

Joint Attention and Parent-Child Intervention: Pivotal Skills for Social-Emotional Development in Relationship-Based Contexts

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Overview

- ▣ Describing the trajectory of joint attention
- ▣ Recognizing early signs of developmental risk in dyadic interaction related to joint attention deficits
- ▣ Implications for approaches to joint attention relationship-based interventions.

Key Developmental Milestones

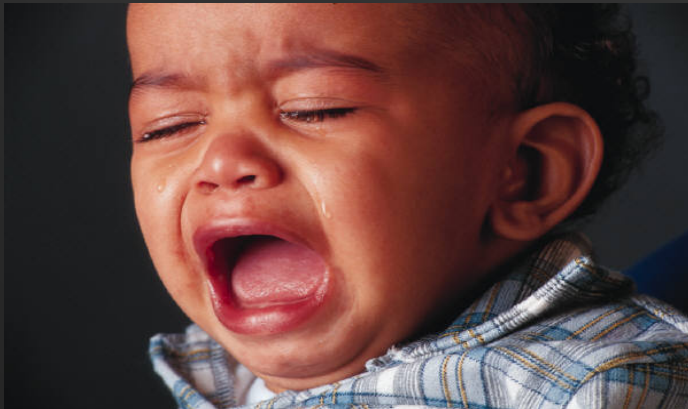
First Signs, Inc. (2004) Key Social, Emotional, and
Communication Milestones for Your Baby's Healthy Development

▣ 4 MONTHS

- ▣ Follow and react to bright colors, movement, objects
- ▣ Turn toward sounds
- ▣ Show interest in faces
- ▣ Reciprocal smiling

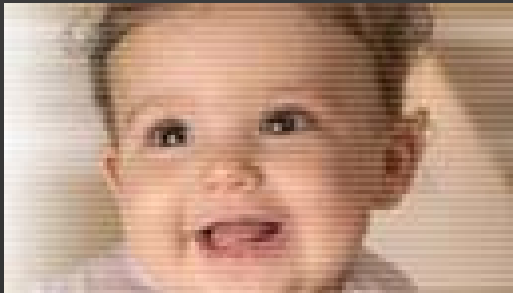
▣ 6 MONTHS

- ▣ Relates to others with joy
- ▣ Smile often
- ▣ Coos or babbles when happy
- ▣ Cries when unhappy



Key Developmental Milestones

▣ 9 MONTHS



▣ 12 MONTHS

- ▣ Smile/laugh while looking at you
- ▣ Exchange back and forth sounds
- ▣ Exchange back and forth gestures: give, take, reach
- ▣ Use repeated gestures (give, show, reach, wave, point)
- ▣ Play peek-a-boo, patty cake, other social games
- ▣ Making sounds and single word approximations
- ▣ Turn to person when his/her name is called

Joint Attention: 7 months



Joint Attention: 11 months



Key Developmental Milestones

▣ 15 MONTHS

- ▣ Many back-and-forth smiles, sounds, gestures
- ▣ Uses pointing or “showing” gestures to gain attention to something of interest
- ▣ Uses different sounds to get needs met and draw attention to interests
- ▣ Use and understand at least three words (“mama”; “dada”; “bye-bye”; “bottle”)



Key Developmental Milestones

▣ 18 MONTHS



- ▣ Use lots of gestures with words (e.g. pointing and says “want juice”)
- ▣ Use lots of consonant sounds in single word approximations/words
- ▣ Uses and understands at least 10 words
- ▣ Shows/knows the names of familiar people or body parts
- ▣ Engage in simple pretend play (feeding a doll, putting doll to sleep)

Key Developmental Milestones

▣ 24 MONTHS



- ▣ Pretend play with more than one action (feed doll and put doll to sleep)
- ▣ Use and understand at least 50 words
- ▣ Use at least two words together (without imitation and repetition) and in a way that makes sense (e.g., “want juice”)
- ▣ Enjoy being next to children of same age, show interest in playing with them, giving toy to another child
- ▣ Look for familiar objects out of sight (when asked)

