

Original article

The Impact of Hearing Aids on Quality of Life of Hearing Impaired Individuals

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Abstract:

The regular use of hearing aids (more than 8 hours a day) benefits people in hearing for better communication than those who are less-likely to use hearing aids

Objective: The objective of the study was to assess the impact of hearing aids on the quality of life of hearing impaired individuals

Methods: In this cross-sectional study total 50 participants were recruited by convenient sampling technique from Lahore, Pakistan. 50 patients who were diagnosed with hearing loss and were recommended with hearing aids of both genders were included in the study. The International Outcome Inventory for Hearing Aids (IOI-HA), questionnaire was used for data collection. Data were analyzed through Statistical Package for Social Sciences (SPSS) version 23.0

Results: In this research 50 hearing impaired individuals who were hearing aid users, participated. The mean age of participants was 64.10±15.88 years. Among which 25 (50%) were males and 25(50%) were females. The average time of hearing aid use was 3.88 hours, majority of patients responded that hearing aid helped quite a lot in the daily routine (mean score of IOI-HA, 3.62), have moderate difficulty in residual activity (mean score of IOI-HA, 3.26), moderately satisfied with their hearing aid (mean score of IOI-HA, 3.28), moderately affect the participation restriction (mean score of IOI-HA, 3.20), impact of their hearing loss bothered moderately (mean score of IOI-HA, 3.14) and quality of life (QOL) was very much better (3.90). There was insignificant association between the QOL of males and females (p-value>0.05)

Conclusions: It was concluded from the study that the hearing aids have a greater impact on the quality of life and socio-economic aspects of hearing impaired individuals. Hearing loss is such a problem, which separates certain community of hearing impaired individuals from the normal population. Individuals with hearing impairment not only have to face personal communication problems but also it affects their health, independency and quality of life in their daily routine.

Key Words: Quality of life; hearing aid; hearing impairment; socio-economic

Introduction:

Quality of life (QoL) measures have become very popular in research to find out the outcomes of improved hearing impaired individual's life. In a survey of WHO in 2012, the ratio is 5.3% of the world's population having with some degree of hearing loss [1]. Hearing loss is linked to social and physical functions as well as is associated with cognitive defects, communication, mood and behavioral disturbance. Only one out of five people benefits from a hearing aid by using it

properly. Hearing loss may directly affect hearing impaired individual's life by affecting their communication, emotional and social behavior[2].

In communication, hard of hearing could not be able to hear, which causes isolation from social circle [3]. Hearing aids are introduced for hearing impaired individuals to benefit them by amplifying sound according to their residual hearing. They not only help in hearing

sustainability but may also attain one's confidence in social and economic circle [4]. There are different types of hearing aids introduced based on patient's demand, hearing loss degree, type of hearing loss, cost, efficacy etc. These are analog and digital hearing aids [5]. Researchers are working onto improvement of sound transmission and decreased distortion of sound because of feedback or occluding effects [6]. Researchers are finding the improved ways to select and fit hearing devices for those whose hearing ability is hard to test. This study will assess the effects on QoL by using hearing aids and socio-economic aspects of hearing impaired individuals to obtain results hearing impairment is used as a research model [7].

This research provides a basis for a broad understanding of hearing aid's use in hearing impaired individuals and the impact of hearing aids on their social and economic status. It also includes anatomy and physiology of human ear and normal transmission of sound to cochlea. Human ear has three divisions. These divisions help by working together for the sound transmission to the brain [8]. A study in 2016 showed the relation between socio-economic classification and the recognition of QoL of people who are related with hearing impairment [9]. Lotfi Y. conducted a study in 2009 which showed that there is a relation between socioeconomic classification of the families and the recognition of the QoL, because the lower the socioeconomic classification was, the worse the recognition of the QoL was in all areas except their surroundings [10]. This study on hearing aids is provided with the basic objective of reducing hearing difficulties which has effects on hearing impairment [11]. A 2012 study by Andrea Ciorba shows that hearing aid improves the life socially and its quality for the hard of hearing. People included in this study were from Germany, England and France. Up to 15,000 individuals participated in this study [12]. In this scientific report, conducted by E. Tsakirópoulou in 2007, it was presented that

hearing aids improve complete QoL for mostly hearing aid users [13].

