

Understanding the factors responsible for selection of Hearing Aid for Senior Citizens

Anjan Niyogi

Research Scholar, ICFAI University Jharkhand

annjani.y20@iujharkhand.edu.in

Dr. Pallavi Kumari

Associate Professor, ICFAI University Jharkhand

Pallavikumar@iujharkhand.edu.in

Abstract

Hearing impairment is one of the most common disabilities. The problem relates to communication and socialization challenges. Increase in human longevity would increase the cases of hearing loss in elderly citizens. This impacts the overall personality of a person. People generally get demotivated and introvert. In severe cases people develop suicidal tendencies and loose the interest to stay alive. A major challenge of audiological rehabilitation has been to encourage those who have fitted hearing aids to use them. The aim of the present study is to describe hearing-aid use among older adults and to identify motivational factors associated with hearing-aid use. Suggesting that these factors are important and should be emphasized in rehabilitation programmes. In looking across the literature, we have identified five main factors which can determine whether or not someone would get a hearing aid: - Self-reported hearing loss, stigma, degree of hearing loss, personality or psychological factors, and cost of hearing aids. Different factors affecting the usefulness of hearing aids can be investigated in two stages. The first is the stage before receiving hearing aids when a person looks for help and receives hearing aid and the second stage after receiving the hearing aid when the person has used the hearing aid and reports his or her satisfaction. The factors affecting the receiving stage are the amount of hearing loss, problems experienced by the person, the patient's motives and expectations, personality traits, auditory counseling, and economic issues. However, after receiving a hearing aid, factors such as other non-auditory abilities, hearing loss, age, duration of hearing aid use, hearing aids characteristics, disabilities, attitudes, and personality traits affect the satisfaction of the patient.

Keywords: hearing-aid use, older adults, accepted need, follow-up support, rehabilitation, hearing loss

Disease and physical challenges are not restricted to age. People of all age group can develop challenges and needs to address the Healthcare requirements. Hearing Loss is one of the neglected Health challenges. Until and unless it increases to an acute level it people do not bother to take care of its rehabilitation. The change in life style, exposure loud sounds, constant usage of mobile phone, loud music, sound pollution and other related factors have compounded the Hearing challenges.

Senior Citizens are the most venerable section. Generally we find Hearing Loss does becomes a headache for this section. WHO reports suggest that nearly 1 in 4 people, which is around 2.5 billion people worldwide will be facing some degree of Hearing Loss by 2050? Reports suggests that around 700 million people worldwide (WHO report, 2016) have Hearing loss. In India around 63 million people suffer from hearing loss. It is around 6.3% of the total population. The NSSO survey predicts that around 291 persons per one lac population does suffer from severe to profound Hearing Loss (NSSO, 2001). The data does suggest that Hearing Loss is and will be a big challenge to counter globally. Though statistical figures provides a huge number of people affected with this disease the number of user is significantly less. There has been an apathy for selection and Use of Hearing Aid. Even if people buy a hearing aid they hardly use it to get remedy. Until and unless it reaches an acute stage people generally avoid. But there are reasons for not acceptance as well as acceptance. When the requirements are fulfilled and the purpose is accomplished then only people would like to accept Hearing Aid. Unlike Spectacle which is also an external device and used by all generations with high level of acceptance. Hearing Aid is much far behind it will take long strides and continuous efforts to make it acceptance. In this paper we would look into the factors which are responsible for selection of Hearing Aid.

Literature Review

The acceptance and Usage of Hearing Aid compared to the number of user is comparatively low globally. Studies conducted in European countries such as Denmark,Finland,Sweden,UK indicates around 1-40% of the people purchasing Hearing Aid either never use Hearing Aid or infrequently use Hearing Aid (Pouyandeh,2019). A different study conducted in UK, France and Denmark suggests that around 20% in France, 30% in UK and 60% in Denmark either do not use or use it infrequently (Popelka M 1998, Bentler R 1993).The figures are much worse when we consider countries in South Asia.

A report in WHO (World Report on Hearing. Geneva: World Health Organization, 2021) does provides us with some staggering numbers which needs to be addressed going forward. The study suggest that out of the entire population of 1.3 billion, 7% suffers from some degree of Hearing Loss. The reports further states out of the total hearing impaired less than 0.5% of the population does for

Hearing rehabilitation and management procedures. Even if they buy a hearing aid, there are only 10% of the people who use hearing aid for both ears.

