Spanish Edition

The Spanish edition of Boehm–3 Preschool has been enhanced through:

- Concurrent development of English/Spanish norms
- Dual English/Spanish Record Form
- Concurrent development of English/Spanish norms
- Observation and Intervention Planning Form included as
- Children Without Receptive Language Disorder
- Children With Receptive Language Disorder
- Parent Education Level
- Parent Years of Education
- Total
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National norms were developed by administering the test to children beginning in September 1999. The Boehm–3 sample was designed to replicate the U.S. population, stratified by parent education level used as a measure of socioeconomic level. Children who were diagnosed with a disorder and/or were receiving special services comprised 11% of the standardization sample. The selection process for test items included evaluation of p-values (percent of children passing), item difficulties, item correlation, and bias.

Relevant Coefficients, Means, and Standards Deviations

<table>
<thead>
<tr>
<th>First setting</th>
<th>4-0 to 4-11</th>
<th>4-0 to 5-11</th>
<th>Overall</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>40.76</td>
<td>40.91</td>
<td>41.12</td>
</tr>
<tr>
<td>SD</td>
<td>9.31</td>
<td>8.31</td>
<td>8.33</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Second setting</th>
<th>4-0 to 4-11</th>
<th>4-0 to 5-11</th>
<th>Overall</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>40.72</td>
<td>40.87</td>
<td>40.75</td>
</tr>
<tr>
<td>SD</td>
<td>9.28</td>
<td>8.28</td>
<td>9.21</td>
</tr>
</tbody>
</table>

The correlation between Boehm–3 Preschool and Bracken Basic Concepts Scale–Revised test raw scores (n = 62)

<table>
<thead>
<tr>
<th>Means, Standard Deviations, and Correlations Between Boehm–3 Preschool and Bracken–Basic Concepts Scale–Revised Total Test Raw Scores (n = 62)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assessments</td>
</tr>
<tr>
<td>-------------</td>
</tr>
<tr>
<td>Preschool</td>
</tr>
<tr>
<td>Scale–Revised</td>
</tr>
</tbody>
</table>

The correlation between Boehm–3 Preschool and Bracken Basic Concepts Scale–Revised is.80 for 3-year-olds and .73 for 5-year-olds. It may be inferred that both tests measure nearly the same aspects of the construct of basic concepts.

Means and Standard Deviations of Boehm–3 Preschool Raw Scores for a Matched Set of Children Without Receptive Language Disorder and Children With a Receptive Language Disorder (n = 239)

<table>
<thead>
<tr>
<th>Assessments</th>
<th>n</th>
<th>Mean</th>
<th>SD</th>
<th>r</th>
</tr>
</thead>
<tbody>
<tr>
<td>Preschool</td>
<td>29</td>
<td>102.0</td>
<td>25.3</td>
<td>0.99</td>
</tr>
<tr>
<td>Scale–Revised</td>
<td>29</td>
<td>220.0</td>
<td>67.8</td>
<td>0.54</td>
</tr>
</tbody>
</table>

References

Validity evidence based on relationship of other variables was compiled. The study involved the relationship between performance on the raw scores of the test and the American Council on Education’s Pupil Personnel Record 1999. To test the discriminability of the two groups, the test was administered to two groups of children, one with a receptive language disorder and the other with a normal language disorder. The results show that the test was able to discriminate between the two groups and that it was able to identify the disordered population from the non-disordered population. The correlation between the Boehm–3 Preschool and the Bracken Basic Concepts Scale–Revised Total Test Raw Scores (n = 59)

<table>
<thead>
<tr>
<th>Assessments</th>
<th>n</th>
<th>Mean</th>
<th>SD</th>
<th>r</th>
</tr>
</thead>
<tbody>
<tr>
<td>Preschool</td>
<td>39</td>
<td>37.7</td>
<td>7.3</td>
<td>0.84</td>
</tr>
<tr>
<td>Scale–Revised</td>
<td>39</td>
<td>63.5</td>
<td>9.0</td>
<td>0.83</td>
</tr>
</tbody>
</table>

