

Evaluating the causative factors that lead to rejection of hearing aids among young adults having moderate to severe degree sensorineural hearing loss

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ABSTRACT

Background: Hearing loss in young adulthood causes real stigma and a state of denial. The crucial clinical management to sustain the hearing loss is hearing aid fitting, but most adult people reject it or do not use it. Many factors, including social, personal, and device problems, lessen the usage of hearing aid. The objective of this study was to evaluate the causative factors which can lead to the rejection of hearing aids.

Patients and methods: This was a cross-sectional survey carried out in 9 cities of Punjab, Pakistan, using a convenient sampling technique during summer 2018. A total of 171 participants were included who were young adults ranging from 19-40 years. A questionnaire with 11 factors and a further 35 sub-reasons was given to the participants. Questions were close-ended in yes or no. Data were analyzed through frequency and percentages tabulation with SPSS software.

Results: Results showed that hearing aid value/speech clarity was the most problematic reason for patients to reject hearing aid. The given factor had four sub-reasons ('noisy situation,' 'poor benefit,' 'poor sound quality, and 'not suitable for the type of hearing loss). A total number n=154 (90.05%) marked yes for facing poor sound quality followed by poor benefit n=141 (82.45%), not suitable for the type of hearing loss n=121 (70.76%) and noisy situation n=118 (69.00%), thus making hearing aid value the leading cause of rejection. The second leading cause was financial factors followed by situational factors, appearance, fit and comfort, device factors, psychosocial factors, ear infections, care and maintenance, attitude, and family pressure to use a hearing aid.

Conclusion: Most prevalent cause of not taking up a hearing aid is the hearing aid value followed by financial factors, situational factors, appearance, fit, and comfort.

Keywords:

Young adulthood, hearing aids, hearing impairment, rejection, factors

INTRODUCTION

Hearing impairment is a reduction in hearing ability ranging from hardly considerable impairments to complete deafness.¹ It is the most widespread deficiency affecting 5.3% of people globally.² According to the National Policy for Persons with Disabilities, 2002, 2.49% population in Pakistan was disabled, of which 7.40% were deaf.³ To deal with this prevailing problem, especially sensorineural hearing loss, hearing aids (HA) are the primary source.⁴ The provision of these aids directly influences speech and language development by providing a better way to understand speech.⁵ However, hearing aids do not work in some situations, e.g., congenital deformities, severe damage to hair cells, risk middle ear anomalies, etc.⁶ Most disturbing situation is that hearing loss is a nearly common disability

among human beings, yet the use is very low in the adult population.⁷ Most of the time, hearing aids alone do not work. Poor aural rehabilitation or poor counseling techniques may lead to the rejection of hearing aids.⁸ Many factors, i.e., hearing aid value, fit and comfort, shape, and cost, limit the usage of HA. So proper aural rehabilitation is necessary according to the problematic factor of an individual to improve the use of HA.⁹ AR focuses on the problem of nature and the cause of its occurrence.¹⁰ According to Erikson's theory of psychosocial development, young adulthood ranges from 19-40 years of age.¹¹ Failure at this stage causes of loneliness and permanent psychosocial issues.¹¹ In adults with hearing loss, uptake of hearing aids is low because of social negativity, fear of wearing HA, and cost. Cost is a common problem even in rich countries.¹²

In 2013 a scoping study was conducted to find out the reasons for the non-usage of hearing aids. Many factors were elaborated, but the most important factors identified were hearing aid value and comfort.⁹ A recent study from India showed that personal device-related

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factors and finance-related factors were top in the list.¹³ Literature also states that the non-usage of HAs is because of noisy situations and poor comfort and sound quality of the aids.¹⁴

Many factors decrease the hearing aid’s use and are a significant hurdle in a patient’s behavior to acquire help from counseling and other treatments. So the identification of such issues and evaluation is necessary to deliver a better aural rehabilitation plan to increase the usage of HAs. An up-to-date AR plan can be made if we know what big problem-related hearing aid is for an individual and why is he rejecting hearing aid?

