The Development of the Auditory Processing Domains Questionnaire (APDQ)

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Background
Listening skills are vital for young children to hear and learn in the classroom. Around 5% of children have difficulty processing speech despite having normal hearing thresholds. The aim of this study was to develop a screening questionnaire for auditory processing disorders compared to attention and language disorders.

Method

Participants
- 198 normal controls
- 20 students clinically diagnosed with an auditory processing disorder (APD)
- 40 students clinically diagnosed with attention deficit hyperactivity disorder (ADHD)
- 10 students with a learning disability (LD)

Questionnaire
- 52 questions covering three scoring scales:
  - Auditory processing (31 questions)
  - Attention (10 questions)
  - Language (11 questions)

Procedure
- Parents rate frequency of competent performance on their child’s different behaviours.

Results

Questionnaire Psychometrics
Factor analysis: Identified three components assessing auditory processing, language, and attention.
Regression model: Significant differences between normal and clinical groups on all scales ($p < 0.001$), and significant differences between clinical groups.

<table>
<thead>
<tr>
<th>Group</th>
<th>AP p-value</th>
<th>ATT p-value</th>
<th>Lang p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>NC vs. ADHD</td>
<td>$&lt; 0.001^*$</td>
<td>$&lt; 0.001^*$</td>
<td>$&lt; 0.001^*$</td>
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<tr>
<td>NC vs. APD</td>
<td>$&lt; 0.001^*$</td>
<td>$&lt; 0.001^*$</td>
<td>$&lt; 0.001^*$</td>
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<tr>
<td>NC vs. LD</td>
<td>$&lt; 0.001^*$</td>
<td>$&lt; 0.001^*$</td>
<td>$&lt; 0.001^*$</td>
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<tr>
<td>ADHD vs. APD</td>
<td>0.33</td>
<td>$&lt; 0.001^*$</td>
<td>0.99</td>
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<tr>
<td>ADHD vs. LD</td>
<td>0.01*</td>
<td>1.00</td>
<td>0.004*</td>
</tr>
<tr>
<td>APD vs. LD</td>
<td>0.35</td>
<td>0.03*</td>
<td>0.02*</td>
</tr>
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</table>

Group differential analysis of scale scores: Inter-group differences at or above 75% sensitivity and specificity levels (mean = 89%).

Conclusions
The APDQ is an effective screening questionnaire for auditory processing disorders with scale score patterns likely to help make appropriate clinical referrals. The 52-item questionnaire has recently been updated to a 50-item version. A 32-item version of the questionnaire for 4.5- to 7-year-olds is currently under development.