Hearing Rehabilitation of Adults with Auditory Processing Disorder (APD): A Systematic Review and Meta-analysis of Current Evidence-Based Interventions

Rachel Crum1, Sanathorn Chowsilpa1, Diego Kaski2, Paola Giunti3, Doris-Eva Bamiou4, Nezhat Koohi1,3
1. UCL Ear Institute, London. 2. Department of Otolaryngology, Faculty of Medicine, Chiang Mai University, Chiang Mai, Thailand. 3. UCL Queen Square Institute of Neurology, London. 4. NIHR UCLH BRC (Deafness and Hearing Problems Theme), London

INTRODUCTION

Adults with APD can have difficulty processing speech and non-speech signals causing wide ranging communication difficulties1. Practice guidelines, whilst suggesting suitable treatments, acknowledge a need to establish efficacy in the target population2. With increased interest in this field and no systematic reviews written on the effectiveness of interventions in adults, there is now an urgent need to establish the current extent of knowledge.

Aim

To systematically identify and critically evaluate evidence of the effectiveness of treatments for adults with documented APD difficulties and to highlight issues that are hindering progress in this field.

Research question

How effective are the various interventions in treating APD in adults?

METHODS

Inclusion Criteria

<table>
<thead>
<tr>
<th>Category</th>
<th>Inclusion Criteria</th>
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<tr>
<td>Population</td>
<td>Adults aged 18 years and over, with at least one unmedicated ADHD, acute or historical exposure to TBI, or comorbid cognitive disorders, unilateral hearing loss, speech, language, or other neurological population</td>
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<tr>
<td>Intervention</td>
<td>Any intervention for APD, except those involving existing hearing aids</td>
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<tr>
<td>Comparator</td>
<td>All measures not directly sensitive to the CANS</td>
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</tbody>
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Exclusion Criteria

- Cognitive disorders, comorbid unmedicated ADHD, spontaneous speech, language, or other neurological population
- Any study involving medication and/or unmedicated ADHD

Search Strategy

Following PRISMA guidelines. Four databases searched (MEDLINE, Embase, Web of Science and Scopus). Reference lists of relevant articles and conference abstracts, review papers, book chapters, and Google Scholar were searched. Synonyms, word truncation, and phrase mapping employed without language or year restrictions.

RESULTS

- Thirteen studies met inclusion criteria
- Studies grouped into four intervention categories (A,B,C,D)
- Two types of 'real world' outcome measures were analysed:
  - Monaural low redundancy speech testing
  - Subjective listening ability

- Meta-analysis (Fig. 2) showed 'very large' effect for SIN and subjective listening improvement; 1 study found no subjective listening improvement
- Evidence quality: low to moderate

CONCLUSION

While acknowledging limitations such as reliance on data from small-scale studies and the use of Standardized Mean Difference (SMD) data, which can result in exaggerated and imprecise effect sizes, this analysis still provides some evidence supporting the efficacy of PRMS and suggests potential benefits of LGHAs, albeit with low-quality evidence. However, it is important to note that there is insufficient evidence to definitively establish the effectiveness of the interventions discussed in this review. The presence of high heterogeneity among the studies and suboptimal study design have hindered progress in this field.

References