Hearing aids are the principal tool for rehabilitation of hearing loss, the most common impairment in elderly persons, but lemmatizes due to cost range [14,15]. Showing different degrees of hearing loss with multi statistics model, use of hearing aids show as an affording strategy to rehabilitate the hearing-impaired individual. The results may help the policy makers in placing health resources efficiently at appropriate places.

Methods

In this cross sectional study total 50 participants were recruited by convenient sampling technique from Lahore, Pakistan. Patients of both genders who were recommended to use a hearing aid by audiologist were included. Individuals with normal hearing, mental impairment and patients not having severe to profound sensory neural hearing loss were excluded. The International Outcome Inventory for Hearing Aids (IOI-HA) questionnaire was used for data collection, which has seven items to assess the advantages of H.A. [16] these items prioritize on different factors. Each does focus on a different topic: 1) daily use, 2) benefit, 3) residual activity limitations, 4) satisfaction, 5) residual participation restriction 6) impact on others and 7) QoL. Each item has five potential responses ranging from the worst to the best outcome. A higher score on this questionnaire indicates a better outcome of hearing aid. Data were analyzed through Statistical Package for Social Sciences (SPSS) version 23.0. T-test was used to test the difference between the QoL in gender.

Results

The minimum and maximum age of participants were 31 and 83 years respectively. The mean age of participants was 64.10 ± 15.88 years. Among which 25 (50%) were males and 25(50%) were females. According to figure 1, the average time of hearing aid use was 3.88 hours, majority of patients considered that hearing aid helped quite a lot in the daily routine (mean score of IOI-

HA, 3.62), have moderate difficulty in residual activity (mean score of IOI-HA, 3.26), moderately satisfied with their hearing aid (mean score of IOI-HA, 3.28), moderately affect the participation restriction (mean score of IOI-HA,

3.20), impact of their hearing loss bothered moderately (mean score of IOI-HA, 3.14) and QoL was very much better (mean score of IOI-HA, 3.90).

