

Patient Perception of Usage of Hearing Aids and Reasons for Non-compliance in the Adult Population.

Gunarathna C.K.

Abstract

Objectives

To analyze the socio-demographic data, reasons for poor compliance, post introduction follow up status & user's satisfaction.

Methodology

This was a prospective observational study of 6-month duration with non-randomized study population selected in two centers representing both government & Private sector with inclusion criteria. Data was collected by an Audiologist via structured questionnaire during the follow up. Data analysis was done using SPSS software package.

Results

There were 102 patients. Only 60% had good compliance, while 48% expressed strong satisfaction about HA usage. 66% were not aware of the need for follow up after prescription; hence 68% had never come for adjustments and revealed a statistically significant correlation (P-0.01) between patients' awareness and regular follow up.

Conclusions

A significant proportion of hearing aid users did not have good compliance. This study discusses methods to improve compliance emphasizing the necessity of a well-organized follow up setup.

Key-words.

Hearing aid; compliance; Adult population.

Introduction

Populations are ageing and older adults make an

increasing contribution to society, yet uncorrected hearing loss is common over the age of 50 years, increasing in prevalence and severity with age. Even though there are no exact data available in Sri Lankan population, old age community will be increasing with increase of life expectancy. So, there is a possibility of having varying degree of hearing disability among them. The consequences of uncorrected hearing loss can be profound for hearing-impaired individuals and their communication partners but there is evidence that adults commonly delay 10-15 years before seeking help for hearing difficulty and the most common reason is the belief that their hearing is not bad enough ^{[2][7]}.

The most common form of treatment for hearing loss in adults is the provision of a hearing aid which is the mainstay of intervention for hearing loss. Evidence of hearing aids usage shows benefit to social functioning and quality of life even for mild hearing loss and long term outcomes are better when they are obtained early ^[2]. However, in Sri Lankan population majority of the people with hearing disability may not be receiving an adequate hearing support. Furthermore, it is estimated that even majority of people in a developed country could benefit from using a hearing aid, but only small proportion of people among them who currently own hearing aids wear them regularly ^[1].

The success of hearing aid provision as a treatment for hearing loss, like any health-care intervention, largely depends on two factors. First, the intervention should be capable of providing the patient with a favorable change in their condition. Second, the patient must comply with the intervention program in order to have a chance of receiving that benefit. Nevertheless, it is observed a poor compliance in regular usage of them ^{[5][3]}. So, it is necessary to identify the

factors that affect compliance with this treatment recommendation. Indeed, there are several tools available for monitoring patient outcomes following provision of a hearing aid which seek to determine how often a hearing aid is used, whether the patient has experienced any changes in speech understanding, or other changes to quality of life. Therefore, this study was designed to assess the patient perception of hearing aid usage & reasons which can influence on patients' compliance.

Methodology

This study was a prospective observational study of 6 months' duration. Study population was selected in two centers representing both government & Private sector. Patients attending the ENT clinic at National Hospital of Sri Lanka & Patients attending to hearing aid facilitating institute in the private sector nearby Colombo were those two centers. The study population was non-randomized & all patients fitting the below mentioned criteria were registered & included in the study.

Inclusion criteria

1. Age more than 18 years old.
2. Who has been prescribed a hearing aid for more than six months' duration.

Exclusion criteria

1. patients with diagnosed psychiatric disorders & mentally handicapped people.

Data collection was done via structured questionnaire filled by an Audiologist during follow up after prescribing a hearing aid. The questioner mainly focused on demographics data, binaural hearing status, type and severity of hearing loss, Type of the HA, hearing thresholds, Patients' awareness of regular follow, reasons for poor compliance and Patients' satisfaction.

As there were no audiologists in the government sector, the data collection was done by the principal investigator with the help of an

audiology technician. To maintain the uniformity & accuracy of the data collection in the private sector it was done by an audiologist who was clearly instructed by the principal investigator. Data statistical analysis was done using SPSS computer software package. Statistical comparisons were done with the chi-square test or Fisher's exact test. *p* values of < 0.05 were considered statistically significant. The study plan was approved by the Medical Ethics Committee of the National Hospital Colombo Sri Lanka.