Children Without Receptive Language Disorder

<table>
<thead>
<tr>
<th>Assessments</th>
<th>n</th>
<th>Mean</th>
<th>SD</th>
<th>r</th>
</tr>
</thead>
<tbody>
<tr>
<td>Preschool</td>
<td>30</td>
<td>33.1</td>
<td>5.3</td>
<td>0.69</td>
</tr>
<tr>
<td>Scale–Revised</td>
<td>30</td>
<td>38.2</td>
<td>6.2</td>
<td>0.83</td>
</tr>
</tbody>
</table>

Children With Receptive Language Disorder

<table>
<thead>
<tr>
<th>Assessments</th>
<th>n</th>
<th>Mean</th>
<th>SD</th>
<th>r</th>
</tr>
</thead>
<tbody>
<tr>
<td>Preschool</td>
<td>30</td>
<td>23.5</td>
<td>3.2</td>
<td>0.95</td>
</tr>
<tr>
<td>Scale–Revised</td>
<td>30</td>
<td>19.0</td>
<td>1.9</td>
<td>0.99</td>
</tr>
</tbody>
</table>

A study was conducted to determine the degree to which the Boehm–3 Preschool raw scores differ among two groups of children. The study involved the comparison of the Boehm–3 Preschool Total Test Raw Scores (n = 51) and the Bracken Basic Concepts Scale–Revised Total Test Raw Scores (n = 51) of two groups of children, the one with a receptive language disorder and the other with a normal language disorder. The results show that the test was able to discriminate between the two groups and that it was able to identify the disordered population from the non-disordered population. The correlation between the Boehm–3 Preschool and the Bracken Basic Concepts Scale–Revised Total Test Raw Scores (n = 59)

<table>
<thead>
<tr>
<th>Assessments</th>
<th>n</th>
<th>Mean</th>
<th>SD</th>
<th>r</th>
</tr>
</thead>
<tbody>
<tr>
<td>Preschool</td>
<td>39</td>
<td>37.7</td>
<td>7.3</td>
<td>0.84</td>
</tr>
<tr>
<td>Scale–Revised</td>
<td>39</td>
<td>63.5</td>
<td>9.0</td>
<td>0.83</td>
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</tbody>
</table>

Children Without Receptive Language Disorder

<table>
<thead>
<tr>
<th>Assessments</th>
<th>n</th>
<th>Mean</th>
<th>SD</th>
<th>r</th>
</tr>
</thead>
<tbody>
<tr>
<td>Preschool</td>
<td>30</td>
<td>33.1</td>
<td>5.3</td>
<td>0.69</td>
</tr>
<tr>
<td>Scale–Revised</td>
<td>30</td>
<td>38.2</td>
<td>6.2</td>
<td>0.83</td>
</tr>
</tbody>
</table>

Children With Receptive Language Disorder

<table>
<thead>
<tr>
<th>Assessments</th>
<th>n</th>
<th>Mean</th>
<th>SD</th>
<th>r</th>
</tr>
</thead>
<tbody>
<tr>
<td>Preschool</td>
<td>30</td>
<td>23.5</td>
<td>3.2</td>
<td>0.95</td>
</tr>
<tr>
<td>Scale–Revised</td>
<td>30</td>
<td>19.0</td>
<td>1.9</td>
<td>0.99</td>
</tr>
</tbody>
</table>
The Boehm–3 Preschool measures basic concept acquisition in two ranges with two difficulty levels: ages 3–6 years and 4–11 years. The reliability of the Boehm–3 Preschool was determined by checking inter-rater reliability, with a mean of .95. The reliability of the test was established by checking internal consistency and test-retest reliability. The correlation between the two groups tested in the Boehm–3 Preschool and Bracken Basic Concepts Scale–Revised Test Scores was .73, providing evidence of their concurrent validity. It may be inferred that both tests measure some of the same aspects of the concepts of basic concepts.
National norms were developed by administering the test to children. The sample was designed to replicate the U.S. population, stratified by 1998 U.S. Bureau of the Census demographics report.

