More than Checking the Box: Mining Assessments to Drive Early Intervention

EHDI

March 13, 2016

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Today's Topics

- Describe three assessments that are appropriate for children who are d/hoh, birth to 3

- Discuss interpretation of assessment results

- Practice and describe how to use assessment results to develop goals

Assessments

- Child Development Inventory (the "Minnesota")
- MacArthur Communicative Development Inventories
- Play Assessment Questionnaire

Assessment Instrument

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

General Description

- Parent report
  - Parents respond "yes" or "no" to a variety of statements about their child
  - Example: "Has a vocabulary of 20 or more words"
- 9 areas of development assessed
- Summary score "general development"

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

Areas Assessed

- Social
- Self Help
- Gross Motor
- Fine Motor
- Expressive Language
- Language Comprehension

Areas Assessed (cont.)

- Letters
- Numbers
- Situation Comprehension (from 1974 version)
- General Development
  - Composite score
  - Selected items from all subscales

Expressive Language Subscale

- Primarily concrete, surface-structure aspects of language (vocab and grammar)
- For example:
  - Says/signs at least 10 words
  - Says/signs "please" and "thank you"
  - Talks in sentences at least 4 words long
  - Talks with words in the correct order

Language Comprehension Subscale

- Comprehension + cognitive-linguistic and complex expressive language
- For example:
  - Understands the meaning of "up" and "down"
  - Says when something is heavy
  - Answers questions like "What do you do with a …cracker …hat …a glass?"
  - Uses descriptive words (e.g., "small", "red", "good", "funny")

Scoring

- Age scores assigned on each subscale
- Plotted on a profile sheet relative to
  - Chronological Age
  - Borderline delay (20% below CA)
    - ➢ 1.3 standard deviations from the mean
    - ➢ Below the 10th %ile
  - Significant delay (30% below CA)
    - ➢ 2.0 standard deviations from the mean
    - ➢ Below the 3rd %ile
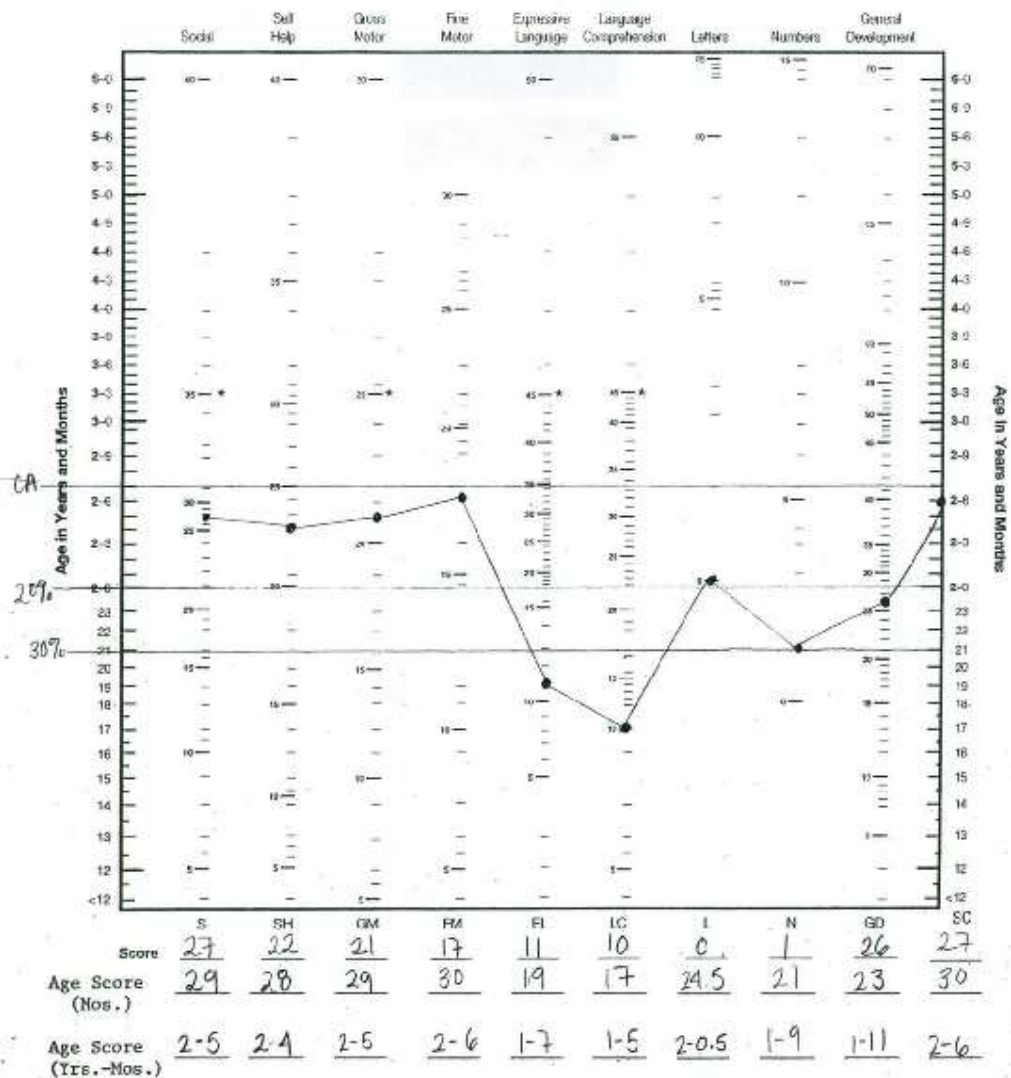
Child Development Inventory Profile

Jedi

Name _____   Date Completed 9/30/10 Age 31

Birthdate _____   Sex M

	S	SH	GM	FM	EL	LC	L	N	GD	SC
Score	27	22	21	17	11	10	0	1	26	27
Age Score (Nos.)	29	28	29	30	19	17	24.5	21	23	30
Age Score (Yrs.-Mos.)	2-5	2-4	2-5	2-6	1-7	1-5	2-0.5	1-9	1-11	2-6

Use of Results

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

Use of Results (cont.)