Results

There were total of 102 patients selected for the study. 56% of them were male and 46% were female. The age of the participants ranged from 18 to 84 years. The majority of 52% was belonged to 50-70 years' age group.

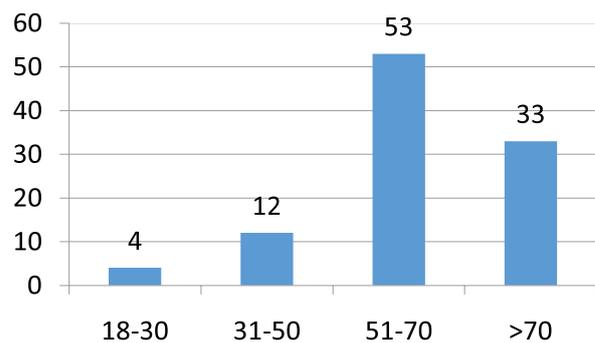


Figure 1-Age distribution of the sample population.

The majority of 42% had moderate to severe hearing disability.

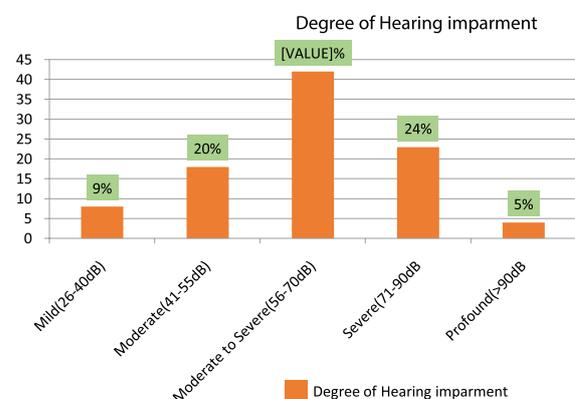


Figure 2- severity of hearing disability in the sample population.

70% did not have active income source or were on dependent state. Etiologically 61% of the participants had age related hearing loss and in 26% it was due to CSOM. While 73% of them had SNHL, 22% had conductive deafness and rest of the 5% had mixed type of hearing loss.

Etiology for hearing impairment

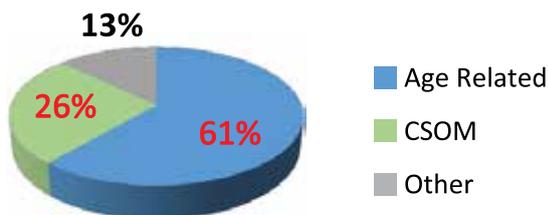


Figure 3- Etiological factors of hearing loss.

Type of Hearing Impairment

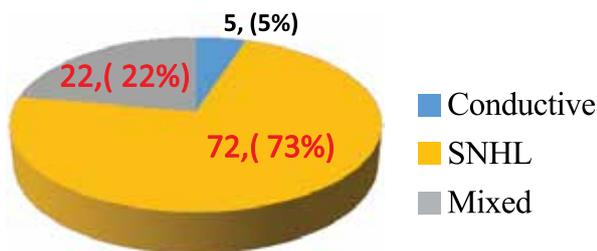


Figure 4- The nature of hearing loss.

97% of the HA were behind the ear type. None of the participants had in the ear HA. Technologically 65%, 31% and 4% were Fully digital, Analog and semi digital respectively.

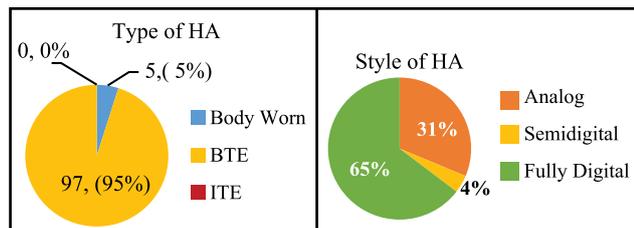


Figure 5- Different varieties of hearing aids prescribed accordingly models and technology.

60% of the study group actively used the HA more than 6 hours per day. 60% had good compliance, while 48% expressed strong satisfaction about HA usage with the mean aided threshold of 35.9dB.

