‘My Hearing Explained for Children’: An evaluation of the tool in NHS clinical practice

1. Introduction

Audiologists need to provide family-focused counselling so that children and their families can make informed and empowered decisions about their hearing management [1]. While over 75% of Audiologists feel this counselling is important, less than 60% undertake typical counselling activities in most of their appointments [2]. Audiologists report several barriers to counselling in clinic: lack of confidence with non-technical conversations; concern it will take too long; and lack of conviction that counselling tools will help if they do not have prior experience of using them [2] [3].

The Ida Institute have developed a tool called ‘My Hearing Explained for Children’ (MHEfC) which may address the first two of these counselling barriers. We wanted to find out how easy it is to use the Ida tool, and what families and audiologists think of it. We also hoped to see if families are more pleased with their audiology service if they have used the tool.

2. Method

The study took place within the NHS paediatric audiology department in Southampton (UK), and recruited families with children aged 8-11 years. The service supports approximately 160 children in this age group, who have hearing aids or permanent hearing loss. Prior to this study, the service used counselling tools with older children, aged 12+ years but not as part of standard care for younger children.

Inclusion criteria
• Child is aged 8-11 years • Any degree of hearing loss, persisting for over 6 months • Any type of hearing loss • Hearing aid users and non-hearing aid users • Both child and parent/carer is fluent in English. • Both child and parent/carer are willing to participate
Exclusion criteria
• Either parent/carer or child has a visual impairment, such that they cannot see the participant information or the Ida tool clearly. • Children with learning difficulties such that their cognitive or speech and language development is not within the range typical of 8-11 year olds.

Box 1. Inclusion and exclusion criteria

At the beginning of the study, following receipt of UK Health Research Authority approval, Audiologists were trained to deliver the MHEfC tool using the Ida Institute online resources. After that, children meeting the inclusion criteria (box 1) were invited to participate in the study when attending their routine Audiology review appointments between December 2021 and July 2022 inclusive. Figure 1 illustrates the study flow chart. Overall, there were 3 categories of participant (child, parent, audiologist) and 2 pathways (standard care and MHEfC), resulting in 6 different groups for analysis and comparison. During the study 10 audiologists, and 45 families consented to take part (21 receiving standard care and 24 receiving MHEfC in addition to standard care).

[Insert figure 1]

The evaluation questionnaires contained open and rating scale items and were analysed using mixed methods. Descriptive and comparative statistics were used to examine the rating scale responses and appointment duration data for both pathways. Thematic analysis [4] was used to examine the open responses as this approach is flexible, seeks to understand the world from the perspective of the participants, and can accommodate a large data set. Thematic analysis was performed separately for each group of participants on each pathway, resulting in 6 thematic maps and codebooks, one for each group. The codes and themes were then also compared between the groups and pathways, with reference to the original data set, to examine the impact of MHEfC [5].

3. Key Findings:

- **Contextual trends:** Using MHEfC did not significantly impact service satisfaction for children or parents, because satisfaction was high in both groups for both pathways. For example, when asked if they were satisfied with the appointment, 100% of parents on the standard care pathway said 'Yes, very much so'. The outcomes of the study may have been different had families been more concerned about the quality of their discussion with audiologists in standard care. We also found that, on both pathways, feedback was more effusive from parents, followed by children, while the audiologists were more reserved.
- **Time taken:** On average the MHEfC added 9 minutes to the length of an appointment [Statistically significant difference: Mann Whitney U test, U=352.5, p = 0.018]. This extra time did not adversely affect the parental rating of appointment timeliness. However, Audiologists expressed concerns such as the need to plan-ahead, the unpredictable time required, conflicting time demands and the sense of pressure caused. For comparison, Audiologists in the standard care pathway expressed a sense of having ample time. Therefore, any benefits of MHEfC need to be shown to out-weigh the cost of the additional time required, and the time-management pressure perceived by the Audiologist in implementing it.
- **The topics discussed:** The topics discussed within each appointment are shown in figure 2. An average of 3 topic categories per appointment were discussed on each pathway, but the nature of the categories differed. MHEfC promoted discussion of some topics, but care should be taken not to inadvertently exclude topics which are not explicitly prompted by the tool.
- **Child engagement with the tool:** Audiologists on the MHEfC pathway reported that 42% of children were 'very much' engaged with the tool, while the remaining 58% had engaged with it to 'some extent'. Figure 3 shows a collection of participant comments from the MHEfC pathway. On both care pathways, children reported that they felt involvement through a sense of friendliness, being asked questions, and understanding explanations. Challenges of using MHEfC raised by children, parents and Audiologists included difficulty understanding some tool elements, some duplication of information, and that the tool didn't suit all children – some became restless and distracted.
- **Parental engagement with the tool:** When asked to rate their satisfaction with MHEfC, 86% of parents said, 'very much', 9% said 'to some extent' and 5% said 'not really'. On both care pathways, parents highly valued their involvement in discussion. The mechanisms for involvement included being asked their opinion and encouraged to ask questions, not feeling rushed, clear informative explanations, and a sense of friendliness from the audiologist. Audiologists noted that parental support for MHEfC was often needed with this age group of children and viewed this as positive because they felt it increased parental involvement in the conversation and facilitated discussion between parent and child as well as with the audiologist. However occasional negative parental

attitudes were reported, such as scepticism or rushing, which made use of the tool more challenging for the audiologist.

