

Hearing aid insertion: correlation between patients' confidence and ability

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Abstract

Introduction: Once fitted with hearing aids, much reliance is placed on patients' own ability to manage their devices effectively. There has, however, been little research to assess how patients' own confidence compares with their actual ability to manage their hearing aids. This study compares patients' perceptions of their ability to insert their hearing aids with their observed ability to insert the devices satisfactorily.

Method: Eighty-five patients provided a rating of their level of confidence in fitting their hearing aid, using a visual analogue score (VAS). This was then compared with their observed level of ability, assessed by an audiologist, also using a VAS (both scores 0–100 mm).

Results: We found a weak to moderate correlation between the subjective and objective scores (Pearson $r = 0.4912$).

Conclusions: From these results, we would advise caution when accepting a patient's perceived level of ability as the only indicator of their true ability to insert their hearing aid. This also has important implications for follow-up services that rely only on telephone conversations with patients after a first fitting.

Key words: Hearing Loss; Hearing Aids; Follow-Up Studies; Reproducibility Of Results; Psychomotor Performance; Audiology

Introduction

Over 200 000 hearing aids are fitted in the UK per year. A significant portion of the National Health Service (NHS) budget is spent on the provision of hearing aids, but often the hearing aids are not used as much as intended, or not at all. Brooks¹ showed that, although the amount patients used their aids varied a great deal over time, many patients did not use them at all – approximately a third of patients did not use the device at all in the first year. Gianopoulos *et al.*² showed that only 43 per cent of patients continued to use their device in the long term.

Wilson and Stevens³ found that the attitude of the wearer towards the hearing aid influenced the amount it was used; however, other important factors also play a role in hearing aid usage. Perhaps the most easily addressed are the physical factors relating to the aid, particularly, the fit of the mould.⁴

The provision of follow-up appointments, in an attempt to recognize and solve such problems in partnership with the patient, is one strategy for improving the level of use of hearing aids. This has now been

made mandatory following the fitting of new digital hearing aids provided by the NHS, as part of the Modernising Hearing Aid Services (MHAS) project.⁵

Follow up of patients fitted with hearing aids makes financial sense⁶ but, with stretched levels of staffing, growing waiting lists and limited financial resources for fittings, it is not always possible to arrange routine follow-up appointments. The concept of group follow up may go some way towards solving a few of these problems while still delivering a high standard of care, but non-attendance may prevent the success of this strategy.⁷

Telephone follow up of patients following a hearing aid fitting has been shown to be an effective tool,⁸ but this method relies on the accuracy of the patient's responses. There are many anecdotal reports about large differences between what the audiologist is told by the patient regarding their use of their hearing aid and what their ability subsequently turns out to be. This suspicion is frequently levelled at the elderly.

The potentially poor correlation between perception of ability and actual ability has been demonstrated by studies in other fields. Ward *et al.*⁹

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studied perceptions of surgeons' operative performance and found that, initially, correlation between perceived ability and actual ability, as assessed by an expert, was weak to moderate; these findings were also reported by Gage *et al.* when assessing the efficacy of occupational therapists.¹⁰ In the process of following up hearing aid fitting, the question remains, 'how does the reality of the patient's situation compare with what they are telling me?' This study set out to identify the relationship between the patient's perception of their ability to insert their hearing aid and an objective assessment of their ability conducted by an audiologist.

Method

One hundred patients were chosen sequentially from a list of patients recently fitted with an analogue hearing aid in the department of audiology of the Lister Hospital, Stevenage. These patients were invited to a follow-up appointment six weeks after their fitting. Eighty-five patients responded and attended the appointment. Their ages ranged from 26 to 94 years (mean age = 74.0 years, standard deviation (SD) = 10.26). At this appointment, all patients were questioned about their confidence with the hearing aid and assessed on their ability to insert it. The patients were asked, 'how confident are you at putting your hearing aid in your ear and taking it out?' Their response was indicated on a visual analogue scale (VAS) and scored out of 100 mm. This question had been designed in association with members of the NHS patient advice and liaison service to reduce the risk of ambiguity.

