Presenter

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Today’s Topics

• Description of assessments
  • Kent Inventory of Developmental Skills
  • Minnesota Child Development Inventory
  • MacArthur-Bates Communicative Development Inventories

• Determining age scores and percentiles
• Interpretation and use of assessment results
Assessment Instruments

Kent Inventory of Developmental Skills
Description of the Kent

- Age range: 1 to 14 months
- Parent report
- Inter-disciplinary developmental assessment
- 252 items total
- Format similar to Minnesota Child Development Inventory but assesses earlier developing skills
Domains Assessed

- Self-Help
- Social
- Motor
- Cognitive
- Communication
- General Development
  - Composite score
  - Selected items from all subscales
Sample Questions

- Rolls easily from back to stomach
- Reacts to peek-a-boo games
- Shakes head “no”
- Walks, holding onto furniture
- Waves “bye-bye” at the right time
- Enjoys dropping toys, to be picked up by adult
Administration of the Kent

Parents circle

\( Y \) if child can perform the behavior

\( U \) if child used to perform the behavior, but has outgrown it

\( N \) if child is not yet able to perform the behavior
Information Provided

- Developmental Age Scores
- Standard Scores
  - Std score of 100 means CA = Developmental Age
  - Std scores of 80 and above are typically considered to be in the average range
- Profile Sheet showing developmental age scores relative to chronological age
Scoring

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Assessment Instruments

Minnesota Child Development Inventory
Age Range

- 12 months to 6 years
- Expressive language most sensitive from 15 months to 3½ years
- Language Comprehension most sensitive from 12 months to 3½ years
Description of the Minnesota CDI

- Parent report
- Inter-disciplinary developmental assessment
- 313 items total
- Format similar to Kent but assesses later developing skills
Administration of the Minn CDI

- Parent report
  - Parents respond “yes” or “no” to a variety of statements about their child
  - Example: “Has a vocabulary of 20 or more words”
Domains Assessed

- Social
- Self Help
- Gross Motor
- Fine Motor
- Expressive Language
- Language Comprehension
  - Actually comprehension, expression, and cognitive-linguistic skills
Domains Assessed (cont.)

- Letters
- Numbers
- Situation Comprehension (on CU version – taken from 1974 version of Minnesota)
- General Development
  - Composite score
  - Selected items from all subscales
Sample Questions

- Asks for help in doing things
- Feeds self with a spoon
- Throws a ball while standing
- Scribbles with a crayon or pencil
- Uses the word “you” in sentences
- Uses the words “today,” “yesterday,” and “tomorrow” correctly
CU Adaptations

• Based on original adaptations made at Gallaudet
• Clarification that sign or spoken language is acceptable
• ASL equivalents on grammar items
• Some auditory items adapted to include a visual counterpart
Scoring

- Age scores assigned on each subscale
- Plotted on a profile sheet relative to:
  - Chronological Age
  - Borderline delay (20% below CA)
  - Significant delay (30% below CA)
Scoring

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Which Developmental Assessment to Use?

Minnesota or Kent?

• If a child is 13 months of age or younger, the Kent is more appropriate and will give you more information.

• For a child with multiple issues, use the developmental -- not chronological -- age when choosing the appropriate assessment.
Use of Results: Minn and Kent

- Identifies children functioning within vs. below average range
- Age scores are typically easily understood by parents
- Easy to monitor progress over time
- On Minnesota: Self Help and Situation Comprehension provide estimate of non-verbal cognition
Use of Results: Minn and Kent

• Profile sheet provides a visual display of areas of strength and limitations
  • Are scores consistent across developmental domains or varied?
  • Alerts interventionist to possible need for referral to other disciplines
Use of Results: Minn and Kent

Manual lists items in developmental order and the expected age of attainment


- Identify specific items where child is delayed
- Identify “next steps” in a variety of skill areas
Cautions in Interpretation of Low Scores on Kent

If a child has feeding issues, e.g. is g-tube fed, he will likely score low on self-help as many of the items are linked to feeding behaviors. Communication subscale contains many auditory elements. This will impact score of child with limited auditory skills. Difficult at this young age (<12 months) to know how much delay is cause for concern.
Assessment Instruments

MacArthur-Bates Communicative Development Inventories
Inventories and Age Ranges

- **Words and Gestures**
  8 to 18 months language level
- **Words and Sentences**
  16 to 30 months language level
Selecting Appropriate Form

For boys -- expressive vocabulary is:
0 to 49 words – Words and Gestures
50+ words – Words and Sentences

For girls -- expressive vocabulary is:
0 to 69 words – Words and Gestures
70+ words – Words and Sentences
Words and Gestures

- 8 to 18 months language level
- Areas assessed
  - Comprehension of phrases
  - Vocabulary comprehension
  - Expressive vocabulary (396 words)
  - Communicative gestures
  - Symbolic gestures/pretend play
Words and Sentences

- 16 to 30 months language level
- Areas assessed
  - Expressive vocabulary (680 words)
  - Semantic functions (how child uses words)
  - Word endings
  - Irregular nouns and verbs
  - Sentence length/complexity
Instructions to Parents

• Check the words your child say/signs spontaneously – if they only imitate the word, do not check it
• Check a word even if your child does not pronounce/sign it perfectly
Discussing Inconsistencies

• Opportunity to learn something you may have been unaware of

• Opportunity to improve parents’ observational skills of child’s language
  • “I see you marked that Anna says ‘now’. Can you give me an example of a situation when she said/signed that word?”
Scoring

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Scoring the MacArthur

- **Percentile Rank**
  - Can only be determined if the form is completed that is right for their chronological age
  - Percentile = percentage of children the same age as your child who scored lower than your child
    - 50th percentile = right on track
    - < 10th percentile = significant delay
Scoring the MacArthur

• Age Score
  • Can be determined for all children even if the form outside their age range is used
  • Find the closest score to your child’s raw score on the 50th percentile line
  • Go straight up the column to find the child’s language age score
Interpreting Results

Compare subscale scores

- Hearing children typically show approximately equivalent scores across all sections
Interpreting Results

• Comprehension vs. production
  - If delays exist in both, more significant problem than if only production delays
Interpreting Results

- Gestures vs. linguistic items
  - Gestures often indication of more general cognitive ability
    - Cognitive red flag if gesture scores are substantially below CA
  - Cognition should predict linguistic ability
    - Language red flag if gesture scores significantly exceed linguistic scores
Interpreting Results

- Single words vs. word combinations
  - By the time child produces 50 words, word combinations are expected
- Use of irregular forms (e.g., men, ran)
  - Expected at about 2 years of age
  - Not relevant to families using ASL only
Using Results to Guide Intervention

- Evaluate communication approach being used (# of words signed vs. spoken)
- Provide parent education
  - significance of vocabulary development for future academic success
  - Importance of having more than labels (nouns)
  - Setting the bar
Using Results to Guide Intervention

• Setting the Bar: Information from normative tables can help interventionists and parents understand the magnitude of vocabulary growth needed per month:
  ➢ From 16 to 30 months children learn to produce an average of 37 words a month.
Using Results to Guide Intervention

- Obtain ratio of nouns to “other” words
  - Should be between .3 and .6
  - That is, for every 10 nouns a child produces, he/she typically produces between 3 and 6 other types of words
  - Deaf/hoh children are often “noun heavy”
  - Focus on vocabulary in semantic categories where child’s scores are low
Using Results to Guide Intervention

- To see which words are typically known at each age level go to:
  - www.sci.sdsu.edu/cdi/lexical_e.htm
  - Lists the percentage of children comprehending or producing each individual word at each age
- Can search database by age level, semantic category, specific words, or word frequency