Symbol-Infused Play for Children with Complex Communication Needs

GOALS
- Review the 3 stages of play in typically developing infants and toddlers, up to but not including symbolic play
- Discuss the importance of play
- Discuss challenges faced by children with CCN who may require AAC
- Present strategies to promote play, communication, and language development in these children
- Emphasize infusing symbols in play

DEFINITION OF “PLAY”
- Early social interactions between caregivers and their infant that do not consist of caregiving activities are considered “play” (Mager, Trevis, & Newland, 2000).
- “Play consists of spontaneous, naturally occurring activities with objects that engage attention and interest” (after, Moser, & Fifer, 2011, after Bloom & Lehr, 1998).

Complex Communication Needs (CCN)
- Some young children do not develop speech and language skills as expected, due to motor, language, cognitive, and/or sensory perceptual impairments that may result from cerebral palsy, autism, Down syndrome or other developmental disabilities, (Glick & Glick, 2001, p. 200)

IMPORTANCE OF PLAY
- Play is the means through which young children learn about themselves, other people, and the world around them.
- Soon after birth, caregivers initiate interactions with their baby through touch, movement, vision, and sound; they engage in MULTISENSORY, reciprocal experiences.
- Play and communication are a natural part of caregiver-infant interaction beginning in the first moments of life.

IMPORTANCE OF PLAY
- As babies begin to develop greater control of their physical abilities, they produce actions, vocalizations, and facial expressions, thereby evoking reciprocal behaviors from parents.
- Parallel development in play and language.
- For children with significant developmental disabilities, play and communication may be quite different and/or limited from the beginning.

STAGE 1: SOCIAL PLAY
- Description
  - A “very communicative system” (Breider, 1991)
  - Parents use eye contact, exaggerated facial expressions, smiles, imitation, positive affect, close proximity
  - Infants respond with social smile and body movements (Rochat, Greve, & Emran, 1990)
  - Predictable, repetitive routines in play with a beginning, middle and end (Rochat et al., 1999)
  - Initially, parent is active partner and infant is passive
  - Later, infant becomes more active
  - Turn-taking becomes more balanced
STAGE I: SOCIAL PLAY

- Importance
  - Foundation of communication: "proto-conversation" (Batson, 1976)
  - Infants attend to information and affect
  - Infant gazes, smiles, vocalizations, moves arms and legs in response to parents and parents interpret these behaviors as intentional
  - Parents highly responsive to infants and infants become highly responsive to parents
  - Beginning of touch-talking

STAGE I: SOCIAL PLAY

- Challenges for children with CCN
  - Down syndrome:
    - Infant displays a need to seek and long periods of gazing with parents and subsequent persistent gaze and smiling (Beiger & Cunningham, 1981)
    - Visual attention and difficulty shifting gaze (O’Connor, Adlam, Reyner, & Kow, 1994)
  - Hypotonia and delayed motor development (de Castro, da Cunha, Savariraja, & Rocha, 2015; Tullia, Penna, Basco, & Savasbergh, 2011)

STAGE I: SOCIAL PLAY

- Strategies to support play, communication, and language development
  - Face-to-face interactions
  - Parents may need help in recognizing their infants’ subtle behaviors
  - Use touch, movement, and vocalizations to interact with infants (multisensory)
  - Use infant-directed motion and speech to engage infants in social play

STAGE I: SOCIAL PLAY

- Strategies to support play, communication, and language development
  - Establish routines and consistent patterns of interactions (predictable songs, games, and stories)
  - Use pauses and expectant looks to give infants opportunities to respond
  - Introduce symbols into routines
  - Object symbols
  - Manual signs and dialogic communication displays’ devices should be aligned with adults’ eye gaze so that the infant does not have to shift attention during social play (Smith, Byers, & Ricks, 2000)

STAGE I: SOCIAL PLAY

- Challenges for children with CCN
  - Cerebral palsy:
    - Significant motor impairment and paresis and exaggerated primitive reflexes in infants, respectively (Elmaso, 1994; Capone, Pisanu, Accardo, Vaccarello, Ross, & Feliner, 1982)
    - May have co-existing medical problems such as feeding difficulties, seizure disorders, visual impairments (Cotter, Feltner, & Feinberg, 2014)
    - Limited facial expressions, more negative affect, less frequent smiles, subtle behaviors that are difficult to interpret (Rogers, 1986)
STAGE II: EXPLORATORY PLAY

**Importance**
- Infants explore objects through all of their senses: sight, hearing, taste, smell, and touch.
- Infants learn about the general properties of objects by manipulating them in nonspecific ways.
- Infants discover objects by capturing, shaking, or dropping them.
- Objects become familiarized when objects are repeated.
- Infants select objects at first before infants can (Bakeman & Adamson, 1984), by talking about objects.

**Description**
- Parents use infant-directed motion (Brand, Shattuck, Sekino, & Massie, 2007) to make their actions more salient to infants.
- Parents use infant-directed motion in synchronizing their verbalizations (Gogate, Behrck, & Watson, 2000).
- Highly interactive, limited range of movement, close proximity to infant, repetitive, simplified motions (Brand, Baldwin, & Ashburn, 2002).