The selection process for test items included evaluation of p-values (percent of children passing), item difficulties, item correlation, and bias determined by scoring the borders of correct responses, making the test content current, performance stage, and paradigmatic. The test score can be obtained.

Overall, the Boehm–3 Preschool can be quickly and easily administered in 20-30 minutes, including preparation time.

While these results clearly show a significant difference between the Boehm–3 Preschool and Bracken Basic Concepts Scale–Revised, this finding should be interpreted with caution. Additional studies are needed to confirm these findings.

Means, Standard Deviations, and Correlations Between Boehm–3 Preschool and Bracken Basic Concepts Scale–Revised Total Test Raw Scores (n = 62)

<table>
<thead>
<tr>
<th></th>
<th>n</th>
<th>Mean SD r</th>
</tr>
</thead>
<tbody>
<tr>
<td>3-0 to 3-11</td>
<td>37</td>
<td>37.70 7.32</td>
</tr>
<tr>
<td>4-0 to 5-11</td>
<td>39</td>
<td>43.03 6.83</td>
</tr>
</tbody>
</table>

The correlation between Boehm–3 Preschool and Bracken Basic Concepts Scale–Revised is .86, providing evidence of test construct validity.

Means, Standard Deviations, and Correlations Between Boehm–3 Preschool and Bracken Basic Concepts Scale–Revised Total Test Raw Scores (n = 59)

<table>
<thead>
<tr>
<th></th>
<th>n</th>
<th>Mean SD r</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boehm–3 Preschool</td>
<td>29</td>
<td>25.25 3.21</td>
</tr>
<tr>
<td>Boehm–Preschool</td>
<td>29</td>
<td>25.20 3.24</td>
</tr>
</tbody>
</table>

The correlation between the Boehm–3 Preschool and its predecessor, Boehm–Preschool, is .90. Both tests are designed to be used as a part of a battery of tests to determine what, if any, special services may be needed for a child.

Reliable and Validly

The reliability of the Boehm–3 Preschool was determined by obtaining data consistency, internal measures of measurement, and item analysis.

A test with a high level of internal consistency indicates that the internal structure of the test is such that results are repeatable. The coefficient alpha for Boehm–3 Preschool ranges from 1.00 to 2.00, indicating excellent reliability.

Validity evidence based on relationship to other variables was compiled in the Boehm–3 Preschool. The content of the test was based on a review of research and validation studies.

Validity evidence based on similarity to other variables was compiled in the Boehm–3 Preschool. The test was considered for inclusion in a matched set of children without receptive language disorder and children with a receptive language disorder.

Means and Standard Deviations of Boehm–3 Preschool Raw Scores for a Matched Set of Children Without Receptive Language Disorder and Children With a Receptive Language Disorder (n = 250)

<table>
<thead>
<tr>
<th></th>
<th>n</th>
<th>Mean SD r</th>
</tr>
</thead>
<tbody>
<tr>
<td>Children Without Receptive Language Disorder</td>
<td>30</td>
<td>33.10 9.25</td>
</tr>
<tr>
<td>Children With Receptive Language Disorder</td>
<td>30</td>
<td>33.12 9.22</td>
</tr>
</tbody>
</table>

A study was conducted to determine the levels of agreement in test reliability in both groups of children. The study was conducted on the two groups tested in the Boehm–3 Preschool study. Transition was set at 3 years old, and 7% for test age. It is estimated that both tests remain nearly the same at the same levels as previous studies.

