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## ***Facilitating Play & Social Interaction in Preschool Children with Autism Spectrum Disorders***

### **I. Challenges in Social Interaction for Children with ASD**

- A. Social impairment=>most salient feature of individuals with ASD (Lord, 1993; Volkmar, 1987; Volkmar & Klin, 1990).
  - 1. Lack the use of nonverbal behaviors (e.g., eye-to-eye gaze, facial expression, body postures, and gestures) to regulate social interaction
  - 2. Failure to develop peer relationships appropriate to developmental level
  - 3. Lack of spontaneous seeking to share enjoyment, interests, or achievements with others (e.g., lack showing, bringing, or pointing out objects of interest)
  - 4. Lack of social or emotional reciprocity (e.g., back and forth exchange of meaningful communication and shared emotional connection)
  
- B. Manifestations (American Psychiatric Association, 2000)
  - 1. Limited interest in developing friendships or interacting with peers at a young age to developing social relationships, but lacking social conventions at an older age
  - 2. Preference for solitary games or activities to viewing others as tools to accomplish a personal goal or pursue an individual interest.
  
- C. Course of the social impairment
  - 1. Quantitative and qualitative differences in development (Sigman & Norman, 1999; Sigman & Ruskin, 1999).
  - 2. Social skills emerge over time and at varying degrees for children with ASD, although social interaction tends to occur less frequently and remains somewhat impaired and highly challenging throughout life (Church, Alisanski, & Amanullah, 2000; Mundy & Sigman, 1989; Volkmar, 1987; Volkmar & Cohen, 1985; Volkmar & Klin, 1990).
  - 3. While impairments in social interaction during infancy and early childhood are one of the most powerful and accurate predictors of a later diagnosis of ASD, attainment of key social skills is one of the strongest predictors of developmental outcomes for individuals with autism and other developmental disorders (Lord, 1993; Siegel, Vulocevic, Elliott & Kramer, 1989; Volkmar, Carter, Sparrow & Cicchetti, 1993).

*Therefore=>we need to understand and intervene in this aspect of functioning!*

- D. Social Development of Children with ASD
1. Differences reported in the first year of life through retrospective parental report, videotape review and prospective studies in comparison to peers & other young children with other developmental disabilities (Adrien, 1991; Bernabei, Camaioni, & Levi, 1998; Charman et. al., 1997; Gillberg, et. al., 1990; Klin, Volkmar & Sparrow, 1992; Lord, 2000; Osterling & Dawson, 1994; Sigman & Mundy, 1989; Volkmar & Cohen, 1985).
    - a. Lack of reciprocal eye contact
    - b. Limited social smile
    - c. Less interest in the human face
    - d. Less pleasure from physical contact
    - e. Less likely to reach for or seek physical comfort from their parents
    - f. Look at others in their environment less frequently
    - g. Less consistently respond to their own name
    - h. Preference for objects & solitary activities
    - i. Limited range of facial & body expressions
    - j. Difficulty with perspective taking
    - k. Form attachments slowly
    - l. Fail to share enjoyment
    - m. Limited to no cooperative play
    - n. Prefer social relationships with adults
  2. Specific social interaction challenge for children with ASD=>**JOINT ATTENTION (JA)**
    - a. Ability to use gesture, body language, facial expression or verbal communication such as commenting or labeling to direct another's attention to and/or share interest in objects or events and their properties.
    - b. Emerges before words, is present in young children, predicts language development, and helps to coordinate attention between objects and people (Mundy et al., 1994; Wetherby & Prizant, 1992; Wetherby, et al.,1998; Wetherby et al., 2000)
    - c. Earliest indicator of autism in very young children, suggesting that failure to develop this skill which requires orienting to social stimuli could potentially influence the development of other critical social skills (Dawson et al., 1998; Mundy, 1995; Roeyers, et al., 1998).
    - d. Poor joint attention impacts the ability to integrate important interpersonal information and this compromises later development of reciprocal communication (Volkmar et al.,

1997) linked to limitations in play and in the development of peer relationships.