Key Developmental Milestones

▣ 36 MONTHS



- ▣ Enjoys pretend play (play different characters talking for dolls or action figures)
- ▣ Enjoys playing with children same age
- ▣ Using language to convey thoughts and actions (“sleepy, go take nap”)
- ▣ Answer “what,”; “where”, and “who” questions easily
- ▣ Talks about interests and feelings about the past and future

Development of Gaze Behaviors

- ▣ Series of studies conducted by others to establish a basic paradigm of gaze behaviors in babies 6-18 months of age.
 - 6 months: gaze depends on adult signal and the differentiated properties mother attends to in the environment
 - 12 months: gaze on localizing targets of interest and fixates on mother during gaze referent: direction and location
 - 18 months: between 12-18 months of age development of representational spatial mechanism
- ▣ Subtle developmental changes that are mutually embedded across mechanisms.

Development of Gestures

- ▣ Gestures are actions produced with the intent to communicate.
- ▣ Gestures: important early indicator of intentionality and window into early communication skill development.
- ▣ Gesture types and hierarchy of development: reaching, showing, giving and pointing.



Ontogenesis of Gestures

Emergent chronology of gestures with early communication behaviors:

- Looking
- Vocalizing
- Vocalizing and looking
- Making contact with an adult's hand
- Reaching with the whole hand
- Reaching with whole hand and vocalizing
- Reaching with opening and closing hand
- Reaching with opening and closing hand and vocalizing
- Pointing
- Looking at the object, at the adult, and then at the object
- Using a word/word approximation



(Crais et al, 2004)

Early Signals of Communication and Routines: 7 months



Mother-Child Interaction: 11 months



Conclusions

- ▣ Early communicative gestures and early signals of communication appear related to language development (Crais, Douglas & Campbell, 2004; Iverson & Goldin-Meadow, 2005) .
- ▣ Early communicative routines demonstrate ways in which mothers support and scaffold joint engagement and joint attention in interactions (Adamson, Bakeman & Decker, 2004; Tomasello, 1988; Mundy & Willoughby, 1998).
- ▣ Infant-mother dyads provide a ‘window’ to examine the developmental trajectory of joint attention in the context of a social interaction.

Co-construction of Joint Attention

- ▣ **History of joint attention: mid-and late 1970s research focused on three ways that infants incorporate social interactions with others:**
 - **Sharing attention**
 - **Following attention**
 - **Directing attention**
- ▣ **Theoretical perspective of Tomasello: attempted to provide single theoretical foundation**
 - **Infants engage in joint attention interactions when they understand other persons as intentional agents**
 - **Intersubjective awareness**

Co-construction of Joint Attention

▣ Joint attention behaviors in practice

- Joint attention is primarily a social or social-cognitive phenomenon: two individuals know that they are attending to something in common.
- Child coordinates attention to the object and the adult at the same time that the adult coordinates his/her attention to the same object and the child. Notion that the participants are sharing an intentional relation to the world.

▣ Sharing attention as joint engagement

Joint Attention Exemplar



Co-construction of Joint Attention

- ▣ Developmental course of joint attention
 - Joint attention (Dunham & Moore, 1995)
 - Supported joint attention (Bakeman & Adamson, 1984)
 - Coordinated joint attention (Adamson & Bakeman, 1991)
- ▣ Relationship between joint attention and early word learning (Tommasello & Farrar, 1986)
- ▣ Little systematic research that focuses on how very young children and their partners share attention during social interactions (Adamson, Bakeman & Deckner, 2004)

Trajectory of Joint Attention : 'Royal Road to Language'

- ▣ Early coordinated joint attention episodes recognized as significant across dimensions of development.
 - ▣ "...episodes of shared attention are pictured variously as moments for the mutual regulation of affect and of problem-solving, for the negotiation of communicative intentions, and for sharing of cultural meaning." (Adamson & Bakeman, 1991, p.9).
- ▣ Established path from joint attention to early language (e.g., Tomasello & Todd, 1983; Tomasello & Farrar, 1986; Mundy & Gomes, 1998; Carpenter et al, 1998; Adamson et al, 2004).
- ▣ Little known about the trajectory of early signals of communication and joint attention in infant-mother dyads.