Children Without Receptive Language Disorder

<table>
<thead>
<tr>
<th></th>
<th>n</th>
<th>Mean SD r</th>
</tr>
</thead>
<tbody>
<tr>
<td>3-0 to 3-11</td>
<td>22</td>
<td>45.93 6.26</td>
</tr>
<tr>
<td>4-0 to 5-11</td>
<td>29</td>
<td>42.26 6.75</td>
</tr>
</tbody>
</table>

The correlation between the Boehm–3 Preschool and its predecessor, Boehm–Preschool, is .86. Both tests are designed to be used as a part of a battery of tests to determine what, if any, special services may be needed for a child.
Spanish edition: The Spanish edition of Boehm–3 Preschool has been enhanced through:
- Concurrent development of English/Spanish norms.
- Enhanced validity through testing Spanish-speaking children aged 3.0 to 5.11.
- Updated normative information and extension of norms through age 5.
- Inclusion of items that overlap with the easier items on Boehm–3.

The Boehm–3 Preschool Spanish standardization sample and related norms of more than 300 children (n = 100 per age band) were obtained in the United States and Puerto Rico. Content validity was ensured through the inclusion of different socioeconomic and racial groups, and of children who did not speak English as their first language.

The Spanish edition of Boehm–3 Preschool was developed to evaluate children aged 3.0 to 5.11. It provides information on the basic relational concepts of young children aged 3.0 to 5.11, which are typically acquired in the preschool years. The test is designed to help assess a child’s understanding of basic relational concepts, and to be used as part of a battery of tests to determine what, if any, special services may be needed for a given child.

The test has undergone stringent quality control measures to ensure accuracy and reliability. The test manual provides guidelines for interpreting and administering the test, and includes information on the standardization process and normative data. The test is designed to be used by professionals who work with young children and their families.

The Boehm–3 Preschool provides professionals with tools to assess children’s understanding of basic relational concepts. The test is designed to be used as part of a battery of tests to determine what, if any, special services may be needed for a given child. The test results are useful for intervention planning and working with parents. The test is designed to be administered by professionals who have received training in the use of the test, and who are familiar with the test’s administration and scoring procedures.

The Boehm–3 Preschool is designed to evaluate young children’s understanding of the basic relational concepts as defined by Boehm–3. The test is designed to be used as part of a battery of tests to determine what, if any, special services may be needed for a given child. The test results are useful for intervention planning and working with parents. The test is designed to be administered by professionals who have received training in the use of the test, and who are familiar with the test’s administration and scoring procedures.
The Spanish edition of Boehm–3 Preschool has been enhanced through:
- Union of the English version of Boehm–3 with the Spanish version of Boehm–3...

Spanish Edition
- The ages of 3.0 and 5.11 beginning in October 1999. Examiners included bilingual speech-language pathologists, school psychologists, teachers, and other professionals who were experienced in test administration. All examiners testing children had to complete a Spanish proficiency check or demonstrate testing Spanish-speaking children.

The Boehm–3 Preschool provides professionals involved in preschool assessment and intervention with a reliable and efficient tool to evaluate basic concepts for students K-grade 2.

Inclusion of items that overlap with the easier items on Boehm–3, the inclusion of standardized normative information, and the development of a Parent Report Form to communicate information to parents and suggestions for working with their children in the home environment.

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TECHNICAL REPORT

Ann L. Boehm, PhD

Overview

Since the publication of Boehm–3 Preschool in 1994, there have been several enhancements to the test to reflect changes in pedagogical and educational practices.

- Test Design Criteria
  - Full-color picture manual and illustrations of items to aid in scoring
  - Increased diversity of pictures in the illustrations to reflect broader demographics
  - Updated scoring information and examples of norms through age 5
  - Percentiles and performance ranges are provided by 6-month age bands for ages 3.0 to 5.11
  - Four measure profiles – Raw Scores, Percent Correct, Performance Range, and Percentiles
  - Inclusion of items that overlap with the easier items on Boehm–3, the inclusion of standardized normative information, and the development of a Parent Report Form to communicate information to parents and suggestions for working with their children in the home environment

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