and their attempts to initiate (Goldstein et al., 1992; Roeyers, 1996).

B. Facilitating interactions
1. Proximity=>placing typical peers who are socially competent with children with disabilities, and directing them to play with their peers without specific training
2. Promoting and reinforcing => a combination strategy where socially competent peers are trained to prompt a child with disabilities to play and then to reinforce the child’s responses
3. Antecedent prompting (Simpson et al., 1997)=>child with ASD is
paired with a socially competent peer who is instructed to remain in proximity to the child with ASD; teacher provides periodic prompts to the child with ASD; teacher initially waits for a response, and if there is none, physical prompts are provided.

4. **Peer initiation**=> strategy in which typical peers are taught to make social initiations with children with disabilities; taught to initiate with children with ASD in the context of sharing, suggesting play ideas, showing affection and providing assistance (Lee & Odom, 1996); teachers also taught to remind typical peers to use their initiation strategies with the child with ASD while in the classroom

5. **Peer tutoring** (Simpson et al., 1997)=> used in the inclusive classroom setting where children work in dyads with socially competent peers; peer tutors informed of the basic characteristics of autism. Teacher helps to define and structure the tutoring task such as what materials are to be used, how directions and reinforcement should be given and ways to manage inappropriate behaviors; informal interaction periods are also scheduled between tutoring tasks; can be used in elementary, middle and high school (DuPaul & Henningson, 1993; Locke & Fuchs, 1995; Odom et al, 1985; Goldstein et al., 1992; Kamps et al., 1992; Kohler et al., 1995); teachers train peers in the required skill & response; use of peer models helps students practice and improve a number of skills including language (Saenz et al., 2005), imitation (Garfinkle & Schwartz, 2002) & social skills (Bredekamp & Copple, 1997; Holahan & Costenbader, 2000; Odom et al., 1999)

6. **Peer mediation** (Strain & Cordisco, 1994; Strain et al., 1996)=> teaching typical peers to initiate play with children with ASD through role-play, adult cuing around play materials and activities, & reinforcement

7. **Peer networks** (Hochman et al., 2015)=> individualized interventions emphasizing social connections outside the classroom through the development of a cohesive social group that meets during the academic year either formally or informally (Carter et al., 2013); network facilitators are selected from staff and oriented to the process asked to recruit peers without ASD who are dependable, part of an existing network of friends, have appropriate social skills & show interest in students with disabilities; adult facilitators are then trained and potential peer partners are oriented about network goals, share ideas for interacting outside of scheduled times, the importance of confidentiality, and establish regular meeting times; results indicated notable increases in the percent of intervals with peer interactions & social engagement for all & all participants—students with and without ASD and school personnel saw the intervention as feasible and acceptable for adolescents ASD
7. **Effectiveness**
   a. Social skills groups facilitated interactions & time engaged between 3 students with ASD & their typical peers in 1st grade (Kamps et al., 1992).
   b. Increased interactions among typical peers and children with disabilities & a reduction of stereotypic or unusual behaviors by the children with disabilities (Lee & Odom, 1996)
   c. Intervention with 85 children with ASD and 48 typically developing peers (5 to 13 years of age) led to > time engaged, length of sustained interactions, responsiveness to initiations, & decrease in self-stimulatory behaviors; training of the typical peers via videotape viewing of children with ASD, instruction about the disorder at their comprehension level, and some role-playing (Roeyers, 1996).
   d. Children with ASD reduced symptoms after two years of intervention and an increase in developmental progress as measured by cognitive and language assessments (Strain et al., 1996).
   e. Peers’ use of facilitative strategies resulted in increased communicative interaction in preschool children with ASD including turn-taking and on-topic responsiveness to peer initiations when both children were reinforced and a decrease in nonsocial, less desirable behavior (Goldstein & Wickstrom, 1986)
   f. Typical peers as young as 3 can be taught to engage with socially withdrawn peers (Strain, 1977; Strain, Shores, & Timm, 1977)
   g. Elementary school students with ASD were taught greeting, conversation & play over 8 sessions & improved their greetings and play with less success in conversational skills (Barry et al., 2003)
   h. Peer training used to teach requesting, commenting and sharing during game play and compared self versus peer monitoring for school students with ASD using direct instruction (Morrison, Kamps, Garcia & Parker, 2001).
   i. Peer training used to support social skills and cooperative learning groups across two studies including a total of 39 students with ASD ranging in age from 7 to 14 years; results indicated increased social interaction among peers with generalization effects favoring cooperative learning groups (Kamps et al, 2002)
   j. Use of written text cues & peer training improves the social communication of children with ASD & their typical peers (Thiemann & Goldstein, 2004)
   k. Circle of Friends used to improve communication between children with ASD & their peers; children with ASD had better
response & initiation rates following intervention & at follow-up (Kalyva & Avramidis, 2005)