Developmental Trajectory of Joint Attention

▣ **Following Attention**

- Gaze following
- Joint Engagement

▣ Conditioned gaze follow (passive joint attention) :9 months

▣ Spontaneous gaze follow/coordinated joint attention: 12 months

▣ **Following Behavior**

- Social referencing
- Imitative learning

▣ Conditioned emotions: 9 months

▣ Social referencing (imitative learning of symbols, actions on objects: 12 months

▣ **Declarative Attention**

- Declaratives

▣ Declarative pointing with gaze alternation: 12 months

▣ **Directing Behavior**

- Imperatives

▣ Imperative pointing with gaze alternation: 12 months

Risk Can Be Identified Early

- ▣ Social-communicative abnormalities in the first and second year of life in the following areas:
 - ▣ Eye contact
 - ▣ Social referencing
 - ▣ Imitation
 - ▣ Orientation to name
 - ▣ Shared attention and affect

Early Red Flags for Risk

- ▣ By 6 months, failure to
 - Look at faces
 - Smile at others
 - Coo (vowel vocalizations)
- ▣ By 12 months, failure to
 - Respond to name
 - Babble (consonant-vowels)
 - Play social games
 - Display bright affect
- ▣ By 18 months, failure to
 - Point and show
 - Use single words
 - Use gestures
 - Imitate
 - Show interest in other children



Developmental Risk Concerns: Related to Social and Joint Attention

RED FLAGS:

- Child does not look at face to check your reaction when faced with something unfamiliar.
- Child does not/rarely uses his/her index finger to point, to indicate interest in something.
- Child does not bring objects over to parent to show.
- Child does not consistently respond to his/her name when called.

Developmental Red Flags

▣ Impairment in Social Interaction

- Lack of appropriate eye gaze
- Lack of warm, joyful expressions
- Lack of sharing interest or enjoyment
- Lack of response to name

▣ Impairment in Communication

- Lack of showing gestures
- Lack of coordination of nonverbal communication

Examples of Deficits in Social Interaction

- ▣ Difficulty using nonverbal behaviors to regulate social interaction
- ▣ Failure to develop age-appropriate peer relationships
- ▣ Trouble looking others in the eye
- ▣ Little use of gestures while speaking
- ▣ Trouble knowing how close to stand to others
- ▣ Unusual intonation or voice quality
- ▣ Few or no friends
- ▣ Relationships only with those much older or younger or with family members
- ▣ Relationships based primarily on special interests
- ▣ Trouble interacting in groups and following cooperative rules of games

Examples of Deficits in Social Interaction

- ▣ Little sharing of pleasure, achievements, or interest with others
- ▣ Enjoys favorite activities, television shows, toys alone (without trying to involve other people)
- ▣ Does not try to call others' attention to activities, interests, or accomplishments
- ▣ Little interest in or reaction to praise
- ▣ Lack of social or emotional reciprocity
- ▣ Does not respond to others
- ▣ Not aware of others
- ▣ Strongly prefers solitary activities
- ▣ Does not notice when others are hurt or upset; does not offer comfort

Line of Regard: Typical and Atypical



Turn Taking: Typical and Atypical



Example of Deficits in Communication

- ▣ Delay in or total lack of development of language

- ▣ Difficulty holding conversations

- ▣ No use of words to communicate by age 2
- ▣ No simple phrases (for example, “more milk”) by age 3
- ▣ After speech develops, immature grammar or repeated errors
- ▣ Has trouble knowing how to start, keep going, and/or end a conversation
- ▣ Little back-and-forth; may talk on and on in monologue
- ▣ Fails to respond to the comments of others; responds only to direct questions
- ▣ Difficulty talking about topics not of special interest