Probably use of Hearing Aid is significantly related to the “Accepted Need” and “Follow up Support” taken care off. (Solheim j, 2022). The awareness level is too low in this market. People are aware of the Hearing Hygiene and the needs to address the challenge. The problems in the nascent stage are not addressed. There is a tendency to manage the problem by hiding the issue. The late intervention of Hearing Aid does. There are have rapid progress in technology with new state of art digital smart fitting self-adjustment mode have increased the number of user level. Previous studies in this fields were taken up to understand how far the assistive technology devices does helps in amplification process and there future usage (Watson N, 1940). But still the low level of acceptance of Hearing Aid does brings in questions about is Acceptability, Selection and Performance. Hearing Aid remains the treatment of choice. Even the best technology only provides limited benefits for the perception of speech in noisy environment (Nicholas A, 2018).

While addressing the previous studies, we did identify few factors which have considered researchers responsible for selection of Hearing Aid. Out of the many factors addressed starting from overall awareness program undertaken by Hearing Care Professionals, Self-Perception of Hearing Loss, The severity of Hearing Loss, Demographic, Economic, Psychological factors. Studies predicts the major motivating factors which tend to push for Hearing Aid purchase are mentioned below (Popleka M 1998, Bentler R 1993).

- Hearing Aid Purchase and Choice
- Hearing Aid Price
- Effectiveness on Trial

Methodology

During our study we have review quite a new literatures to understand the various facets and factors The review of literature from 1940 to 2021 (Around 65 Literature review) does indicates there are major 5 factors which are responsible for selection of Hearing Aid for Senior Citizen.

Self-Reported Hearing Loss

Self-reported hearing loss is the process to identify hearing loss detection and timely referral to audiological services. This method has been proposed to be affordable, time-efficient, and can be administered by any health care worker. The use of a single question may also overcome language and cultural barriers. Studies have shown that the accuracy results of the Self-Reported Hearing Difficulty (SHD) is associated with Auditory factors such as Degree of Hearing Loss, Frequencies of Hearing Loss and Middle Ear Infection (Kim SY 2017, Krik KM 2012, Tremblay KL 2015, Wiley TL

2000) as well as Demographic factors (Kamil RJ 2011, Kim SY 2017, Tremblay KL 2015, Hannula S 2011). Obviously there needs to be a consistent approach so far this process is concerned.

Stigma

Hearing Loss is influenced by the ability to communicate as well as participate in activities which generalize their socialization capability and acceptance (Arlinger 2003, Carmen 2004, Morgan Jones 2001). The feeling of what others will think and say does hinder the usage of Hearing Aid. The state of the art development of the Hearing aids such as the invisible Hearing aids –completely in the canal (CIC) or the In the Canal (CIC) has somehow addressed the point. The physical looks does go in a long way not in purchase of the Hearing Aid but regular usage as well (Roger L 2009).

Degree of Hearing Loss

Generally people hardly use Hearing Aid when they have lower hearing loss. Until the Hearing Loss reaches more than 60-70% people try to avoid Hearing Aid. The use of Hearing aid at higher level of hearing loss does provide amplification challenges but question remains so far as clarity and understanding is concerned. Research has shown that hearing loss is majorly caused by prolonged exposure to loud noises. If hearing aids are not programmed properly where noise induction more than speech clarity. This might have dampening effect. Further, Hearing Aids acceptability and proper understanding can only happen when they are used for both ears.

Personality or Psychological Factors

Social and emotional development includes the development of personality traits. A social acceptable development does impact the personality traits and behaviour corresponding to expectations of the social environment. These expectations are known as developmental tasks. This includes developing autonomy, achieving emotional independence, developing close relationships with peers, achieving socially responsible behaviour as well as achieving emotional stability (Sawyer et al., 2012; Pinquart and Pfeiffer, 2014).

It needs to be considered that if Hearing loss is untreated, it can lead to psychological and social Issues, with emotional and societal consequences. Recent studies further mention that people with hearing issues who do not use hearing aids are considerably less likely to participate in social activities, leading to social isolation and depression.