l. Peer to peer social skills instruction & peer training in elementary school led to increased initiations & responses in all participants (Banda et al., 2010)
m. Meta-analysis of peer mediated interventions for young children with ASD suggested this is a highly effective intervention (Zhang & Wheeler, 2011)
n. Peer support intervention (taught to identify the off-task behaviors and then taught to prompt appropriate behavior) was effective in reducing off task behaviors of 3 students (7 to 11 years) with ASD in inclusive settings (McCurdy & Cole, 2014)

C. Learning Experiences…An Alternative Program (LEAP) (Strain & Cordisco, 1994; Strain et al., 1996).
   1. Teaching typical peers to initiate play with children with ASD through role-play, adult cuing around play materials and activities, and reinforcement
   2. Parents are also engaged in the peer mediation training as they support their other children in interactions with their sibling with ASD.
   3. Four basic steps highlighted in example below are repeated for each social skill taught (i.e., sharing a toy, asking for a toy, suggesting to a friend what to do with a toy, saying nice things about the friend or what the friend is doing)
   4. Tracking forms are used to collect data on the trained behaviors the typical peers demonstrate and the responses of the children with ASD
   5. Time engaged is documented

EXAMPLE:

Introduction:
“Today we are going to learn how to get our friends to do fun things with us. It is important that friends learn to have fun with one another. One way to get a friend to have fun like talking or playing a game with us is by getting their attention.”

The specific skill of getting attention might be described in this way:
“One way to get our friends to have fun together is by getting their attention. To get a friend’s attention, --you look at your friend
--you say your friend’s name
--you gently tap your friend’s shoulder or arm if they are not looking at you. You keep trying until you get your friend’s attention.”

The interventionist might say the following:
“Let’s practice getting your friend, Mark’s attention so that he looks at you. Watch me. I’m going to get Mark’s attention. Tell me if I am doing it right? Did I get Mark’s attention? You’re right, I did get Mark’s attention. I looked at Mark, said his name, and gently touched him on the arm.”

The skill is rehearsed with the interventionist. For example, the interventionist might say:
“Now let’s have you practice getting a friend’s attention. Let’s pretend I am your friend and you are trying to get my attention. Remember to look at me, say my name, gently touch me on my arm if I’m not looking at you and keep trying until you get my attention.”

Interventionist trades places with the child and tries to get the child’s attention. The child is then asked to tell the interventionist if she did it right.

Typical peer practices or rehearses the skill with another child. It could be another typical peer and ultimately the target child with ASD. In this step, the interventionist explains that it is time to practice with a peer or friend and says something like:
“I am going to have David come over and practice with us. Christopher, you practice getting David’s attention. Remember, you are going to look at him, say his name, gently touch him on the arm or shoulder if he is not looking at you and keep trying until you get his attention.”

The interventionist provides feedback as needed and praises the children for looking at their friend and getting their friend’s attention.