Example of Deficits in Communication

- ▣ Unusual or repetitive language
 - ▣ Repeating what others say to them (echolalia)
 - ▣ Repeating from videos, books, or commercials at inappropriate times or out of context
 - ▣ Using words or phrases that the child has made up or that have special meaning only to him/her
 - ▣ Overly formal, pedantic style of speaking (sounds like a “little professor”)

Example of Deficits in Communication

- ▣ Play that is not appropriate for developmental level
 - ▣ Little acting-out scenarios with toys
 - ▣ Rarely pretends an object is something else (e.g. banana is a telephone)
 - ▣ Prefers to use toys in a concrete manner (e.g., building with blocks, arranging dollhouse furniture) rather than pretending with them
 - ▣ When young, little interest in social games such as peek-a-boo, ring-around-the-rosie

Early Intervention In Very Young Children

- ▣ Recent focus on developmental precursors of communication, language and social development in the first two years of life.
- ▣ Children at risk generally have failures of joint attention, nonverbal and preverbal communication, social reciprocity, affective understanding, and imitation.
- ▣ Importance of in-home community-based interventions: relationship-based.

Relationship-Based Interventions

- ▣ Based on the recognition that early responsive interactions critically influence children's development in behavioral, social, emotional and cognitive domains (Bakermans-Kranenburg et. al, 2005; Cicchetti,et al., 2000; Guralnick, 1999)

- ▣ Relationship-based early interventions recognized as important mediators
 - ▣ Supporting parent-child joint engagement
 - ▣ Regulating parent-child interactions
 - ▣ Improving developmental outcomes

Relationship-Based Interventions

- ▣ Interventions that are dyadic, positive, and that support the parent-child relationship, have been demonstrated to improve quality of interactions, family functioning, and developmental outcomes of the child (Baker et al, 2010; Heinicke et al 1999, 2000, Keren et al, 2001; Mahoney & Perales, 2003).
- ▣ Relationship-based intervention domains include the following:
 - Provide maternal support for creating responsive interactions
 - Demonstrate strategies that focus on maternal sensitivity, responsiveness, and joint attention
 - Provide developmental and relational guidance.

Role of Families in Intervention

- ▣ Parents' concerns and perspectives should actively help to shape the intervention.
- ▣ Parents should be provided the opportunity to learn techniques for teaching their child new skills.
- ▣ Opportunities:
 - Active engagement embedded in everyday contexts
 - Repeated, planned teaching opportunities
 - Ongoing consultation
 - In-home observations
 - Training to support
 - Individualized problem-solving
- ▣ Ongoing mental health services

Elicit and Value Parental Concerns

- ▣ All professional encounters with young children should be viewed as an opportunity to elicit developmental information

- ▣ **Advantages** (Glascoe, 1999):

- Concerns are easy to elicit
- Inquiry is brief
- Does not involve challenge of eliciting skills from young children
- Provides family-centered approach to addressing problems
- Can facilitate a wide range of options including parenting education, reassurance, referral, or further screening or developmental testing

Role of Families in Intervention

- ▣ Involvement of families in the development of very young children can occur at multiple levels:
 - Parents learn to apply skills to changing child's behavior
 - Parents' use of effective teaching methods
 - Parents' access to information and range of appropriate services
- ▣ Critically important to make information available to parents to ensure their active role in creating opportunities for engagement.

Joint Attention and Developmental Risk: Implications for Intervention

- ▣ Failure to use nonverbal behaviors to regulate social interaction.
- ▣ Lack of sharing interests and attention with others.
- ▣ Limited social-emotional reciprocity.

