BESOS performance: Effect of preschool enrollment and maternal education
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Background and research questions

Background
~ Language screening is helpful to determine whether a preschool-age child may be at risk for impairment and requires a complete speech-language assessment (Washington & Craig, 2004).
~ The Bilingual English Spanish Oral Screener--Experimental Version (BESOS) is a language screener with vocabulary and grammar subtests in both English and Spanish that identifies bilingual preschoolers at risk for language impairment (Peña et al., 2008).
~ Maternal education level is generally used as an indicator of the socio-economic status of the family.

Research questions
1. Does enrollment in a preschool program have an impact on Pass/Fail performance on the BESOS?
~ Hypothesis: Higher rates of children enrolled in preschool will pass the BESOS than will children not enrolled in preschool.
2. Is maternal education level correlated to Pass/Fail performance on the BESOS subtests?
~ Hypothesis: Children with relatively more highly educated mothers will pass the BESOS subtests at higher rates than those with less highly educated mothers.

Method

Participants
~ 35 English-Spanish dual-language learners; age range: 47-57 months (mean=50.7; SD=3.3)
~ 17 children (preschool) were enrolled in an English-only preschool and 18 children (no preschool) were not enrolled in any preschool program.

Analytic approach
~ BESOS subtest total scores, overall pass/fail proportion, preschool enrollment, and maternal education levels were analyzed in this study.

~ All analyses were conducted with SPSS 24 (IBM, 2016).
~ Descriptive analyses of the proportion of children who failed the BESOS and each subtest.
~ Pearson's chi-square tests were conducted to investigate if Pass/Fail performance significantly differed by preschool status (preschool, no preschool), or maternal education (high, low).
~ A Pearson's correlational analysis examined the relation between maternal education and total score on each subtest.

Results

Table 1: Percent failed on each BESOS subtest and on the BESOS overall

<table>
<thead>
<tr>
<th>Test</th>
<th>Preschool</th>
<th>No preschool</th>
<th>Combined</th>
</tr>
</thead>
<tbody>
<tr>
<td>English</td>
<td>18</td>
<td>83</td>
<td>51</td>
</tr>
<tr>
<td>Morphosyntax</td>
<td>24</td>
<td>100</td>
<td>63</td>
</tr>
<tr>
<td>Spanish</td>
<td>35</td>
<td>39</td>
<td>37</td>
</tr>
<tr>
<td>Morphosyntax</td>
<td>59</td>
<td>67</td>
<td>63</td>
</tr>
<tr>
<td>BESOS</td>
<td>12</td>
<td>61</td>
<td>37</td>
</tr>
</tbody>
</table>

Note: BESOS=Bilingual English Spanish Oral Screener--Experimental Version.

~ A chi-square test of association revealed a significant association, of large magnitude, between Pass/Fail performance and preschool enrollment, $\chi^2(1) = 9.119, p = .003, \phi = .530$.

~ A chi-square test of association did not reveal a significant association between Pass/Fail performance and maternal education, $\chi^2(1) = 0.326, p = .568$.

~ A Pearson's correlational analysis with combined groups revealed a significant correlation between maternal education and English morphosyntax total score ($r = .376, p = .028$).

~ No significant correlations were found between maternal education and total score on the other subtests across languages (English semantics: $r = .163, p = .358$; Spanish semantics: $r = .010, p = .955$; Spanish morphosyntax: $r = .198, p = .262$).

Discussion

~ The purpose of this study was to determine if preschool enrollment has an impact on performance on the BESOS, and if maternal education level is correlated to performance on the BESOS.

1. Results indicate that preschool enrollment does have a positive impact on performance on the BESOS subtests.

2. Results also indicate that maternal education level is only significantly correlated with performance on the English morphosyntax subtest.

There is a significant and meaningful difference in the pass/fail rates of the two groups, with a higher rate of children in the no preschool group failing the BESOS and each subtest compared to the preschool group.

Higher rates of children in the no preschool group were identified as at risk for language impairment.

100% of the no preschool group failed the English morphosyntax subtest which suggests that the no preschool group was not exposed to the same amount of academic, grammatically complex English morphosyntax as was the preschool group.

Future research: Line-item analysis of children who failed the BESOS in both groups to (a) determine specific problematic aspects of vocabulary and grammar in dual-language learners at risk for language impairment (b) more specifically examine the impact of preschool enrollment on performance on individual BESOS items.

References