III. Implications for Peer Intervention

A. Teaches Peers to:
   - Establish joint reference
   - Comment on ongoing activities
   - Acknowledge and respond to V and NV communication
   - Know their role as responder and initiator
   - Adopt a shared focus
   - Observe subtle V and NV cues

B. Friendship Behaviors
   - Sharing
   - Suggesting play ideas
   - Showing affection
   - Assisting others
- Increasing length of encounters
- Establishing reciprocity

C. **Adult Prompting**

- Needed for children to use play strategies
- Must be provided to typical peers and children with ASD
- Initially intense but decreases with emerging skills in the children
- Supports entry into peer groups and initiation of social contacts
- Peer + Adult mediation =>BEST RESULTS

D. **Review of Peer Mediated Social Interactions for Individuals with ASD** (Watkins et al., 2015)

1. Peer mediated interventions appear to show positive results for social interaction in children, adolescents & young adults in inclusive settings
2. Individual characteristics & type of social deficit should be considered when selecting specific peer-mediated strategies

IV. **Strategies to Promote Peer Interaction in Preschool** (taken from Hollingsworth, 2005)

A. **Setting up the Physical & Social Environment Skills**

- Pair a child with social difficulties with a socially competent peer (but not too above the social level of the child with challenges)
- Keep playgroups to 2-4 children
- Use toys most likely to encourage social interaction (e.g., blocks, housekeeping materials)
- Prepare materials around familiar themes (e.g., post office)
- Include toys/activities that are particularly motivating to the targeted child.

B. **Teaching Social Skills**

- Teach sociodramatic play scripts
- Teach children to (via modeling, brief instructions, practice & feedback)
  - Share
  - Give compliments
  - Take turns
- Promote social skills in the classroom
- Reinforce social skills
- Teach children with & without disabilities
- Teach in the context of motivating activities
C. Sample Socio-Dramatic Play Script
   • SETTING: grocery store
   • CHARACTERS: customer, baker, cashier
   • SCRIPT
     o Customer: asks cashier about cupcakes for BD party
     o Cashier: tells customer to go to the bakery & points
     o Customer: walks to bakery & asks baker for cupcakes
     o Baker: points & tells about the cupcakes
     o Customer: asks for 12
     o Baker: states price ($10)
     o Customer: requests cupcakes
     o Baker: hands cupcakes to customer
     o Customer: thanks baker
     o Customer: walks to cashier & hands cupcakes
     o Cashier: states cost
     o Customer: hands money
     o Cashier: takes money & wishes customer a nice day

D. Involving Peers
   • Teach incidental teaching strategies (e.g., ask peer to name the desired toy; give the toy when named; praise child for naming the toy)
   • Have peers keep track of the number of times they interact or praise their peer
   • Train several peers
   • Assign buddies during center time & teach children to stay, play & talk with their buddy
   • Change buddies regularly

E. Guidelines for Implementation
   • Ask parents & other teachers what social behaviors are critical to target
   • Observe children to gather information on who the children interact with, for how long & how well are they liked
   • Monitor interventions & change as needed for individual children
   • Try one intervention at a time
   • Try interventions in more than one location (e.g., in the classroom, on the playground, at the lunch table)
   • Trains paraprofessionals to both implement interventions & observe the children

F. Key Social Interaction Skills
   • Skills for play entry
     o Observe children at play & decide how & when to join
     o Use eye contact & pleasant tone when asking to play
   • Skills for maintaining play & forming friendships
     o Listen to & converse with other children
Negotiate & resolve conflicts  
Avoid physical aggression  
Contain emotions

- Skills for sharing & cooperating
  - Share toys
  - Help other children
  - Take turns in games
  - Take roles in pretend play

REFERENCES

**Resources for Assessing Social Behavior**


**Interventions to Promote Children’s Peer Interactions**


handicapped and nonhandicapped children (pp. 3-26). Baltimore, MD: University Park Press.


Wolfberg, P. J. *Peer play and the autism spectrum: The art of guiding children's socialization and imagination*. www.socialskillssolutions.com


**Circle of Friends**


