

## **Factors influencing Patients' preferences for purchasing hearing aid**

**Anjan Niyogi**

Research Scholar

ICFAI University Jharkhand, Ranchi

Email: [anjanniyogi@gmail.com](mailto:anjanniyogi@gmail.com)

**Pallavi Kumari**

Associate Professor

ICFAI University Jharkhand

[pallavikumari@iujharkhand.edu.in](mailto:pallavikumari@iujharkhand.edu.in)

### **Abstract**

Studies conducted on Hearing Aids use by different scholars have revealed the fact that 25% Hearing Aid users do not use Hearing Aids. There are varied reasons for non-usage of Hearing Aids which are associated with the physical fit, sound quality or it might be performance of the Hearing Aid.

The Motivational theories does have a case which does directs towards which the study would be evaluated. Based on, the Literature Review the four constructs namely identified are Perceived Benefits of use, Physical Comfort, Psycho-Social Factors & Service Expectation, which generally plays an important role for purchase of Hearing Aid.

Hearing Aid purchase in case of Adults mainly takes place due to influence of family members and other related persons. It impacts the quality of life when impairment is in advanced stage (Marie Oberg, 2010). But do not clarify the changes in Demography, Socio-Economic changes having its impact on the purchase of Hearing Aid. The study holistically considers that spatial perceptions have an impact on the speech intelligibility (Jens Clubick, 2018). Most of the studies (Elizabeth Dodds, Charles Speak 1966) have studied the performance of Hearing Aid and its acceptability. In this study mapping technique would be used to understand the problem.

The study would definitely give an insight into how can one handle the issues of selection of Hearing aid. Further, will also let us know the relationship between Hearing Aid usage and satisfaction derived from the aid. Further, we can identify weather there is any positive relationship exists within the broad spectrum of

Hearing Aid usage on the user's satisfaction. This study through its constructs will consider the Psychosocial Factors; Ease of Using Hearing Aid will provide a unique study of its kind.

Keywords: Hearing Aids use, Perceived Benefits of use, Physical Comfort, Psycho-Social Factors, Service Expectation

---

## **1. Introduction**

In our modern day society people do suffer hearing loss. The problem of Hearing Loss is not only restricted to senior citizens but it is also applicable for all age groups including the new born and paediatrics. WHO estimates around 5% of the world's population which is around 430 million people does require rehabilitation to address their hearing disability (432 million adults and 34 million children). The figure is estimated to reach over 700 million people by 2050 which is around one in every 10 person will face this challenge.

The problem is further magnified people hardly accept they have hearing challenge. This is very contrasting if we compare it will vision impairment. People who are suffer from hearing disability generally find hard to have conversations with friends, family and relatives. Communication does become a challenge in office, public gatherings, Banks, Post Office, Railway station etc.

The major portion 80% of people having hearing disability lives in low- and middle-income countries in Asia and Africa. The question arises what is the procedure to handle this hearing loss. Studies suggest that Hearing loss might be handled with Medicine, Surgery, Hearing Aids and Cochlear Implant. Generally if the Hearing Loss is due to nerve deafness the Hearing loss is said to be due to Cochlear and Auditory nerve malfunction. This problem can be negotiated with Hearing Aids.

In this paper we have tried to consider the factors which are responsible for the buyer's intention to buy hearing aid. Though people generally do not intend to buy this gadget for this solution. But over the period people are using hearing aid as a solution to address their hearing disability.

### **Hearing Aid- Catering the requirement**

Hearing aid is a small electronic device. It has different physical looks such as Behind the Ear (BTE), Custom Hearing Aid inside the Ear Canal or Receiver in the Canal. Wear in or behind your ear. It makes some sounds louder so that a person with hearing loss can listen, communicate, and participate more fully in daily activities. A hearing aid can help people hear more in both quiet and noisy situations. However, only about one out of five people who would benefit from a hearing aid actually uses one.

