3) Effects

2) Importance

1) Typical

6) Indirect

By the end of today's workshop on communication development, assessment, and intervention for infants, toddlers, and young children, you should understand the ...

1) Typical communication behaviors of infants
2) Importance of eye gaze coupling, ritualized behavior, and game playing
3) Effects of baby talk (motherese), gaze, facial expression, facial presentation and head movement, and proxemics on the infant's development
4) Importance of joint reference, joint action, and turn-taking on the development of communication
5) Formal and informal tools used to assess the communication skills of infants, toddlers, and young children
6) Indirect and direct speech and language intervention approaches for infants, toddlers, and young children

Disclaimer

The author has no financial or non-financial interests in the information presented in this workshop.

Learning Objectives

Socialization and Early Communication
Birth to 2 Months

• 2 weeks: distinguish mother from stranger via eye gaze
• 3 weeks: social smile (versus internal state) for mother
• 1 month: interactional sequences (eye gaze and vocalizations)
• 3 – 6 weeks: smiles in response to external stimuli (human face, human voice, tickling)
• 6 weeks: changes gaze patterns based on partner's gaze

Video

Teach Me to Talk

http://www.youtube.com/watch?v=fHHcUuxabiw

1) What are your observations?
2) What is the speech-language pathologist doing to socialize and communicate with the toddler?

Socialization and Early Communication
2 Months

• Visually tracks mother’s voice; turns away from strangers
• Increase in visual memory; associates mother with feeding and demonstrates sucking
• Produces cooing when not distressed and begins making other sounds
• Mothers imitate cooing
Socialization and Early Communication
3 Months

- Larger smile; smiles less at objects
- Caregivers must exaggerate behaviors to hold infant’s attention
- Infant signals appropriateness of stimulation
- Both partners affect mutual interactions
- Increasing dialogues and turn-taking occur
- Babbling contains syllables rather than individual sounds

Socialization and Early Communication
4 Months

- Increase in alternating vocalization patterns versus concurrent vocalizations
- Caregivers pause for infant to respond
- Infant initiates vocalizations with smile or cough
- Caregiver identifies types of crying produced

Socialization and Early Communication
5-6 Months

- Facial expressions imitated by mother and infant
- Interest in toys and objects increase as eye-hand coordination improves
- Protoconversations
- Variations in vocalizations

Intentionality

- Goal directedness: ability to share goals with others, predict outcomes, encode a message for someone else
- 8-9 months: onset of intentionality through gesturing, eye contact, pointing, vocalizing
- Functions include requesting, interacting, attracting attention

Perlocutionary Stage
Birth to 8 months

- Infant fails to signal specific intentions so caregiver interprets behavior as carrying intention
- Attentional interactions
- Contingency interactions
- Differentiated interactions
- Begins reaching for desired objects; becomes a pointing gesture

Illocutionary Stage
8 – 12 Months

- Uses conventional gestures, vocalizations, or both to communicate
- Gestures accompanied by eye contact
- Consistent sounds and intonational patterns of own invention signal specific intentions
- Gradually pairs gestures with vocalizing
- Phonetically consistent forms (PCFs) emerge: infant’s own language with word boundaries
**Locutionary Stage**
12 months and up

- 1st meaningful words
- Used with or without gestures to accomplish functions previously filled by gestures

**Language Comprehension**
6-12 Months

- Attach meaning to symbols
- Use bracketing and clustering to divide speech into word units associated with familiar contexts and routines
- Bracketing
- Clustering

**Maternal Communication Behaviors**
Infant-Elicited Social Behavior

- Mothers modify their behavior to facilitate interactions
- Purpose is to enhance infant’s recognition and discrimination of infant behaviors
- Three characteristics
  - Exaggerated physical movements
  - Slow and elongated speech
  - Limited and frequently repeated repertoire of language

**Baby Talk/Motherese**

- Mothers treat any infant response as a conversational turn
- Infant learns his/her behaviors result in consistent, predictable effects and gains appreciation of signal value of behavior
- Maternal utterances often occur in episodes or strings of successive utterances referring to same object, action, or event in the here and now, facilitating comprehension

**Maternal Eye Gaze**

- Helps maintain infant’s interest and focus of attention on mother’s face
- Mother’s monitoring of infant gaze enables establishment of joint referencing

**Maternal Facial Expression**

- Complements maternal verbalizations
- Fulfills conversational functions
  - Initiation
  - Maintenance
  - Termination
  - Avoidance of interaction
- Maintains attention and aids comprehension
Maternal Proxemics

- Communicative use of personal space
- Very close distance used with infants
- Distance increases with age
- Decreased touching associated with increased eye contact

Joint Referencing
Phase 1: Birth to 6 Months

- 4 – 6 weeks: caregiver places object in infant’s field of vision and says “look”
- 8 weeks: infant visually follows caregiver’s movements
- 12 weeks: infant attends to utterances addressed to him/her
- 4 months: infant follows line of regard
- 6 months: infant may respond to object or name or intonational pattern to establish joint attention