Joint Attention and Intervention

- ▣ Understanding early foundations of social competence: important issue for developmental science and intervention.
- ▣ One of the pivotal early experiences is the development of joint attention.
- ▣ Joint attention involves the triadic coordination of attention between self, other and third object, event, or symbol (Adamson, 1995; Tomasello, 1995; Trevathen & Aitken, 2001).

Developing Interventions

- ▣ Joint attention as a pivotal skill
 - Pivotal skill hypothesis: interventions that effectively lead to change in one or two pivotal behaviors may lead to important collateral changes in abnormal behaviors (Koegel & Frea, 1993; Koegel, Koegel & Schreibman; Whalen & Schreibman, 2003)
 - Literature suggests initiation of joint attention bids: important target for early intervention
 - Role of joint attention skill development in typical development (e.g., Moore & Dunham, 1995)
- ▣ Pivotal skill development: important indicator of individual differences among children- pivotal individual difference marker

Step	Establish shared attention	Maintain via social routines	Maintain shared attention
1	Direct another's attention to self		
2	Direct another's attention to object or event		
3	Acknowledge others call for attention		
4		Imitate	
		Answer routine questions	
5		Supply animal sounds	
6		Routine game	
7			
8			Describe joint focus
9			Discuss feelings
10			Discuss recent events
11			Discuss non present

Guidelines for Intervention

▣ Features of Intervention:

- Intervention begins early.
- Intervention is intensive in opportunity.
- Families are actively involved in their children's intervention.
- Staff are trained and specialized in early development.
- Ongoing objective assessment of child's progress in the context of the mother-child relationship.