A hearing aid has three basic parts: a microphone, amplifier, and speaker. The hearing aid receives sound through a microphone, which converts the sound waves to electrical

signals and sends them to an amplifier. The amplifier increases the power of the signals and then sends them to the ear through a speaker.

WHO (2018 report) suggests data estimates the prevalence of hearing impairment (HI) in India hearing aid market size was valued at \$332.99 million in 2019 and is projected to reach \$454.98 million by 2026, registering a CAGR of 4.56% from 2020 to 2026. Obviously, the Hearing Aid market in India has grown by leaps and bounce. But the Hearing Aid users in India compared to the Europe, America and other Developed countries does have some constraints. At the onset the number of Hearing Aid user compared to the total Hearing Impaired is very low which less than 1% is. The Hearing Aid users mainly use single ear hearing Aid (Unilateral Usage) though they have problems in both ears. The Hearing Aid they use is generally one of the modest technologies which have challenges of high level of distortion and background noise.

People of the low-income group generally tend to receive the Government distributed Hearing Aids. People do wait for months in the waiting list for receive the Aid. The quality of the said Aid does not suffice the major requirements of the Hearing impaired. The quality of the Product does remain a question. A Hearing-Impaired person does have many expectations and requirements. Some expectations are quite justifiable and can be possible with the use of Hearing Aid.

There are traditional Indian players as well as international brands do provide hearing aids in the market. The price, quality, features does have an impact on the Users ultimate performance. Obviously, budget also comes in a big way so far purchase decision is concerned

## **2.Relevance of the Study:**

Studies conducted on Hearing Aids use by different scholars have revealed the fact that 25% Hearing Aid users do not use Hearing Aids. There are varied reasons for non-usage of Hearing Aids which are associated with the physical fit, sound quality or it might be performance of the Hearing Aid.

In country the studies that have been conducted are mainly related to performance of Hearing Aid or its impact study on social wellbeing. Though there has been development in the field of Hearing Aid still it is not always user friendly. Especially, when we are talking of Senior citizens who have problems with eye sight, nerve issue which further complicates the problem. The Digital Advanced Hearing Aids which have come up does provides to a great extent the solution of clear hearing and bringing the gap narrow of artificial and normal. But the usage especially the adjustment which needs to be provided by the Hearing user does sometimes becomes a really challenging.

The major issues can be rectified by Hearing Aid Professionals. But many a times due to communicational challenges the problems do not get resolved. The problem at times, persist a long period of time. The paper had tried would to investigate the hurdles which the senior citizen finds while using the Hearing Aid. Thereafter, a series of strategies would be identified to showcase the probable solution to the problem.

To our knowledge, only three peer-reviewed scientific articles in the field of Audiology have explicitly addressed and investigated the patient's pathway toward seeking help and obtaining hearing aids (Grutters et al., 2007, 2008; Smith et al., 2008). Further, Grutters et al. (2007, 2008) did not provide experimental data on how the journey affects patients' decisions to pursue amplification. For example, Grutters et al. (2007) evaluated the attitudes of professionals (General Practitioner [GP], hearing aid dispenser, ENT specialist, and clinical audiologist) and patients toward a direct referral pathway for hearing aid fitting (dispenser) as opposed to an alternative route (via the GP and ENT specialist and clinical audiologist). The hearing-impaired persons, the GP's, and the hearing aid dispensers generally had positive attitudes toward the direct pathway, whereas the ENT doctors and the clinical audiologists had negative concerns about the direct referral. In an additional study, Grutters et al. (2008) evaluated patients' preferences. However, it was not examined how the different pathways affected hearing aid uptake or success with the fitted hearing aid. Smith et al. (2008) examined the efficiency of an assess-and-fit pathway and compared it to traditional patient pathways in the United Kingdom.