Joint Referencing
Phase 2: 6-8 Months

Intention to Communicate

- 7 months: infant points or shows objects or events without looking at adult
- 8 months: infant points or shows objects or events and shifts gaze between object and caregiver
- Shift from social mode to activity mode

Joint Referencing
Phase 3

- Gestures and Vocalization
  (8 – 12 months)
  - Paring pointing with vocalizing
  - Maternal comments based on infant’s actions or interest and positively related to better comprehension later

Joint Referencing
Phase 4

- Naming and Topicalization
  (12 months)
  - Exchanges involve objects; mother elicits naming with questions, modeling, repetition
  - As infant assumes more control, maternal questioning decreases

Joint Action

- Routinized activities such as game playing and daily routines
- Provide structure for learning language
- Provide means to learn turn-taking, role shifting, and conversational exchange

Game Playing

- Begins at birth
- 6 weeks: infant initiates games by internal alertness
- 12 weeks: infant signals readiness to play games via facial expression and body movement
- Maternal modifications to infant state
  - Adjusts timing to when infant alert
  - Moderates infant arousal to optimal state
  - Balances game playing with infant behavior
Social Play

- Birth to 6 months: social play without game rules
  - Peek-a-boo

- 6 – 12 months: object play increases
  - Give and take games
  - Retrieve games
  - “So big”
  - “I’m gunna get you”

Routines

- Examples: eating, bathing, dressing, diaper changing
- Offer conventionalized, predictable, ordered contexts
- Infant relies on order and caregiver cues to direct behavior
- Scripts have slots for infant behavior to aid interpretation of routine
- Infants learn the scripts which allows for greater participation
- Allows infant to gain event knowledge which is later translated into semantic knowledge of early language
  - World knowledge becomes word knowledge

Turn Taking

- Occurs throughout interactional behaviors
  - Early feeding
  - Body games
  - Protoconversations

Infant Communication Development

Conclusions...

1) Infants increasingly acquire intentional behaviors which serve communication functions.
2) Mothers perceive infant behaviors as communicative, verbal, and meaningful.
3) Social interactions provide a basis for learning semantic structure and pragmatic functions.
4) Joint attending provides a referencing function.
5) Maternal responsiveness to infant behaviors facilitate the development of intentionality and language.
6) Communication skills develop as a result of maternal-infant dyads.
7) The social and communicative bases for language development can partially explain the motivation for learning lipTech and language. (Owens, 2016)

Communication Assessment

Infants, Toddlers and Young Children

Red Flags

- Pragmatic delay (e.g. difficulty with gestures/symbolic gestures, joint attention, interpreting)
- Receptive language delay (e.g. difficulty following simple requests or understanding very early vocabulary)
- Expressive language delay (e.g. limited or no word production)
- Phonological delay (e.g. quiet, limited phonostr /Inventory, limited complexity of labeling)
- Pragmatic delay (e.g. difficulties with eye contact, taking turns, maintaining topics)
- Behavior issues (e.g. high activity level, poor attention span, limited compliance) (Rescorla & Dale, 2013)
Speech and Language Assessment Procedures

1. Background history; prior records of early intervention services (e.g., IFSP)
2. Parent report information (why?)
3. Formal comprehensive assessment of receptive and expressive language, speech production, oral-motor and feeding, and pragmatic skills with caregiver in room
4. Informal assessment of receptive and expressive language, speech production, oral-motor and feeding, and pragmatic skills

(Shipley & McAfee, 2016)

Receptive-Expressive Emergent Language Test – Third Edition

- Authors: Bresch & League (2003)
- Parent report assessment tool
- Normed on infants and toddlers ages birth to 3 years
- Receptive and expressive language subtests
- Receptive language ability (RLA), expressive language ability (ELA), and language ability score (LAS)
- Standard scores, percentile ranks, age equivalents, descriptive ratings

MacArthur-Bates Communicative Development Inventories (CDIs), Second Edition

- Authors: Fenson, Pethick, Thal, Dale, Reznick & Bates (2003)
- English and Spanish versions
- Observational tool completed by caregiver
- Words and gestures form: documents understanding and use of early vocabulary by semantic category, as well as use of nonverbal and symbolic gestures for ages 6-24 mos.
- Words and sentences form: documents production of vocabulary and early grammar for ages 16-30 mos.
- CD-R: revision of expressive vocabulary and grammar for 18-37 mos.
- Excellent for use with older children who have developmental delays, including children who benefit from AAC

The Rossetti Infant-Toddler Language Scale

- Author: Louis Rossetti (2005)
- Play based formal assessment tool
- Toddlers ages birth to 3 years
- Criterion-referenced with developmental ages and severity ratings provided
- English and Spanish versions
- Assesses preverbal and verbal areas of:
  - Interaction-Attachment
  - Gesturing
  - Play
  - Language Comprehension
  - Language Expression