Number of Hours used per Day

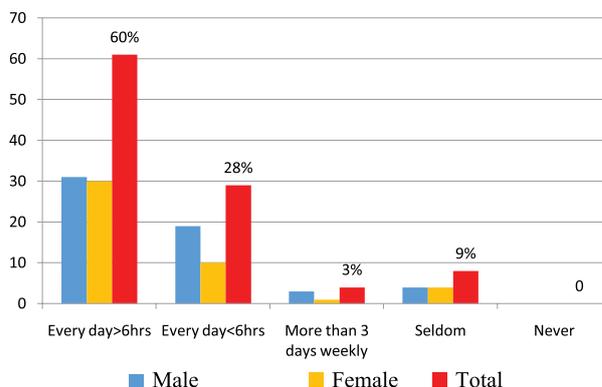


Fig 6 - Duration of time actively using/wearing the HA in day today life.

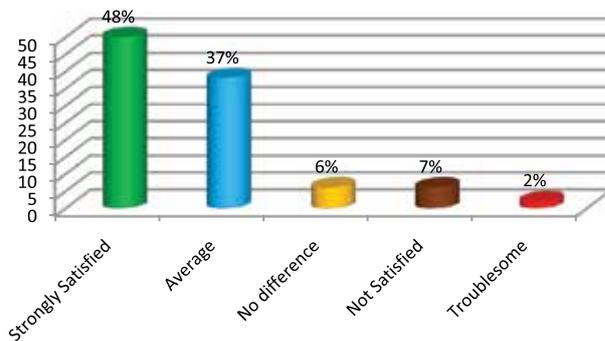


Fig. 7 - Patients' Satisfaction

Commonest reasons for poor compliance were reduced clarity of HA and users' relatives demand to wear a HA rather than their genuine interest. Disturbing background noises and ear mold problems also were the other relatively common problems which led to reduce the user compliance.

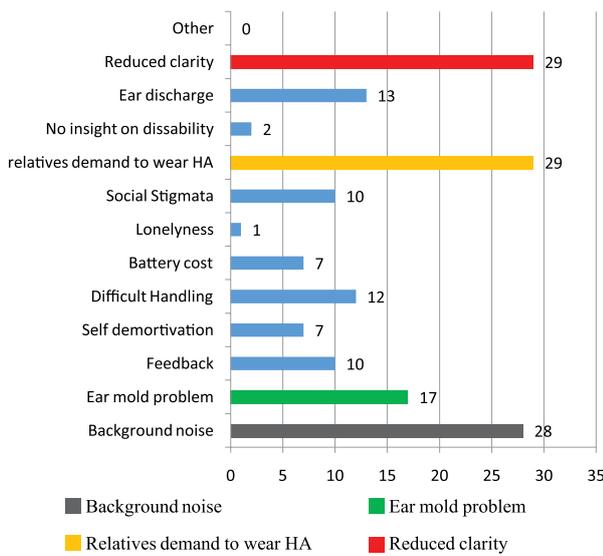


Fig. 8 - Reasons for poor compliance

66% of the participants were not aware of the necessity of regular follow up after prescription of a HA; hence 68% had never come for adjustments. Thus, there was a statistically significant correlation (P=0.01) between patients' awareness and regular follow up. Merely 20.5% had come for the regular follow-up.

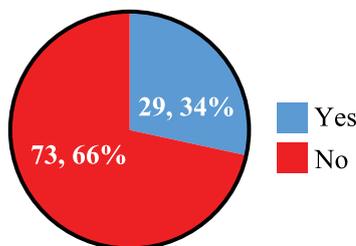


Fig 9 - Patients' awareness of the necessity of regular follow up

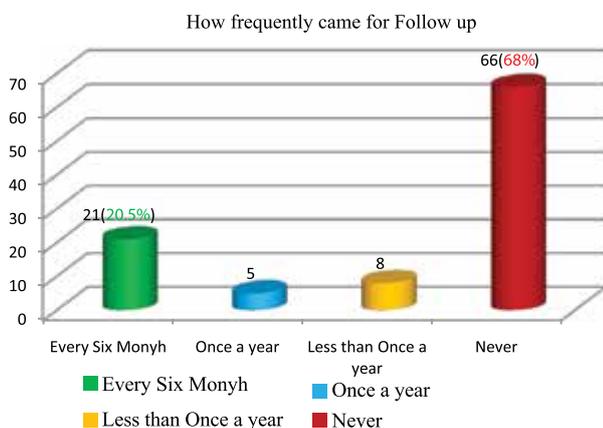


Fig. 10 - Frequency of attendance for the post prescription follow up clinics.