Emily: Week 1



Emily: Week 6

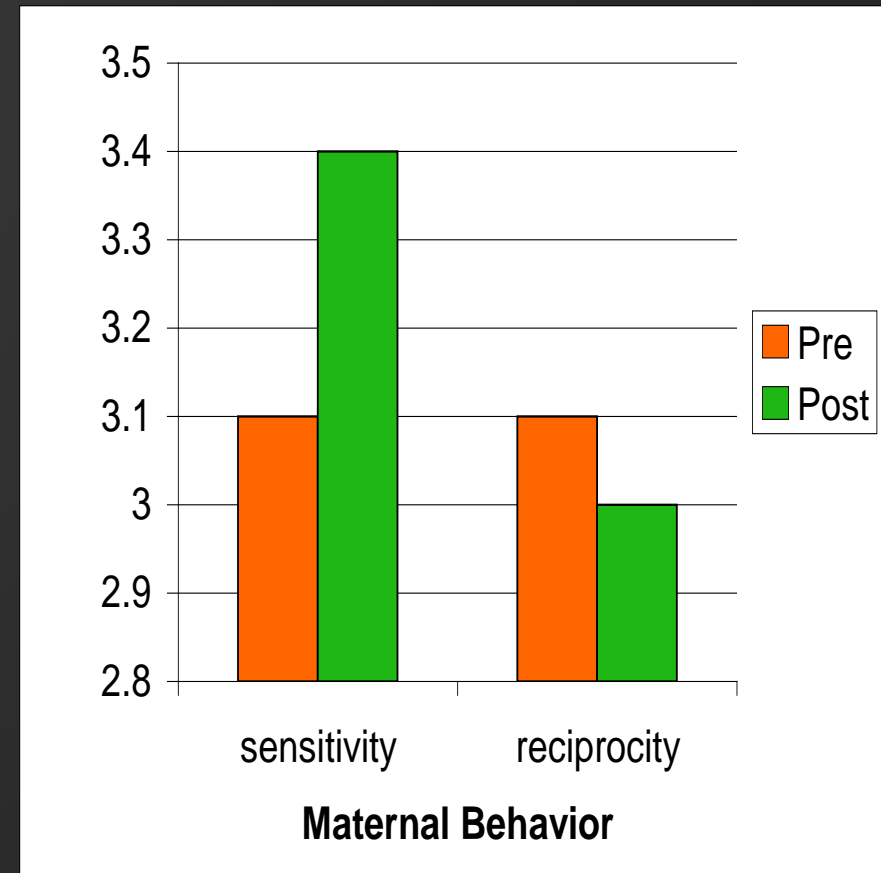
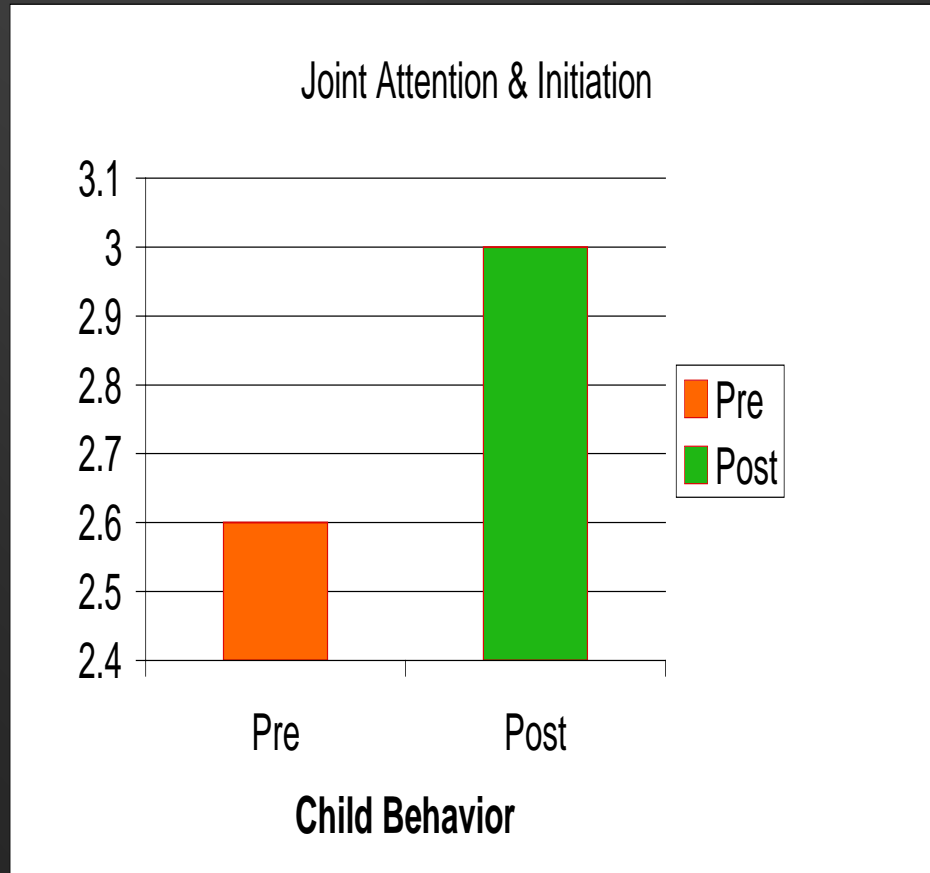