PATIENTS AND METHODS

A total of 171 patients aged 19-40 years were included in the study having moderate-severe degree sensorineural hearing loss, and all of them were already recommended to use digital hearing aids by their Audiologists. Their previous pure tone audiometry reports were collected. Young adults with their reports showing a sensorineural hearing loss of 41 dB (moderate) to 90 dB (severe) were included. Informed consent was taken from all the participants. Older adults, people having normal hearing, mentally retarded persons, and those having a severe-profound and mild level of sensorineural/conductive hearing loss were excluded from the study. Type of hearing aid (behind the ear or in the ear) was not considered. A cross-sectional survey was used, and the data was collected from 9 different cities of Province Punjab, Pakistan, using a convenient sampling technique during the summer of 2018. The source of data collection was primary and selection of cities based upon the convenience of approach. These cities included Lahore, Kasur, Pakpattan, Burewala, Lodhran, Chishtian, Okara, Multan, and Bahawalnagar. All patients were given a questionnaire that stated 11 factors for non-use of hearing aids, with 35 questions categorized as sub-reasons. These were close-ended questions asking yes or no, found identical in 10 previous studies (2000-2012) compiled and arranged by McCormack and Fortnum in their study of 2013.⁹ These 35 questions/reasons were grouped into 11 different categories, which are hearing aid value (noise, a poor benefit, a poor sound quality, not much suitable for the type of hearing loss), fit and comfort (need help to put HA in and off, uncomfortable, side effects), care and maintenance (need help changing batteries, handling problems, volume control adjustment), attitude (no need to use a hearing aid), device factors (broken, disappointed with HA, feedback, the device requires

Table 1. Reasons for not using hearing aid

Hearing aid value / speech clarity	Yes n (%)	No n (%)
Noisy situations/background noise	119 (69.6)	52 (30.4)
Does not help/poor benefit	141 (82.5)	30 (17.5)
Poor sound quality	154 (90.1)	17 (9.9)
Not suitable for the type of hearing loss	123 (71.9)	48 (28.1)
Fit and comfort of hearing Aid		
Need help putting HA in	64 (37.4)	107 (62.6)
Need help taking HA off	52 (30.4)	119 (69.6)
Uncomfortable	151 (88.3)	20 (11.7)
Side effects (rashes, itching)	123 (71.9)	48 (28.1)
Care and maintenance of hearing aid		
Need help changing batteries	60 (35.1)	111 (64.9)
Handling problems/ manual dexterity	55 (32.2)	116 (67.8)
Volume control adjustment	82 (48.0)	89 (52.0)
Attitude		
No need/hear well enough without HA	63 (36.8)	108 (63.3)
Device factors		
Not working properly/broken	131 (76.6)	40 (23.4)
Disappointed with HA	115 (67.3)	56 (32.7)
Feedback/whistling	70 (40.9)	101 (59.1)
Device requires service	98 (57.3)	73 (43.7)
Battery life too short	141 (82.5)	30 (17.5)
It makes the voice sound funny	52 (30.4)	119 (69.6)
Poor directivity	62 (36.3)	109 (63.7)
Situational factors		
No opportunity/lack of situations necessary for HA	124 (72.5)	47 (27.5)
Only used for specific situations	141 (82.5)	30 (17.5)
Only works in limited situations	83 (48.5)	88 (51.5)
Rare social user	129 (75.4)	42 (24.6)
Financial factors		
Cost of repairs	119 (69.6)	52 (30.4)
Cost of batteries	111 (64.9)	60 (35.1)
Psychosocial factors		
Nuisance/hassle	113 (66.1)	58 (33.9)
Forget to use it	97 (56.7)	74 (43.3)
Lost it	69 (40.4)	102 (59.6)
Appearance		
The stigma of wearing HA	121 (70.8)	50 (29.2)
I do not like the appearance	94 (55.0)	77 (45.0)
Cosmetic concerns	93 (54.4)	78 (45.6)
Infection/ear problems		
Have tinnitus	58 (33.9)	113 (66.1)
Cannot use due to external otitis	42 (24.6)	129 (75.4)
Ear wax problem	107 (62.6)	64 (37.4)
Recommendations		
Family pressure to get HA	57 (33.3)	114 (66.7)

service, battery life is too short, the device makes the voice funny, poor directivity), situational factors (no opportunity, only used for specific situations, only works in limited situations, rare social use), financial factors (cost of repairs and cost of batteries), psychosocial factors (nuisance, forget to use it, lost it), appearance (stigma of wearing HA, do not like the appearance, cosmetic concerns), ear problems (have tinnitus, cannot use due to external otitis, ear wax problem), and recommendations (family pressure to get HA). The simple frequency and percentages tabulation method was used to analyze data through SPSS 22.