There were no statistically significant correlations found between the compliance and Gender, Age, Degree of Hearing impairment, Type of HA or Style of HA.

Discussion

The total amount of time spent wearing a hearing aid has been reported to be positively associated with the benefit that the hearing aid provides (i.e., an improvement in speech understanding) and levels of patient satisfaction [1]. Hence wearing a HA more than 6 hours per everyday has been considered as a relatively better indicator of patient compliance [1][4]. In this study, it was 60%. However, remaining 40% were below the expected level and can be considered as high in comparison with other similar studies [3][6]. Furthermore, merely 48% strongly satisfied with their hearing aid and in 38% it was only average. 15% of them were unable to get any benefit by wearing HA. So, this study revealed that patient satisfaction is at a lower level than other studies found.

One of the two main reasons for poor compliance is reduced clarity. A significant improvement in quality of life was reported in a study by Yueh *et al.* [8], which compared traditional hearing aids with digital hearing aids. The recent advances in hearing aid technology with digital mode has shown very good outcomes and totally replaced the Analog mode. Moreover, it has improved compliance by decreasing disturbing noise and feedback and by making the handling of the hearing aids easier [5]. However, still 31% of the study group had been using analog HA. The obvious reason could be the financial limitations as 70% did not have active income source or were on dependent state.

It is important to note that technical problems are not the only reason for poor compliance. Change of personal attitudes towards hearing impairment should be considered, as many people tend to ignore their disability. One of the main causes for poor compliance was relatives demand to wear a HA rather than their genuine interest. Furthermore, among other factors were social

stigmas, self-demotivation and difficult handling^[4]. The importance of seeking aid for hearing disability of among local population seems to be much lower than their interest for that of visual problems. Even though direct local studies on this matter could not be find, failure of 68% participants to attend subsequent follow up after prescription of HA, could reflect local populations' attitude towards the disability. However, lack of patients' awareness for the necessity of regular follow up should be responsible for this as there was a statistically significant correlation (P=0.01) between patients' awareness and regular follow up. Therefore, when hearing aids are prescribed for the treatment of hearing loss it is important to ensure that patients are provided with regular follow up appointments to monitor their success^[3].

The main reasons identified for poor compliance are,

- Reduced clarity
28.4%
- Relatives wanted patient to wear HA
28.4%
- Disturbing background noise.
27.5%
- Ill-fitting molds
16.7%

The lack of subsequent regular follow-up could be responsible, as some of above distressing situations can be minimized by periodic adjustments. Hence, effective way of patient education and good communication should be improved. Furthermore, it is important to select more precise high quality HA. Implementation of this would be challenging, as significant proportion of the patients did not have source of income. Furthermore, change of personal attitudes towards hearing impairment should be considered, as many people tend to ignore their disability

Limitations

Though there were 102 participants, the target population of this study was relatively small as it was mainly based on 2 centres for 6-month duration, which can be regarded as a major limitation. Furthermore, a comparison between government institute versus private was not done to avoid any financial motivation in favour of any side. Moreover, though the study could recognize the patients' lack of awareness for follow up, it was difficult to clearly identify the possible reasons behind that.

Conclusion

Advances in hearing aid technology has helped improve compliance amongst the hearing aid users. However, reduced clarity, lack of patients' interest, disturbing noise, ill-fitting moulds and feedback problems were reported frequently as the reason for non compliance. Hence following steps are recommended to improve the outcomes of hearing aid use.

- Change peoples' attitude about hearing disability.
- Improve patient education and mode of communication between patient and health care givers
- Establish a well-organized follow up setup.
- Extended financial supports by government and charity organization.

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