Cost of Hearing Aids

Studies indicate that around 4.73 million hearing aids were sold in the U.S. in 2021 (Hearing Review 2021). Meanwhile, 37.5 million adults in the U.S. reported some trouble in hearing (National Institute of Hearing 2019) the costs of research, development and manufacturing are all being supported

entirely by that small customer base. Most modern high-quality hearing aids have a life expectancy on average between three and seven years. However it needs to be understood that two people can buy exactly the same hearing aids and have them last vastly different amounts of time.

The main factor that affects the purchase price of the hearing aid is the state of the art technology level and features provided. While the overall prices of hearing aids have remained steady, the technology at which price it is offered is far greater than few years back.

All hearing aid manufacturers strive to offer devices that provides the needs of patients and their budgets. To meet this nearly every product line consists of multiple performance levels or price points. The most advanced level will contain all of the latest and greatest features like the most advanced noise reduction circuitry and wireless capabilities. Lower performance levels will contain fewer and less sophisticated features as the price decreases.

Conclusion & Limitation of the Study

Patients with hearing impairment have a wide range Of problems and needs. One of the hallmarks of hearing aids in prescribing and helping patients is to solve Their problems and anticipate the appropriate treatment Plan. It is not easy to convince a patient to get a hearing Aid when its level of performance is not determined yet. The therapist should be able to determine some of the Possible benefits and disadvantages of hearing aids for Each patient, and the final decision is with the patient. In This paper, we tried to examine the various studies with a General view of the factors involved in this topic. In general, these factors can be classified into two Broad categories, the factors before obtaining the hearing aid that persuades the patient to provide it, and after Receiving the hearing aid, which makes the patient use It and satisfy with it Patients with hearing impairment have a wide range Of problems and needs. One of the hallmarks of hearing aids in prescribing and helping patients is to solve their problems and anticipate the appropriate treatment Plan. It is not easy to convince a patient to get a hearing Aid when its level of performance is not determined yet. The therapist should be able to determine some of the Possible benefits and disadvantages of hearing aids for each patient, and the final decision is with the patient. In This paper, we tried to examine the various studies with a General view of the factors involved in this topic. In general, these factors can be classified into two Broad categories, the factors before obtaining the hearing aid that persuades the patient to provide it, and after Receiving the hearing aid, which makes the patient use It and satisfy with it Patients with hearing impairment have a wide range of problems and needs. One of the hallmarks of hearing aids in prescribing and helping patients is to solve their problems and anticipate the appropriate treatment plan. It is not easy to convince a patient to get a hearing aid when its level of performance is not determined yet. The therapist should be able to determine some of the possible benefits and disadvantages of hearing aids for each patient, and the decision is with the patient. In this paper, we tried to examine the various studies with a general view of the factors involved in this topic. In general, these factors can be classified into two broad categories, the factors before obtaining the hearing aid that persuades the patient to provide it, and after receiving the hearing aid, which makes the

patient use it and satisfy with it patients with hearing impairment have a wide range of problems and needs. One of the hallmarks of hearing aids selection is to solve their problem and provide appropriate plan. It is not easy to convince a person even though he has a hearing impairment to get a hearing aid when the Hearing loss parameters are not on the acute side. The Hearing Care Professional needs to determine some of the possible benefits and disadvantages of hearing aids for each patient. The final decision remains with the patient as to whether he would go for it or leave the ear for further detrition. In this paper, we tried to examine the various studies with a general view of the factors involved in this topic. In general, these factors can be classified into two broad categories, the factors before obtaining the hearing aid that persuades the patient to provide it, and after receiving the hearing aid, which makes the patient use it and satisfy with it. The patient with a worse hearing threshold is more likely aware of his or her hearing problem. This results in a higher chance of receiving hearing aids. It cannot be considered though that a definitive indicator for predicting the usefulness of hearing aids in the post receiving phase. Each patient has certain unique listening needs that depend on his or her lifestyle, career and social relationships. Thus, consideration on the threshold of hearing loss for the future use of hearing aids is not enough. In contrast to factors such as the state of hearing, the degree of disability experienced by the patient, his or her expectations of hearing aids, the characteristics of hearing aids, the length of use, the advice of the surgeon, and so on, can bring prediction of the ultimate benefit of the patient closer to reality.

