An Introduction to the DIAL-4 and Speed

Top Ten Predictors for Identifying Young Children At Risk

What are they?
(Hint: They are covered in the DIAL-4!)

What will we review about the DIAL-4?

• Goals in development of DIAL-4
• Main features/purpose of the DIAL-4
• Sample items
• Introduction to interpretation of results
Development Goals

- Items:
  - must be developmentally appropriate for children ages 2:6 to 5:11.
  - should be precursors of school success.
  - should have a low enough floor for the younger children.

- Items:
  - should be easy to administer and unambiguous to score.
  - be as similar as possible on the English and Spanish versions.
- A majority of the items should cover the entire age range.
- Administration time should be limited to 10-15 minutes for each Area.

DIAL-4 Quick Facts

- A revision of the DIAL-3, which is an individually administered developmental screening test designed to identify young children in need of further diagnostic assessment
  - Appropriate for children ages 2:6 through 5:11
  - Administration Time 30 to 45 minutes
  - English and Spanish versions
- Screens in five areas in both the English and Spanish versions
  - Motor
  - Concepts
  - Language
  - Self-Help Development
  - Social–Emotional Development
  - Performance-based measures
  - Ratings based on teacher/caregiver observation
DIAL-4 Quick Facts

- Each performance area provides a rating scale of psychosocial behaviors that must be observed during the screening to help determine if the child is in need of further assessment in that domain (Behavioral Observations).
- The Speed DIAL-4 contains a subset of items from the DIAL-4 test that can be administered in approximately 20 minutes.

Aligned with NEGP, NAEYC, & Head Start

DIAL-4 Components
Calculating the Motor Area Total Score

Motor Area Total Score

2 + 5 + 3 + 5 + 5 + 2 = 25

Administering the Concepts Area

Concepts Area Behavioral Observations

An Introduction to Scoring and Interpretation

Making a Decision
(Potential Delay or OK)

Selecting a Cutoff

<table>
<thead>
<tr>
<th>Percent (%)</th>
<th>Standard Deviation (SD) below the mean</th>
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<tbody>
<tr>
<td>16</td>
<td>1</td>
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<tr>
<td>10</td>
<td>1.3</td>
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<tr>
<td>7</td>
<td>1.5</td>
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<tr>
<td>5</td>
<td>1.7</td>
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<tr>
<td>2</td>
<td>2</td>
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Important Information Regarding Results

- Sensitivity is the proportion of those children at the extreme end of the continuum (Potential Delay category) who were identified as such in the screening process.
- Specificity refers to the proportion of those children in the OK category who were identified as OK in the screening process.
- Agreement Index refers to the percentage of children for whom the screening decision was correct, whether at the extreme or in the OK range.

These three indices are the best way to determine the extent to which a screening test is doing what it is supposed to do: separating children at the extreme end (potential learning delays) from children who perform in a more typical manner.

Important Information Regarding Results

- Screening programs are never perfectly accurate,
  - there will always be underreferrals (i.e., children who should have been identified as Potential Delay but weren't) and
  - overreferrals (i.e., children who shouldn't have been identified as Potential Delay but were).
- Selecting an appropriate cutoff level and the choice of a criterion (e.g., results of diagnostic evaluation, success in classroom, etc.) influence the sensitivity and specificity of your screening process.

Sensitivity and Specificity

- DIAL-4 Motor Area/Physical Impairment Group
  - Sensitivity=.76
  - Specificity=.86
  - Agreement Index=.81
- DIAL-4 Total/Developmental Delay Group
  - Sensitivity=.73
  - Specificity=.83
  - Agreement Index=.78
- DIAL-4 PQ Self-Help Development/Autism Group
  - Sensitivity=.82
  - Specificity=.82
  - Agreement Index=.82
One Set of Norms- English-Spanish Equating Process

- Decision in development process – one set of norms
- Separate Spanish norms would not be created for the following reasons:
  - For districts serving children who speak a number of languages, a single standard for all students usually needed and often is mandated.
  - Due to many factors related to SES and education, if there were different norm sets, many Spanish-speaking children would not be considered as needing further assessment or intervention resources, when in comparison with the English-speaking population they clearly have special needs.

One Set of Norms: The English-Spanish Equating Process

- Solution: Equated Tests.
  - The scores of the 13% of Spanish cases in the norm sample were linked to the same scale as the other 87% of English cases in the norm sample.
  - This norm sample was used for developing a single set of norms which reflects the performance standards set for the general U.S population that includes both English-speaking and Spanish-speaking/bilingual children of Hispanic origin.
  - This procedure enables a Spanish-speaking child’s performance to be compared to the national norm for all children in the United States, in the same way that English-speaking children’s performance would be normatively evaluated.

Communicating to Parents
Interpreting Results

OK Results

What was on your “Top 10?”

- Poor letter-naming ability
- Poor phonological awareness skills
- Difficulty in naming known objects quickly (R.A.N.)*
- Poor articulation
- Extremely restless & easily distracted
- Slow vocabulary growth
- Talked late as compared to age peers
- Difficulties interacting with peers
- Clumsy (gross and/or fine motor)
- Difficulties following directions or routines

*Based on very recent research, math skills were shown to also be very predictive.

Questions

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Or Contact a Consultant to request training