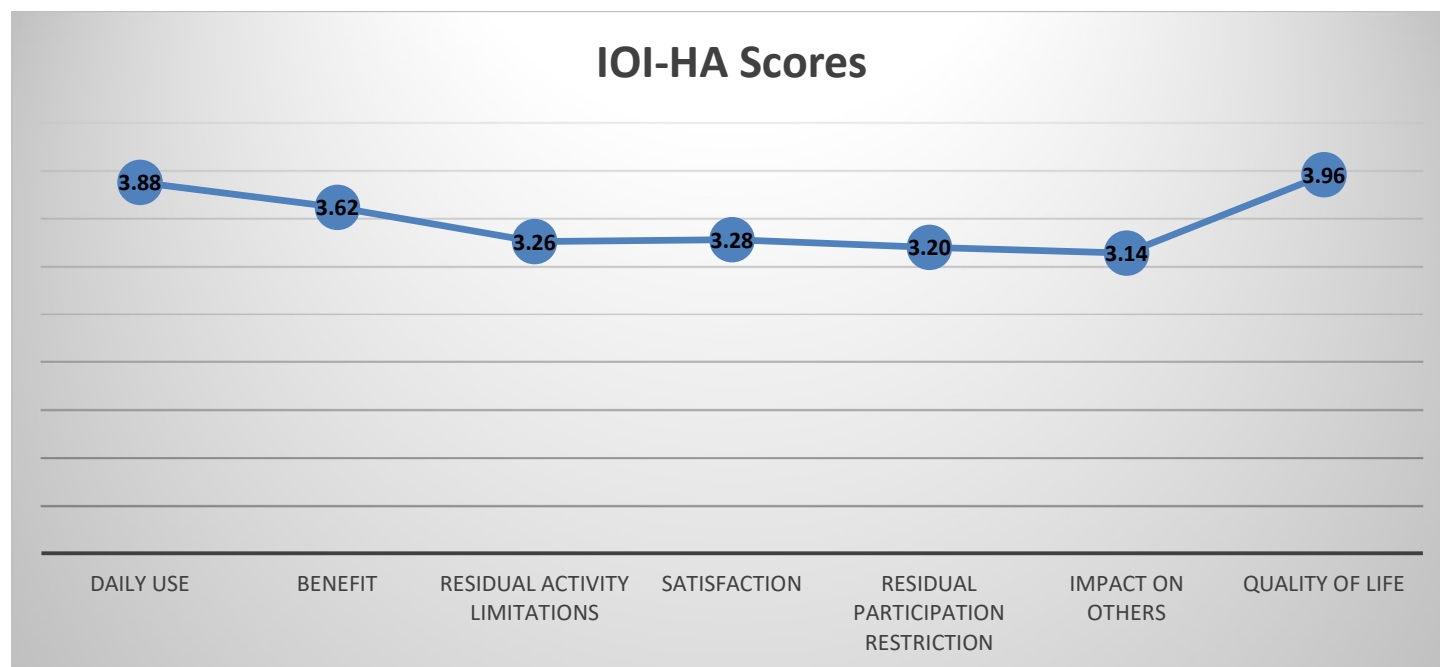


Figure 1: Mean score of IOI-HA Domains

Gender	N	Mean \pm SD	t-test	P-value
Female	25	24.3 \pm 4.93	0.022	0.982
Male	25	24.3 \pm 7.4		

Table 1: Difference between the QoL with respect to gender

Table 1 represents that there was insignificant difference between the QoL of Males and females. The mean QoL score of males were (24.3 \pm 4.93) and females were (24.3 \pm 7.4) (p-value>0.05).

Discussion

The purpose of the study was to determine the impact of hearing aid on the QoL of hearing impaired individuals. It was hypothesized that hearing aids have great impact on the QoL of hearing impaired individuals. Financial issues, societal rejection, styles of hearing aids add up more difficulties which lead to lesser improvement in the life of hearing impaired individuals [17]. Awareness of Hearing Aid must be made in society to help hearing impaired individuals to overcome societal stigmas [18].

The results of this study showed a positive impact of hearing aids on QoL which is in accordance with a study conducted by Lotfi, Mehrkian, Moossavi and Faghih-Zadeh in 2009 which showed that there is a relation between socioeconomic classification of the families and the recognition of the QoL, because the lower the socioeconomic classification was, the worse the recognition of the QoL was in all areas except their surroundings. Also, it shows a significant improvement in QoL at the end of a

three months trial of hearing aids [10]. A 2012 study by Andrea Ciorba shows that hearing aid improves the life socially and its quality for the hard of hearing. People included in this study were from Germany, England and France. Up to 15,000 individuals participated in this study [12]. The results are in accordance with our study. In this scientific report, it evolves the social and economically statistics of hearing impairment, which was published in 2007. It presented that hearing aids improve complete quality of life for mostly hearing aid users [14]. These results are also in agreement with our study.

A 2018 study by Hyams AV compared QoL among the individuals using hearing aids and those who were not using hearing aid. Results showed up that the people without hearing aid had significantly poorer QoL while those who were using hearing aid had a differ result. The QoL among hearing aid users was good [19]. Kevin J. et al., published in 2016 to assess quality of life after intervention of cochlear implant or hearing aid. The results support our study. They concluded that hearing aid results in increase in mental health QoL. Though the positive results were found 6 months post treatment but it was a greater gain [20].

Conclusions

It was concluded from the study that hearing aids have a greater positive impact on the QoL and socio-economical aspects of hearing impaired individuals. Hearing loss is such a problem, which separates certain community of hearing impaired individuals from the normal population. Individuals with hearing impairment not only have to face personal communication problems but also it affects on their health independency and quality of life in their daily routine. As a result of this survey study it is recommended that future studies should focus on hearing aid value. It was also concluded that the less use of hearing aids according to hearing loss can lead to increased level of hearing loss which leads to risk factor for the hearing impaired individuals due to lack of counseling and social rejection of hearing aids. Further

studies should focus on the betterment in the technology of hearing aids which can be helpful to overcome social, personal, economical and psychological factors for hearing impaired individuals.

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