The audiologist then instructed the patient to insert their hearing aid into their ear, switch it on, switch it off and then remove it again. This was also scored on a VAS out of 100 mm by the audiologist. The inter-rated reliability of the audiologists was assessed using a pilot group of subjects and was found to be good.

Analysis

The agreement between the audiologist's score and the subject's score was assessed using the Pearson product moment correlation coefficient.

Results

The mean score of the patients' confidence in fitting was 77.44 per cent and the mean score of their actual insertion ability was 76.22 per cent (SD = 27.87 and 31.93, respectively), with a difference between the means of 1.21 percentage points. Figure 1 shows the agreement between the patient's VAS of their confidence in inserting their hearing aid compared with the VAS provided by the audiologist as an assessment of the fitting ($n = 85$).

These data show a weak to moderate agreement between the patients' scoring of their own confidence and the scoring of their actual ability by the audiologist (Pearson $r = 0.4912$). There is a cluster of scores for confidence in insertion ability between 95 to 100 per cent, in which a reasonably good correlation is

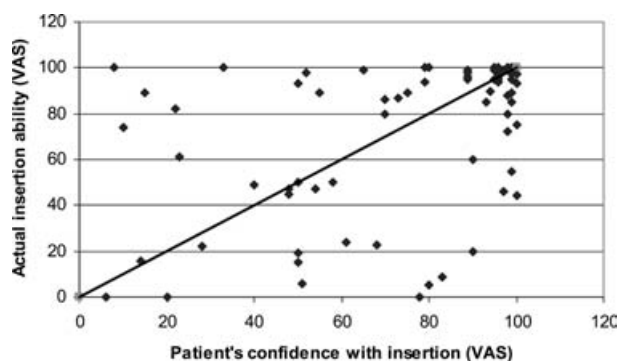


FIG. 1

Scatter plot of visual analogue scores (VAS) for patients' confidence in their ability to insert their hearing aid versus their actual ability to do so, as assessed by an audiologist. (Visual analogue scale scores were out of 100 for both variables.)

observed, but scores below this value have a far poorer correlation.

Discussion

The evidence for the importance of a follow-up appointment after hearing aid fitting is strong.¹¹ There is also evidence that the ability of a patient to insert the aid into their ear is one of the most important factors influencing the benefit derived from the device. With audiology departments under pressure to reduce waiting lists, it is not always feasible to provide a routine, reliable follow-up service for patients who have been fitted with hearing aids. A telephone follow up, as described by Cherry and Rubinstein,⁸ may be a useful tool to improve the service of hearing aid provision without incurring the expense of a follow-up appointment. Such telephone follow ups prevent the inconvenience to patients of having to return to hospital even if their confidence with the device is high.

One of the main drawbacks of telephone follow ups is the accuracy of information provided by the patient. The results of this study indicate that there is a poor correlation between patients' perceptions of their own performance in hearing aid insertion and their true ability as assessed by an audiologist. This has important implications for data collected by telephone or in the group setting where actual ability is not easily assessed. These data suggest that it may not be satisfactory to rely on information provided by the patient about their abilities, and that a more thorough method of assessment may be necessary.

Conclusion

There is weak to moderate correlation between patients' perceptions of their ability to insert their hearing aids and their actual ability to do so. This correlation appears to be better for patients who reported being very confident with the insertion of their device than for those who were less confident. These data raise important issues for those who provide follow-up services. It may not be enough to

rely entirely on what the patient is saying; a more objective assessment of their abilities may be needed. Further research needs to be done to assess the impact of age as well as other factors on the strength of the correlation between patient's confidence in hearing aid insertion and their actual ability to do so.

- **This paper investigates hearing aid users' perception of their ability to manage their devices effectively**
- **Patients' ability to insert their hearing aids, as assessed by an audiologist, was compared with their own perceived ability**
- **Caution is advised when accepting the patient's perceived level of ability in hearing aid insertion**

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