Early expressive vocabulary predicts phonological skills in Finnish children at 3;6.

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Background
Lexical and phonological development have been shown to interact in early development. Bidirectional simultaneous associations have been suggested after one-word period

However, studies on longitudinal associations between early lexicon and later phonological development in representative groups are scarce.

Aim of the present study
1. Does previous (at 2;0) and/or simultaneous lexical ability associate with phonological skills at 3;6?
2. How much of the phonological skills at 3;6 can be explained by previous (at 2;0) and/or simultaneous (at 3;6) lexical ability?
3. Do children with small lexicon size at 2;0 have weaker phonological skills at 3;6 than children with typical/large lexicon size?

This study is part of the norming study of the Finnish short form version of the MacArthur Communicative Development Inventories (Sanaseula-Study)

Subjects and methods
A group of 67 Finnish-speaking, healthy children whose language development was followed longitudinally between 2;0 and 3;6.

At 2;0
- Standardised Finnish version of the MacArthur Communicative Development Inventory (Long form; CDI)

At 3;6
- Boston Naming Test (BNT)
- Finnish Phonology Test (FPT)
- A total score calculated from paradigmatic and phonotactic score

Analysis:
- Spearman’s correlation coefficient values were used to analyse associations.
- Multiple linear regression model was used to analyse predictive value of lexical abilities at 2;0 and 3;6. Outcome variable: total score of FPT. Both predictors (CDI and BNT) were included in the same model.
- Comparison of the phonological skills at 3;6 between children with small/typical-large lexicon size at 2;0
- Small lexicon size at 2;0 <82 words (<17 percentile of the group)

Results

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>SD</th>
<th>Min-Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>CDI at 2;0</td>
<td>271</td>
<td>149</td>
<td>10-528</td>
</tr>
<tr>
<td>BNT at 3;6</td>
<td>22.5</td>
<td>6.07</td>
<td>10-35</td>
</tr>
<tr>
<td>FPT at 3;6</td>
<td>142</td>
<td>16</td>
<td>77-164</td>
</tr>
</tbody>
</table>

- Both previous and simultaneous lexical ability were significantly associated with FPT score at 3;6 (previous: r=.44, p<.001; simultaneous: r=.28, p<.05)
- Lexical ability at 2;0 explained 20% of the FPT score at 3;6, whereas lexical ability at 3;6 did not explain the FPT score significantly (F(2,64)=8.951, P<0.001), R=0.19. intercept: 124.25, CDI + 0.041 and BNT + 0.028. CDI (ANOVA p<0.001), BNT (ANOVA, p>0.1)
- Children with small lexicon size at 2;0 had significantly weaker phonological skills at 3;6 than children with typical-large lexicon size at 2;0 (W=127.5, p<0.001)

Discussion and conclusions
Both previous and simultaneous lexical ability were significantly associated with phonological skills at 3;6 in this fair large group of Finnish children. Early lexical ability at 2;0 explained a reasonable amount of later phonological skills. Children with small lexicon size at 2;0 had weaker phonological skills at 3;6 than children with typical-large lexicon size at 2;0.

The present findings align with the bidirectional model

Clinical implication: supporting both lexicon and phonology during intervention may benefit both language language domains.

References

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