- Impact of MHEfC: Figure 4 shows the Audiologists' rating of the impact of MHEfC. In 13% of cases Audiologists reported the discussion was better than without MHEfC and attributed this to more structured and detailed conversation, more focus on the child, and easier 'lead-in' to specific management strategies. In 4% of cases, Audiologists felt the tool made the discussion poorer. Reported negative impacts included detrimental effect on other appointment activities as time ran out, lack of fresh insight and repetitive discussion.
- Presentation of elements of the tool: Children and some parents liked the visual aide provided by the tool, especially the faces on the rating scale elements. But Audiologists reported that separate left and right scales were not relevant for symmetrical hearing losses or when rating listening effort, and that it was unclear if children should rate their unaided or aided hearing levels. Audiologists also found some questions on the tool too broad (e.g., what can I hear?) and some wording too complex. They also requested a text prompt to help explain the head picture at the top of the form.

4. Conclusion:

- The outcomes of the study may have been different had families been more concerned about the quality of their discussion with audiologists in standard care
- The benefits of MHEfC need to outweigh the cost in terms of the additional time required and the time-management pressure perceived by the Audiologist. For children attending annual audiology appointments, intermittent use of the tool may be a suitable compromise to consider.
- MHEfC can help promote discussion on topics such as behavioural and communication tactics. But care should be taken to ensure topics not promoted by MHEfC (such as tinnitus) are not inadvertently excluded from the discussion.
- Although it didn't suit every case, Audiologists felt that 42% of children engaged well with MHEfC.
- Parental involvement with the tool was valued by Audiologists and, commonly, also by parents.
- Audiologists noted a mixed impact of MHEfC. Negative aspects included the detrimental effect of time constraints, lack of fresh insight and repetitive discussion. Positive effects of MHEfC included more structured and detailed conversation, more focus on the child, and easier transitions into management decisions.

5. References

[1] The Amercian Speech-Language-Hearing Association, "Guidelines for Audiologists Providing Informational and Adjustment Counseling to Families of Infants and Young Children With Hearing Loss Birth to 5 Years of Age," 2008.

[2] K. Muñoz, T. Price, L. Nelson and M. Twohig, "Counseling in Pediatric Audiology: Audiologists'Perceptions, Confidence, and Training," *The Journal of the Amercian Academy of Audiology,* vol. 30, no. 1, pp. 66-77, 2019.

[3] S. Allen, S. Harrigan, K. Dixon, D. Harbor and M. Gregory, "An evaluation of professional's use of the Ida Institute My World tool," The Ear Foundation, 2017.

[4] V. Braun and V. Clarke, "Using thematic analysis in psychology," *Qualitative Research in Psychology,* vol. 3, no. 2, pp. 77-101, 2006.

[5] S. Lindsay, "Five Approaches to Qualitative Comparison Groups in Health Research: A Scoping Review," *Qualitative Health Research,* vol. 29, no. 3, pp. 455-468, 2019.

Additional information

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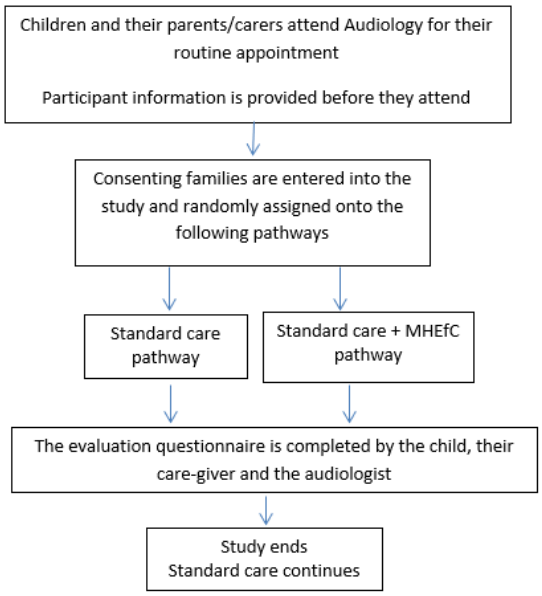

Figure 1. Flow chart of the patient journey's through the study.