Many people who would benefit from wearing hearing aids do not use them. Of adults 18 years old and older with impaired hearing, in a survey conducted by WHO 78% do not own a hearing aid. As the age increases, the need for hearing instrument assistance becomes nearly universal (Datan, Rodeheaver, and Hughes 1987; Garstecki and Eller 1998), but even among the hearing impaired who are 65 years and older, 61% do not wear hearing aids (Garstecki and Eller 1998; Kochkin 1998; National Centre for Health Statistics 1994).

The process of buying a hearing aid can be initiated by self-discovery that one's hearing is not as effective as it had been formerly, or through prompting by members in one's social environment, friends, or co-workers, but usually a spouse or family member whose own quality of life has been affected by the focal person's hearing loss. The consumer/patient may discuss with his or her physician their hearing disability and proceed to an audiologist or hearing instrument specialist to have their hearing tested, with the intention to buy a hearing aid, and so forth. Most people who have been identified as at least somewhat hearing impaired, and who should initiate this process fail to follow-through doing so.

Patient conformity (e.g., making an appointment to see an audiologist upon recommendation by a family physician) is important and challenging to achieve in many areas of health promotion. In our study, we seek to understand possible reasons for resistance to the particular intervention of buying and wearing a hearing aid. Further, it needs to be noted that may be less than 1% of total Hearing-Impaired Persons use Hearing Aid. But in the selection process there are multiple factors which affect the decision making.

### **Preliminary Findings of the Literature Review**

A literature review can broadly be described as a more or less systematic way of collecting and synthesizing previous research (Baumeister & Leary, 1997; Tranfield, Denyer, &

Smart, 2003). An effective and well-conducted review as a research method creates a firm foundation for advancing knowledge and facilitating theory development (Webster & Watson, 2002). By integrating findings and perspectives from many empirical findings, a literature review can address research questions with a power that no single study has.

In our Literature review we have tried to collect the research gaps from the Scholarly works conducted by Researchers globally considering our topic and objective of study we are conducting. We came across different Theories provided by different scholars which related to behavioural, Psychological, Personality traits. It did guide to frame the objective of study and research questions.

The location, habitat, culture, religion, ethnicity does have its impact on the people's selection of Hearing Aid. In the study Rebecca, Nalwanga 2019 "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 the researcher had spoken about the factors which relates to the factors which people consider especially in Senior citizen. The impact of different forms of media communication on both implicit and explicit attitudes toward hearing aids(Claudia Manzi, Roberta Adorni, Gabriele Di Ciacca, April2021). The preliminary analysis highlighted an over-representation of "technical" and "medical" terms in the corpus linguistic commonly used by the press.

In the works of F B Nurmkhameduva, Z D Egamberdieva, D sh. Toshpulatova, D Sh Madjitova May 2021, indicated quality of life associated with hearing in patients suffering from mild SHL, using the SSQ questionnaire - speech, space and quality of hearing. The study does not consider the physical comfort and ease of using the hearing aid. It considers Quality of Life is improved by SSQ method but there are other factors as well which are not included in the study. Similar, work was identified in the works of Bennett, Rebecca J, Laplante-Levesque, Feb 2018 where the researcher have mentioned the perspectives of hearing aid owners and hearing healthcare clinicians to the problems that can arise after hearing aid fitting. These perspectives have been generated as a conceptual framework to gain a better understanding of these problems. The study does not consider the expectation of the consumers as to post sale service. It only relates to the study on the purchase intent on the fitting parameter.

In the works of Elham Mahmoudi, Philip Zazove, Michelle Meade, June 2018 and Nielsen, Elisabeth July 2018 the study tries to depict the area which holds promise to increase in cost-efficiency, enable better access to care, and improve patient outcomes and satisfaction. Despite the increasing interest in this field, an up-to-date picture of recent research in the area of health for adults with HAs is lacking.