***Considering the critical role of joint attention in making early social and symbolic connections=>this is a primary target for intervention!***

## **II. Challenges in Communication & Play for Children with ASD**

- A. Impairment in communication is another core deficit area associated with autism (American Psychiatric Association, 1994; 2000)
  - 1. Delay in or lack of development of spoken language and gestures
  - 2. Impairment in the ability to initiate or maintain conversation
  - 3. Repetitive and idiosyncratic use of language
  - 4. Lack of pretend play
  
- B. Long term positive outcomes are predicted by the level of communicative competence individuals with ASD achieve (McEachin et al., 1993)
  
- C. Early communication development in children with ASD
  - 1. Communicative acts are used to signal intentional communication (Wetherby, 1984)
  - 2. Children with ASD . . .
    - a. Exhibit limited communicative functions (Wetherby et al., 2000)
    - b. Use verbal or nonverbal means to regulate behavior to meet their immediate needs
    - c. Fail to develop the capacity for social interaction and joint attention
  - 3. Limited communicative functions compromise opportunities for social engagement.
  
- D. Impairment in play (or lack of pretend play) has been described as part of the communication deficit and plays a central role in the diagnosis of and intervention for children with ASD.
  
- E. The transactional nature of play has an expectation for joint attention and contingent responding (Wolfberg, 1999)=>a certain social finesse is required when children are planning, coordinating and cooperating within group play activities placing children with ASD at a great disadvantage.
  
- F. Children with ASD
  - 1. Demonstrate less variation & engage in more repetition in their simple manipulations
  - 2. Display fewer variations, stereotyped combinations & limited relationships among objects in relational play

3. More restricted in their object use, preferring object- vs. doll- or other-oriented functional play
4. Limited or absent symbolic play where an agent is substituted or imagination is involved

***NOTE: Peer play intervention addresses challenges in=>joint attention and social interaction through facilitating bids to regulate behavior, create social routines and establish joint attention, and responses to interaction bids.***

### **III. Interventions to Support Social Communication & Play: Pivotal Response Training & Narrative Play Therapy**

- A. ***Pivotal Response Training & Naturalistic Teaching***=>increasing motivation by incorporating choices, reinforcing attempts, modeling, natural consequences (Koegel et al., 1999; McCormick et al., 2003; McGee et al., 1992; Pierce & Schreibman, 1995; 1997); *established intervention* (NSP, 2009)
1. **Pivotal behaviors** (e.g., motivation, responsivity to multiple cues, initiation, empathy, self regulation, social interaction) are central to a child's day-to-day functioning with the ultimate goal of training in these areas to facilitate generalized improvements across contexts
  2. **Components**
    - a. Provide a question, instruction or an opportunity for the child to respond using language appropriate to the task,
    - b. Provide clear and uninterrupted maintenance tasks (those the child can already perform) with novel tasks (those the child will be learning)
    - c. Give the child some choice or shared control in selecting a learning task.
    - d. Structure a child's learning environment so that s/he is able to respond to multiple cues
    - e. Reinforce the child's behavior immediately, respond to all attempts & make sure the reinforcement is a natural consequence for the behavior
  3. **Monitor implementation of the intervention**

*Did I have the student's attention?*  
*Did I use clear and simple directions?*  
*Did I follow the student's lead or choices?*  
*Am I providing a mixture of learned skills with new skills?*  
*Did I reinforce good attempts?*  
*Am I rewarding the student with what he is asking for?*  
*Am I reinforcing immediately?*
  4. **Effectiveness**

- a. Successfully used to increase social interaction in toy play between typical peers and children with ASD (Koegel & Koegel, 2001)
  - b. Improvement in sound production was reported for 5 children with ASD in response to a systematic approach to intervention using motivators within a natural language teaching framework (Koegel et al., 1998). Although speech and language intervention was successful in this context, generalized learning did not occur
  - c. 2 children with ASD were successful in their ability to engage in a variety of complex social and attentional behaviors (e.g., initiation, joint attention) using peer mediated PRT (Pierce & Schriebman, 1995); replicated findings in later study (Pierce & Schriebman, 1997)
  - d. PRT improved symbolic play skills in 7 children with autism (Stahmer, 2001)
  - e. 5 children with ASD taught self-initiations using PRT (Koegel, Koegel, Shoshan & McNerny, 1999).
5. **Value**=> Recognizes the importance of capitalizing on a child's interest and finding objects, actions, people and events that motivate the child; supports initiation, self-regulation and empathy in the context of social situations, & facilitates the responsiveness of children with ASD to multiple cues in their natural environments

- B. **Narrative Play Therapy**=>teach children with ASD to engage in joint attention and follow the sequence of symbolic play while interacting w/ peers in natural settings & learning language in social contexts (Densmore, 2000); *emerging intervention* (NSP, 2009)
- 1. Introduce a story in small, sequential steps through symbolic play using circles of communication
  - 2. Child learns the language needed to tell the story, how to share objects in play & experience play events with peers