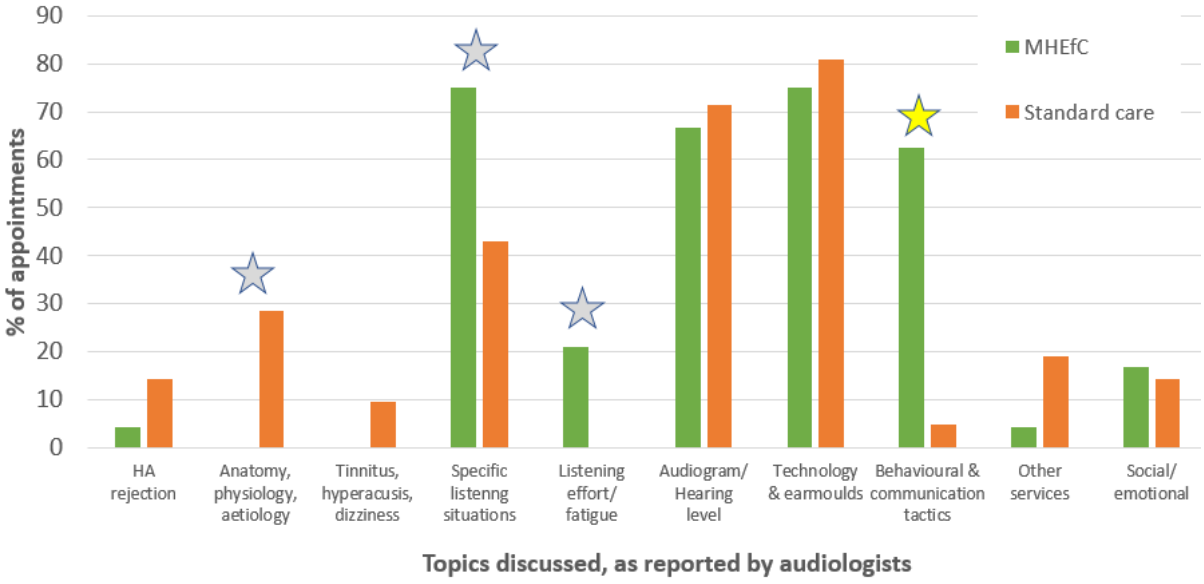

Figure 2. The topics discussed with families at their appointment. This covers 45 appointments (24 with MHEfC, and 21 without it). The stars indicate categories for which there was a statistically significant difference between the pathways with Chi squared testing. However, the difference in the grey starred categories did not remain significant following Bonferroni correction which accounts for the large number of comparisons being made across all ten categories. In a study with larger subject numbers, these categories may have shown a more robust significant difference.

Figure 3. Examples of postive (blue) and negative (pink) participant views on the engagement of the child in the discussion, for the MHEfC pathway

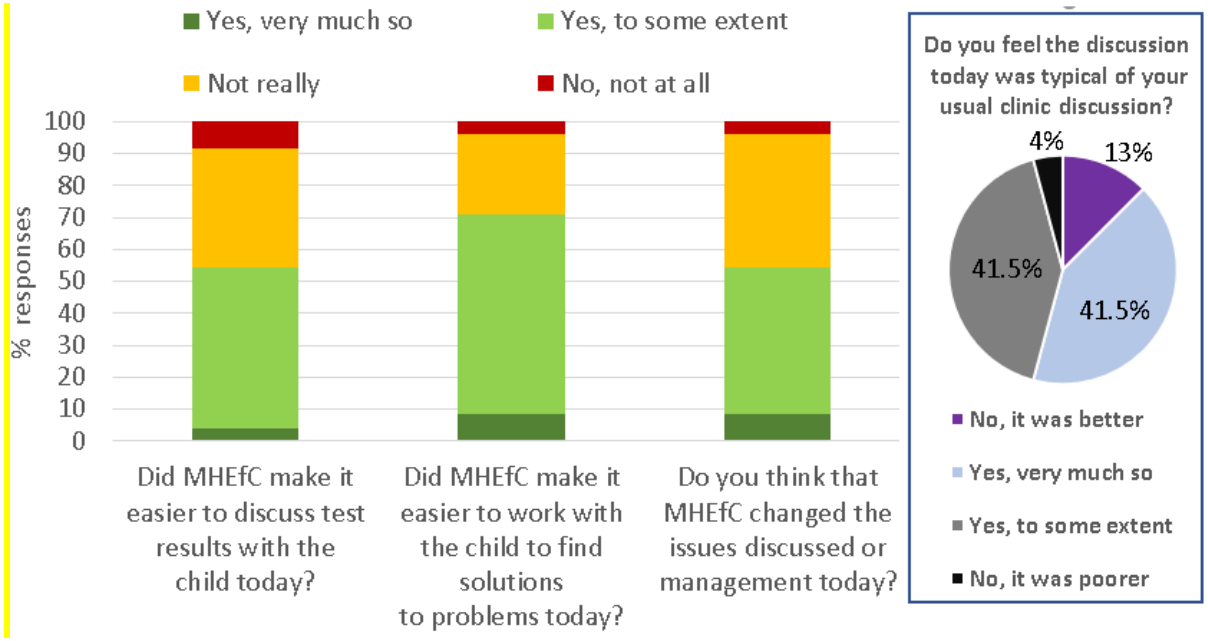

Figure 4. The bars show Audiologist ratings of the impact of MHEfC on the discussion within the appointment. The pie chart shows how they rated today's discussion compared to 'usual' (e.g. no use of MHEfC).