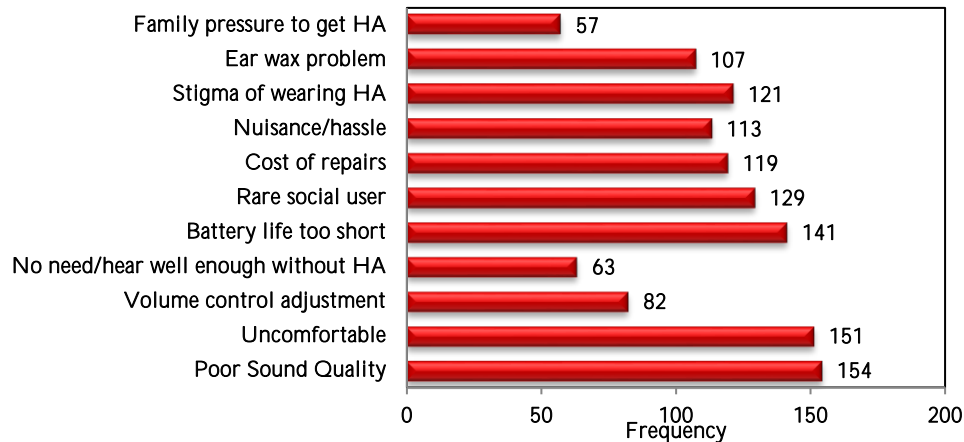


Figure 1. Most common reasons to avoid the use of a hearing aid

RESULTS

All the participants were aged 19-40 years. 87 (50.9%) were females, and 84 (49.1%) were males. The age mean was 30.88. All the 11 factors with 35 sub reasons are ranked below according to their frequency and percentage. The top five factors that lead to rejection of hearing aids are hearing aid value, finance/cost, situational factors, appearance, and fit and comfort. Poor sound quality is the most leading cause that contributes to the factor of hearing aid value (Table 1, Figure 1).

DISCUSSION

The focus of this study was to determine the causative factors which could lead to the rejection of hearing aids. The leading causes were hearing aid value, financial factors, situational factors, appearance, and fit and comfort. The reasons related to hearing aid value were the noisy situations, a poor benefit, a poor sound quality, and not suitable for the type of hearing loss. The reasons included in financial factors were the cost of repairs and batteries. Situational factors were related to a lack of use of HA, use in specific situations, working in limited situations, and occasional social use. Factors included in appearance were stigma of wearing, dislike towards appearance, and cosmetic concerns. Reasons, i.e., needing help in putting HA in and taking off, discomfort, and side effects were grouped into fit and comfort.

In this study, the hearing aid value and fit, and comfort are among the most problematic factors for not using hearing aid. The result is in accordance with literature which suggests that hearing aid value and fit and comfort are the main issues that make people not wear hearing aids after being fitted.⁹ Another study in

2000 documented 32 reasons for non-usage of HA according to their percentage in a list. The top reasons that were enlisted are a poor benefit, background noise/noisy situations, fit and comfort, adverse effects of HA, price and cost, and do not help.¹⁷ Similar results are found in the current study. Hearing aid value (poor benefit, background noise, does not help), finance/cost, and fit and comfort (adverse effects) were the major reasons found in this study. This study shows that background noise, poor sound quality, discomfort, and side effects are among the major sub-reasons for giving up HA.

Earlier research on young adults ages 18 and above also suggested these reasons as a cause of the non-usage of hearing aids.¹⁴ A recent study enlisted inconveniency, financial limitations, and stigma of wearing hearing aids as the major barriers involved in using hearing aids.¹⁸ Another study on clinical reasons to return a HA depicted that inconvenient wearing of HA due to noise is the most frequent reason, while the cost is a major problem among younger adults.¹⁹ Hartley and coauthors evaluated the reasons for not wearing HA among the Australian population.²⁰ These reasons were discomfort, does not help, cost, not working, and too noisy. In our study, hearing aid value (noisy situations, does not help) is the most prevailing reason, while cost is at second place and discomfort is the most problematic reason under the category of fit and comfort, which is the 5th major problem.²⁰ One more study depicted that the more visible the hearing aids were, the more negative were the attitudes of colleagues, friends, and other folks except for family members.²¹ Another study discussed the same issue. The negative behavior of the colleagues produced

stigma and concern in persons about hearing loss that show the way to denial of help-seeking decisions by the impaired population.²² These results are in accordance with this study. Appearance (stigma and cosmetic concern) is the main issue complained by many participants. A previous study showed that apparent stigma caused the refusal of hearing aids, and it was puzzling for people regarding 'when and where to wear hearing aids'.²³

Literature also suggests that a large number of people with hearing loss do not wear hearing aids due to issues with accessibility and affordability²⁴. The background noise affects the robust relationship between working memory and speech recognition in noise.²⁵ Further studies should consider the financial factors (cost of hearing aid), situational factors of the patient, appearance of the aid, and fit and comfort, which are also among the most affecting factors to lessen the usage of hearing aid. Researchers should also conduct studies on non-users of hearing aids to see how the non-use varies between age and gender.

CONCLUSION

The study demonstrated a variety of factors that show the way toward rejection of hearing aids. The most prevalent cause of not taking up to taking a hearing aid is hearing aid value. Other leading factors that limit hearing aid usage are financial factors, situational factors, appearance, and fit and comfort. The reasons for not using HA are prevalent among young adults aged 19-40 years.

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