Preschool Language Scale – 5th Edition

- Authors: Zimmernan, Steiner, & Fend
- English Version (2011)
- Spanish Version (2012)
- Play based assessment tool with picture manual and manipulatives
- Normed on ages birth to 7:11
- Auditory Comprehension (AC), Expressive Communication (EC), and Total Language Score (TLS)
- Supplemental measures for Pre-Linguistic Screener and Language Sample Checklist
- Standard scores, percentile ranks, and age equivalents

Informal Assessment

- Behavioral observations of the child during play
- Parent-child interactions
- Spontaneous speech and language sampling and analysis
- Informal assessment of oral-motor and feeding skills
- Informal assessment of pragmatic skills

(Shipley & McAfee, 2016)
Assessment Recommendations

- No intervention or follow-up needed
- No intervention with follow-up
  - Provide home program
  - Re-evaluate in 6 or 12 months
  - May recommend/placement in home/toddler center-based program
- Speech and language therapy recommended
  - Frequency (e.g. 1 or 2 times per week)
  - Length of time (e.g. 30 excuse sessions)
  - Duration (e.g. 6 months, 12 months)
- Additional recommendations
  - Speech-language pathologist, audiologist, psychologist, physical therapist, occupational therapist, infant/toddler program
- Factors regarding recommendations
  - Regional/timer eligibility criteria
  - Insurance coverage
  - Venker & McIlveen (2016)

More Speech and Language Therapy Goals and Objectives

- Phonology goals and objectives re: intelligibility and/or sound production
  - Increased vocalization
  - Increased vocabulary
  - Increased phonemic inventory
  - Improved production of specific sounds
  - Elimination of specific phonological process errors
- Pragmatic 6-month goal and objectives
  - Eye contact
  - Joint attending
  - Turn-taking
- Parent training and education goals:
  - Speech and language modeling skills
  - Interactive/language skills
  - Solomon-Rice 2017
  - Venker, Roberston 2017

Caregiver Training and Education Responsibility Education

1) Child-oriented behaviors to initiate interactions
   - Wait and listen
   - Follow the child’s lead
   - Join in and play
   - Be facial to face
2) Interaction-promoting strategies to foster balanced turn-taking
   - Use a variety of questions
   - Encourage turn-taking
   - Sustain mutual turns with child’s turns
3) Language modeling strategies to expand receptive/exppressive language
   - Initiate child’s verbalizations
   - Use a variety of labels
   - Expand on what the child says
   - Extend the topic
   - Weisman, Godinette & Drake (2017)

Speech and Language Therapy Goals and Objectives

- Receptive language 6-month goal/objectives
  - Early vocabulary
  - Early concepts
  - Following one-step and two-step directions
- Expressive language 6-month goal/objectives
  - Pre-linguistic skills for eye gaze
  - Joint attention
  - Turn-taking
  - Two-word combinations
  - 3-4 word combinations
  - Early morpho-syntactic structures
  -Transitions (Kumin, 2015; Roth & Worthington, 2016)

Types of Service Delivery

- Caregiver training and education without direct intervention with infant/toddler
- Caregiver training and education plus direct clinical interaction with infant/toddler
- Other possible service delivery decisions
  - Individual versus group services
  - Home and/or center-based services
  - School-based services
  - Private services

Direct Intervention Focused Stimulation

- Exposure to multiple examples of targeted specific words and grammatical constructions within meaningful interactions
- Two versions
  - Expected to produce constructions
  - Not obligated to produce constructions
- Imitation not used; attempt to elicit spontaneous productions
- Targeted language practiced a minimum of 10 times per session in natural conversational contexts
- If expected to produce constructions, child is prompted by direct requests to label object during games for a more natural context
- If not obligated to produce constructions, spontaneous production of target is positively reinforced
  - Weisman, Venker & Roberston, 2017
Direct Intervention
Conversational Recast Intervention

- Can be combined with focused stimulation
- Recasts: language model expansions, e.g. child says “cow”; adult recast consists of “cow jump; the cow is jumping”
- Target specific vocabulary and grammatical forms
- Frequency of modeling of linguistic targets is increased

Speech and Language Therapy
Conclusions...

- Best Practices for Speech and Language Therapy with Infants/Toddlers/Young Children
  - Adult modeling of speech and language stimulus
  - Child imitation of speech and language stimulus
  - Positive and specific reinforcement
  - Speech and language training at a level slightly more complex than the child’s current level
  - Engagement in contextually based social routines and scripts (e.g. storybook reading, preferred play scenarios, preferred games)
  - Active engagement with the adult communication partner
  - Scaffolding to support speech and language attempts
  - Collaboration with adult caregivers via indirect therapy

References


References cont.


Thank you!

Questions?

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