Goal 1: Develop joint attention

- Level 1: Peer partner learns to comment either verbally and/or non-verbally (e.g., prompting a peer to say 'Look!' and/or point to a rising balloon) to a child with ASD.
- Level 2: Teach the child with ASD to look at the peer partner who commented and continually prompting the children to make comments as they look at, for example, the balloon rising to the ceiling. Visual scripts can be used to prompt comments such as 'cool' or 'awesome' (Densmore, 2000).
- Level 3: One of the peer partners might be asked by the interventionist to hold an object, such as the balloon, and then ask the other partner if they want to hold it. The

- children are prompted to both ask questions of one another and to answer those questions.
- Level 4: Play partners encouraged to initiate a back & forth exchange with one another, commenting about what they are doing (e.g., toss the balloon back and forth & make comments like ‘catch it, here it comes, or look out it’s going to fly away.’); interventionist models such comments to prompt the children’s play, using varied tone and pitch patterns to encourage strong emotional connections between the play partners.
- Level 5: Play partners are left to play independently so the interventionist can observe any attempts at joint attention; children are praised for their peer play actions & data is kept on children’s commenting and looking at their play partner
- Level 6: Peer partner is prompted to move play objects toward the child with ASD, verbally prompting or gesturing to get the child with ASD to respond; interventionist uses prompts such as questions to increase the peers’ time engaged in commenting during their play.

Goal 2: Develop a sense of story between partners with an object and agent following an action sequence for approximately 5-10 minutes using a narrative with a beginning, middle & end

- Level 7: Prompt the child with ASD & the peer play partner to create a story about an object of play (e.g., posing questions about the balloon, where it’s going to go, how it is moving); interventionist encourages the children to follow one another and comment on the object and action of their play
- Level 8: Simple language is introduced & the children’s comments are rephrased to support the development of a story (e.g., a character might be introduced as riding in a hot air balloon to travel around the world); interventionist allows the children to name the character or where the character might be going and then offers simple language to highlight the beginnings of a story (e.g., David is riding the hot air balloon and lands in Alaska. He is so cold he decides to come home.)
- Level 9: The children’s narrative on the computer & the play partners add photos or pictures to their story that is placed in a small book; interventionist takes pictures of the children acting out their story to be added to the book; each child given a copy

Level 10: Videotape is made of the play partners as they create a story about what they are doing together; children are given an opportunity to watch the video, which is also shared with their parents so that they might learn some strategies from the interventionist to facilitate their child's play with a peer partner at home

Levels 11-12: Interventionist identifies other locations in which she might join a child with ASD in play with a peer, narrating their actions, modeling comments, rephrasing verbalizations and cueing both children to look at one another, their objects or play and making comments so that joint attention is maintained and a sense of story is established.

**3. Effectiveness:**

- a. No empirical data is currently available, but Densmore (2000) provides positive case study reports of its effectiveness.
- b. Support for incorporating the favorite themes of children with ASD into their social play with siblings and their school peers (Baker, 2000; Baker, Koegel, & Koegel, 1998).

**IV. Interventions to Support Social Interaction: Integrated Play Groups, Peer Mediation and Peer Play Intervention**

A. Integrated Play Groups; *emerging intervention* (NSP, 2009)

1. Supports the play of children with ASD and their typical peers in inclusive settings (Zercher, Hunt, Schuler, & Webster, 2001).
2. Features
  - Well-designed play spaces
  - Play materials with interactive potential
  - Consistent schedule and routine
  - Focus on competence
  - Guided participation
  - Developmentally appropriate peer partners
  - Immersion in play in natural settings (Wolfberg & Schuler, 1993)
3. Playgroups consist of at least five children, two with ASD (novices) and three to five who are typically developing (experts).
4. Meet on a regular basis, usually two or more times a week, in a designated play space to socialize for 30 to 60 minutes at a time
5. Adult interventionist serves as a play facilitator providing varying levels of support to the 'players' and incorporating the specific interests of the children with ASD in play themes—adult becomes the interpreter between the novices and the experts
6. Interventionist monitors the children's play initiations and scaffolds interactions by adjusting the need for support based on the children's play needs

7. Model designed to support the quality of play, focus, and language complexity of older elementary children with ASD (Schuler & Wolfberg, 2000; Wolfberg, 1995b).