STAGE II: EXPLORATORY PLAY

**Importance**
- Intensified dialogue (Siegel & Cress, 2002)
- Direct attention to what parent is doing
- Overt, visible goal achievement
- Encourages participation in joint situation (Carpenter, Nagell, & Tomasello, 1998)
- Executive language begins to develop

STAGE II: EXPLORATORY PLAY

**Description**
- Infants first begin to follow their parents' gaze and pointing.
- Infants begin to call attention to themselves and direct parental attention through gestures, show, guide, and point.
- Parents use infant-directed speech when following-in to infant's focus of attention (Engen, 1985).
- Reduced utterance length, simpler syntax, repetition of sentences and phrases, limited use of prosody (Snow, 1972).
STAGE II: EXPLORATORY PLAY

- Challenges for young children with CCN
  - Cerebral palsy
  - Motor impairment impacts ability to sit with support or unsupported and use hands to reach for and grasp objects and explore objects
  - Infants with CP are more passive; look at objects rather than actively explore them
  - Mothers tend to engage in more proximal behaviors touching, kissing, holding, fewer distal behaviors: taking, sitting, looking and smiling at their infants (Brooks-Gunn & Leventhal, 1984)

STAGE II: EXPLORATORY PLAY

- Challenges for young children with CCN
  - Down syndrome
    - Delayed acquisition of early motor skills (Perera, Basco, Lindau, da Silva & Tudelle, 2013)
    - Hypotonia and difficulty bringing hands to midline and grasping (de Campos et al., 2013)
    - Deficit in manipulation object play (Legetere NO, Vanherle, 1997; Gower, Goldman, Johnson-Martin, & Hussey, 1999)
    - More likely to engage in passive behaviors like looking or holding toys rather than active manipulation (Landy & Choppeski, 1989)

STAGE II: EXPLORATORY PLAY

- Challenges for young children with CCN
  - Autism spectrum disorders
    - Exibit unusual patterns of object exploration
    - Restrictive and repetitive atypical behaviors (such as spinning, rolling, rotating, unusual visual regard) can interfere with purposeful object exploration
    - Infants at risk for autism may exhibit a generalized problem with movement initiation (Nickel, Thalheimer, Ketter, Worrall, & Leveson, 2013)

STAGE II: EXPLORATORY PLAY

- Strategies to support play, communication, and language
  - Provide play surface with edges to contain toys and attach to surface
  - Explore objects with feet (Galloway & Tidman, 2004)
  - "Stick" play — engage in sound play, sound effects with Voice Output
  - Infuse symbols
    - Manual cues should be presented in child's signing space
    - Auditory/visual devices should be presented across the objects so that infant does not have to shift attention

"STICKY MITTENS"

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STAGE III: FUNCTIONAL PLAY

Stages III: Functional Play

**Description**
- Infants begin to interact with objects in the ways they were first presented.
- They combine objects in novel ways depending on their specific properties.
- These behaviors depend on their innate abilities to perceive objects in the immediate environment.
- The ability to manipulate objects is driven by an increased sensory capacity.
- Children also begin to use language by exploring new words and combinations and may begin to use these words to indicate they are "daddya's boys".

**Importance**
- Infants actions on objects show how they think about objects in relation to other objects, the environment, their parents, and themselves.
- Parents language reflects infants' focus of attention by maintaining the activity.
- First words are expressions of infants' ideas.
- Infants use these ideas to explore the environment and understand the world.

**Challenges for young children with CCN**
- Cerebral palsy:
  - Difficulty selecting and engaging with toys in interactions with parents.
  - Difficulty manipulating objects.
- More passive looking.

- Challenges for young children with CCN
  - Down syndrome:
    - Delay in gross motor skills; sitting independently, crawling, and walking.
- Cerebral palsy:
  - Difficulty selecting and engaging with toys in interactions with parents.
  - Difficulty manipulating objects.
- More passive looking.

**Strategies to support play, communication, and language**
- Use of "I" statements:
  - Helps children express their thoughts and feelings.
  - Encourages communication.
- Use of social stories:
  - Helps children understand social situations.
- Use of visual aids:
  - Helps children understand concepts.
- Use of verbal descriptions:
  - Helps children understand language.

**Produce manual signs within the child's signing space while child is engaged with toys and objects in the environment.**
STAGE III: FUNCTIONAL PLAY

- Strategies to support play, communication, and language
  - Words and symbols by developing language skills in children that are meaningful to the child and parent (light & Longer, 2003)
  - Increase opportunities to use new words, as well as their language skills through play (Morgan & Longer, 2006)
  - Use games that involve children and parents, and other family members to expand language skills (Morgan & Longer, 2014)
  - Place communication aids and toys close to the child with parental assistance to support joint attention and interaction (Bonomo, Bennett, McCarty, & Smith, 2011)
  - Use motivating activities and toys

PHOTO

VISUAL SCENE DISPLAY

TOY FARM

GRID

VISUAL SCENE DISPLAY

CONCLUSIONS

- Because spontaneous play is joyful, fun, motivating, and can take place anywhere and at anytime in the daily life of children, it is the ideal context in which to improve symbols to promote communication and language development.
- Just as we should use a developmental approach for targeting language and communication intervention, we should also use a developmental approach for play interventions. Therefore, careful thought should be given to children's current levels of play in order to help them progress further in each of these domains.
CONCLUSIONS

- For very young children with complex communication needs, AAC provides the voices to express their thoughts and ideas to others. We must support communication, language and play within the context of the child’s daily life with parents and siblings.
- So much more to “play”
- So many different ways to “infuse symbols” into play to build language and communication

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