Further, research in this field might bring in other variables which make the factors responsible study robust. May be an empirical study of cross sectional data analysis with validity check might give concrete shape to the study.

References

1. Knudsen V, Oberg M, Nielsen C, Naylor G, Kramer S, Factors influencing help seeking, Hearing Aid uptake, Hearing Aid use and satisfaction with Hearing Aids: A Review of Literature, 9,2010.Link:-<https://doi.org/10.1177/1084713810385712>
- 2.Dodds E, Harford E.R, A Community Hearing Conversation Program for Senior Citizen, 5, 1982.Link:- DOI: 10.1097/00003466-1982050000-00009
- 3.Clubick J, Buchholz JH, Virginia B, listening through hearing aids affects spatial perception and speech intelligibility in normal-hearing listeners,11,2018.Link :- [doi.org.10.1121/1.5078582](https://doi.org/10.1121/1.5078582)
4. Speaks C, Malmquist C, Hearing-Aid Performance and Hearing-Aid Selection, 4, 1966. Link: - <https://doi.org/10.1044/jshr.0901.136>
5. Jensen L, User perspectives on assistive technology: a qualitative analysis of 55 letters from citizens applying for assistive technology, 11, 2014, Link: - <https://doi.org/10.1179/otb.2014.69.1.012>
- 6.Rylands D, Van Belle JP, The Impact of Facebook on the Quality of Life of Senior Citizens in Cape Town, 6,2018. Link: - https://doi.org/10.1007/978-3-319-59111-7_60
- 7.Dorji N, Dunne MP, Seib C, Deb S, Quality of Life Among Senior Citizens in Bhutan: Associations with Adverse Life Experiences, Chronic Diseases, Spirituality, and Social Connectedness,2,2017, Link :- <https://doi.org/10.1177/1010539516685609>
- 8.Powell W, Jacobs JA, Noble W, Bush ML, Snell Rood C, Rural Adult Perspectives on Impact of Hearing Loss and Barriers to Care,4, 2019, Link :- <https://link.springer.com/article/10.1007/s10900-019-00656-3>
- 9.Taniguchi M, Survey of Senior Hearing Aid Users, 7,2004, Link:-<https://link.springer.com/article/10.1007/s10900-019-00656-3>
10. Jannekel N, Joost F, Kramer SE, The Association Between Hearing Status and Psychosocial Health Before the Age of 70 Years: Results from an Internet-Based National Survey on Hearing, 6, 2009, Link:-<https://doi.org/10.1097/AUD.0b013e31819c6e01>
- 11.Kramer SE, Kapteyn TS, Kuik DJ, Deeg D, The Association of Hearing Impairment and Chronic Diseases with Psychosocial Health Status in Older Age,2,2002,Link :- <https://doi.org/10.1177/089826430201400107>
- 12.Dasilva IM, Gonzalez M, Crestanide E, Effects of age, schooling and hearing loss on temporal processing in elderly,11,2015,Link- <https://doi.org/10.1590/1982-0216201618110415>
- 13.Parette P, Scherer M, Assistive Technology Use and Stigma, 9, 2004, Link: - <https://www.jstor.org/stable/i23875068>
- 14.Coutaz M, too old, too expensive? The impact of health costs on senior citizens in Switzerland, 6, 2013, Link: - <https://doi.org/10.1016/j.eurger.2013.10.010>
- 15.Nalwanga R, my aging experiences no longer count, is there not a cause? : examining the impacts of senior citizen grants on wellbeing of the elderly in Kiboga District-Uganda,3,2019, Link:-<https://ntnuopen.ntnu.no/ntnu-xmlui/handle/11250/2449785>
16. Huang F, Hearing Health Blog. Hearing Health Foundation (Cited March, 2017) Available from <https://www.hearinghealthfoundation.org/blogs/tag/Qualityoflife>
- 17.Ciarba A, Bianchini C, Pastore A, The impact of Hearing Loss on the Quality of Life of Elderly Adults,7,2012, 159-163, Link- <https://doi.org/10.2147/CIA.S26059>