Emily: Week 16



Results

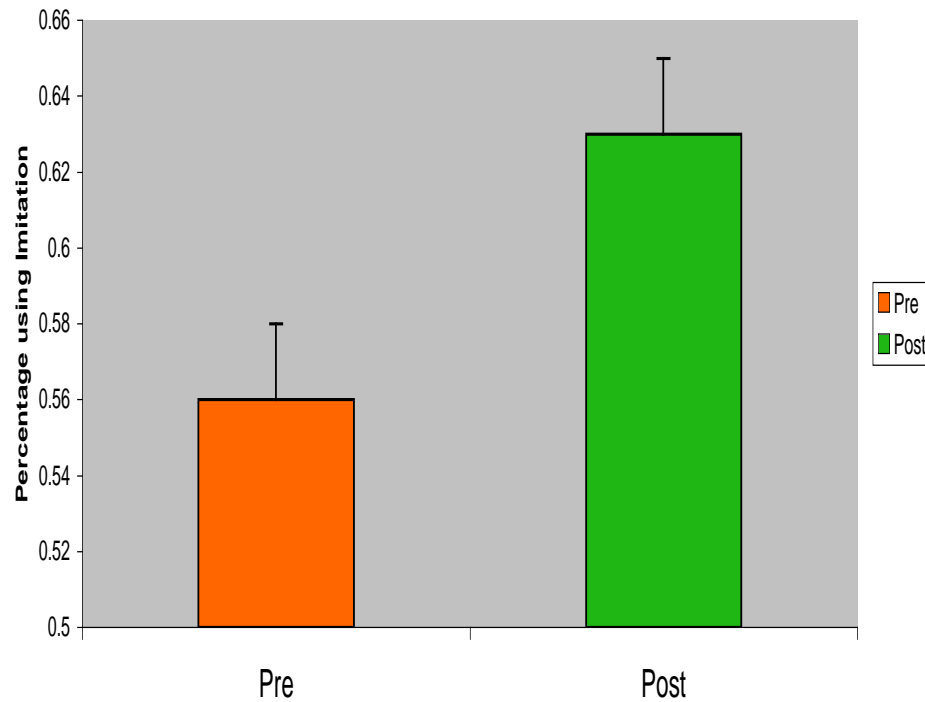
Maternal and Child Intervention Interaction Ratings



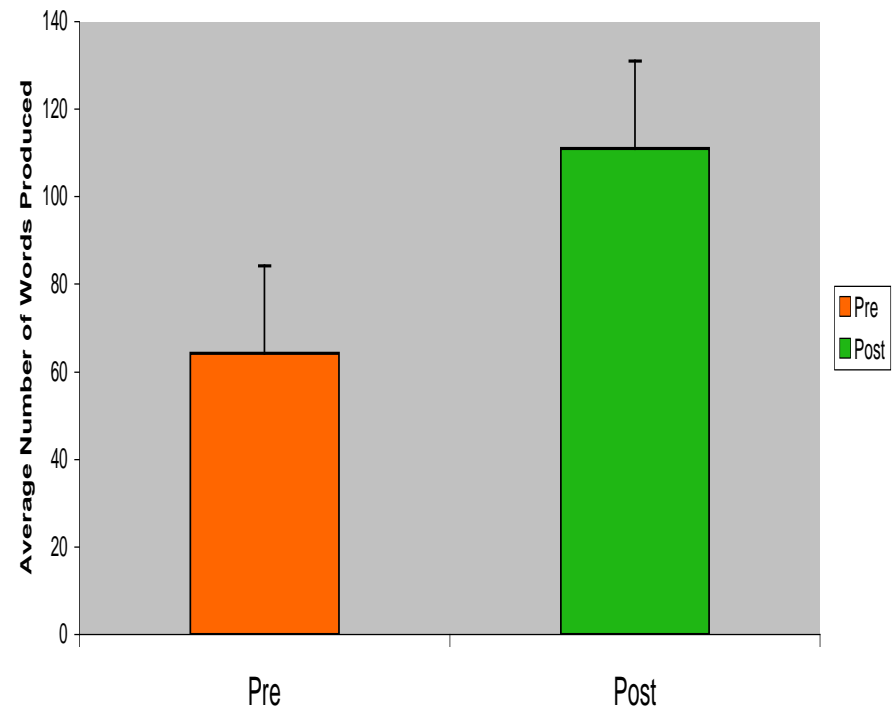
Results

Communication Development Inventory (CDI)

Use of Imitation



Words Production



Intervention In Infant Mental Health: Unpacking Developmental Pathways

- ▣ Gaps in literature regarding developmental hierarchy of a variety of joint attention behaviors and associated functions: Need documented intervention studies.
- ▣ Embedded relationship between gaze, gesture and joint attention and developmental outcomes: key in early intervention.
- ▣ Developmental profiles may elucidate specific interventions for pre-and early intentional children with at-risk developmental trajectories.

Thank You!



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