B. Peer mediated interventions; *established intervention* (NSP, 2009)

1. *Peer tutoring*=>pairing students to work on an instructional strategy using assistance, instruction & feedback with peer supports (Locke & Fuchs, 1995; Odom et al, 1985; Goldstein et al., 1992; Kamps et al., 1992; Kohler et al., 1995).
2. *Proximity*=>placing typical peers who are socially competent with children with disabilities, directing them to play with their peers without specific training
3. *Prompting and reinforcing* => combination strategy where socially competent peers are trained to prompt a child with disabilities to play and then to reinforce the child's responses.
4. *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 to engage in social interaction
5. *Peer initiation*=> typical peers are trained to make social initiations with children with disabilities (Lee & Odom, 1996)
6. *Peer mediation* (Strain & Cordisco, 1994; Strain et al., 1996)  
***Learning Experiences...An Alternative Program (LEAP)*** (Strain & Cordisco, 1994; Strain et al., 1996).
  - a. Teaching typical peers to initiate play with children with ASD through role-play, adult cuing around play materials and activities, and reinforcement
  - b. Parents are also engaged in the peer mediation training as they support their other children in interactions with their sibling with ASD.
  - c. 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)
  - d. Tracking forms are used to collect data on the trained behaviors the typical peers demonstrate and the responses of the children with ASD
  - e. Time engaged is documented

**Four steps to support peer mediated intervention**

- 1) Introduce the skill to a typical peer, describing & providing a rationale
- 2) Demonstrate skill for typical peer
- 3) Rehearse skill with the interventionist
- 4) Typical peer practices/rehearses the skill with another child

**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.

(taken from Prelock, 2006)

7. **Effectiveness**
- a. Social skills groups (10 mins prior to 20-min play groups in school 4 tx/week) used to train 1<sup>st</sup> grade children with ASD & high cognitive skills & their peers to initiate, respond, maintain interactions, greet, take turns, share, ask for help, give help, give & accept compliments; outcomes=> in frequency of time engaged, duration of interactions & responsivity which continued with feedback & at follow-up (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, in 30 minute play session) 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. Children with ASD participated in a museum based art program with typical peers; typical peers > directed communication toward children with ASD during the art activities (Schleien, Mustonen & Rynders, 1995)
  - h. 3 typical peers & twins with ASD (5-6 years old) in integrated peer group in Sunday School class; typical peers taught to use attention directing behaviors and language to promote joint attention and to model symbolic play behaviors; also taught strategies they could use if they experienced resistance from the twins with ASD & were coached by adults as needed; results showed increased joint attention, symbolic play, and language use of the twins

- with ASD, also showed that peers could learn and implement skills and strategies (Zercher et al., 2001)
- i. School age children taught social skills (through adult instruction & peer mediation) for game playing and succeeded at >ing initiations & engagement time with peers (Morrison et al., 2001)
  - j. Extensive research on a classroom based program, which systematically trains peers who are typically developing to play and respond to children with autism (Goldstein & Kaczmarek, 1992; Goldstein & Cisar, 1992; Goldstein, et al., 1992; Goldstein, et al., 1995; English et al., 1997); created a buddy system in inclusive classrooms to support children with ASD requiring typical peers to Stay, Play, and Talk; through role play and directed practice typical peers were taught to stay with the identified child as s/he played, to play with similar materials as the identified child, and to talk with the identified child about the play. Several outcomes were reported:
    - Typical peers > interactions with children with ASD
    - Children with ASD > responsiveness and interactions with typical peers
    - No generalization to play situations outside the classroom.
  - k. Other researchers have designed classroom programs and found similar outcomes, e.g., >in social interactions in children with ASD & their typical peers, when typical peers were involved in peer training and priming (Zanolli et al., 1996)
  - l. Gonzalez-Lopez & Kamps (1997) typical peers trained in the social skills such as greeting, imitating, sharing, turn taking and requesting during free play; frequency and duration of play > for students participating in this study
  - m. Pierce & Schreibman (1997) trained peers (8-9 years) through didactic instruction, modeling, role play & feedback to maintain interaction with children with ASD (7-8years); outcomes lead to increased engagement, no change in initiations, & some generalization of interaction to untrained peers.
  - n. 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)
  - o. 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 et al., 2001).

- p. 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)
- q. Use of written text cues & peer training improves the social communication of children with ASD & their typical peers (Thiemann & Goldstein, 2004)
- r. Use of motivational strategies in play dates to improve quality social interactions between children (8-9 years) with ASD & typical peers (Koegel et al., 2005)

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