- 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 (cont.)

- Parent education
  - Parent "buy in" because they provided the data
  - Often points to the "elephant in the room"

Use of Results (cont.)

In conjunction with handout listing items in developmental order:

- Identify specific items where child is delayed
    - Delay or lack of opportunity?
    - Does lack of a single skill dramatically impact score? (e.g., feeding)
- Identify "next steps" in a variety of skill areas

Assessment Instrument

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

Girl's expressive vocabulary is:

    0 to 69 words – Words and Gestures

    70+ words – Words and Sentences

Boy's expressive vocabulary is:

    0 to 49 words – Words and Gestures

    50+ 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

- Can rely only on instructions on form
- Can provide supplemental instructions
    - Verbally
    - In writing
- Words and Sentences: Go over section where parent picks one of two sentences varying in complexity (often misunderstood)

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?"

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

Interpreting "often", "sometimes", "not yet" items

- Using the tables in the manual (see handouts):
  - Compare child's status with percentage of age-mates who received an "often" or "sometimes" response

Using Results to Guide Intervention

- Assessment results provide data needed to advocate for appropriate IFSP goals

- Measureable goals are possible because child is assessed at regular intervals

- Track child's progress over time
  - Vocabulary size growth
  - Months of development

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
  - 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

- Setting the Bar: Language demands increase exponentially after 18 mos of age
  - Average expressive vocabulary size at:
    - ➤ 12 months = 5 words
    - ➤ 18 months = 85 words
    - ➤ 24 months = 300 words

Using Results to Guide Intervention

- Obtain ratio of nouns to "other" words (see handout)
  - 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:
  - ➢ http://wordbank.stanford.edu/
- 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

Assessment Instrument

Play Assessment
Questionnaire

Importance of Assessing Play

- Development of a child's thinking skills is connected to development of play skills

- Importance of play as a natural context for development of cognition

- Correlation between play skills and the development of Theory of Mind

General Description

- Age range: 1 months to 36 months

- Completed through discussion between parents and interventionist
  - Examples of play based on toys that most children have.
    - "Y-yes" if your child plays in the way described
    - "N-no" if you have not seen your child perform any actions like those described, or
    - "H-with help" if your child does any one of these or similar activities but only if you first show him/her

General Description

- Examples:
  - "Have you ever seen your baby pick up a toy just to look at it?"
  - "Has your child ever used one object to be something else in play?"
  - "Has your child ever done a sequence of three or more related actions?"

Scoring

- 3 consecutive correct is the basal
- 3 consecutive wrong is the ceiling
- Age score is based on the number of "yes" responses
- Additional age score based on "yes" + "help" responses

Emma CA 18 months

PAQ

- Age Score based on "yes" responses = 12 mo, based on "yes" + "help" responses = 13 mo

CDI/Minnesota

- Self Help = 12 mo, Language Comprehension = 12 mo, Situational Comprehension = 12 mo

MacArthur: Words and Gestures

- Phrases Understood = 13 mo, Words Understood = 12 mo, Words Produced = 12 mo, Early Gestures = 12 mo, Later gestures = 13 mo

Nicholas CA 27 months

PAQ

- Age Score based on "yes" responses = 28 mo, based on "yes" + "help" responses = 29 mo

CDI/Minnesota

- Expressive Language = 20 mo, Language Comprehension = 18 mo

MacArthur: Words and Sentences

- Words Produced = 20 mo

  Irregular Nouns and Verbs Produced = 16-21 mo

Using Multiple Assessments to View the Whole Child

- No single assessment tells the whole picture!
- Cognitive Ability
  - Play Assessment Questionnaire
  - Minnesota CDI: Situation Comprehension
  - Minnesota CDI: Self Help
- Minnesota CDI – general questions re: language
- MacArthur – very specific questions

Wrapping It Up:
Case Study - A.P. 21 months

- Initial Child Find evaluation (DAYC-2)
  - Expressive lang: significant delay
    - 12 month level
  - Receptive lang: significant delay
    - 11 month level
  - Age appropriate skills: motor, self help, social/emotional and cognitive

A.P. – 27 month summary

Strengths

- Rapid progress in language skills
- Wearing amplification more consistently

Needing Support

- Vocabulary development
- Auditory discrimination & comprehension
- Motor skills

A.P. – 33 month summary

Strengths

- Cognitive and social skills
- Length of utterance is slowly increasing
- Types of words is increasing

Needing Support

- Vocabulary gap is increasing
- Sensory issues
- Complexity of language
- Auditory discrimination & comprehension