The studies does indictate that along with financial parameter, social, ethnicity, religion has its impact on the purchase of Hearing aid. Further, Social Stigma (D W Maidment & T S Wege, April 21) does impacts the selection of Hearing Aid. In needs to be considered that people do not accept Hearing Aid as a first choice option. There are made to select the Hearing Aid (Katherine Sternasty, Sumarjit Dhar, March 21). Needs for proper counselling is really required to overcome the obstacles in the selection of Hearing Aid.

▪ **On the basis of literature review the following constructs have been identified**

LR 1: Quality of life, spirituality, social integration and chronic diseases

LR2: Hearing Aid effectiveness and Life.

LR3: Senior citizens are interested in Hearing Aid but they are reluctant to use.

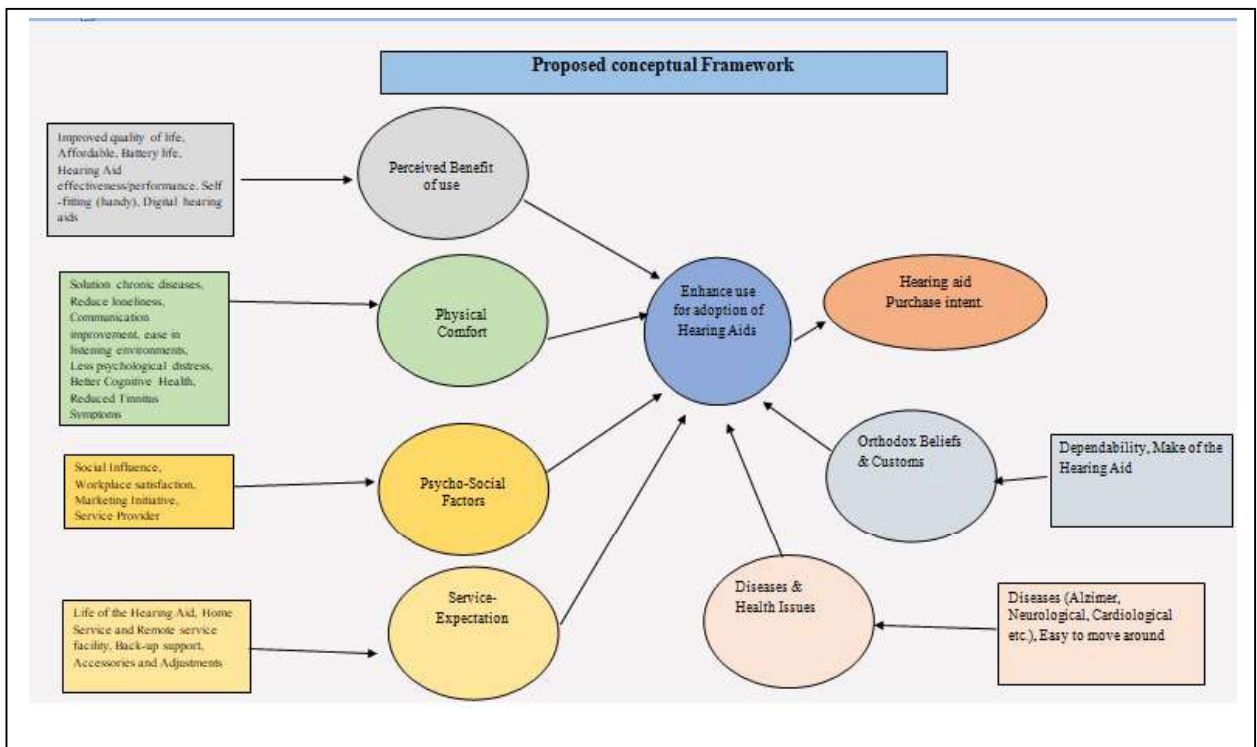
LR4: Education level, income level & Geographical area of residence

LR5: Diseases and Health Issues

LR6: Orthodox Beliefs, Spirituality, Rituals and Customs

If we further, analyse the construct. We come across the 4 major construct which is mentioned below:-

- ❖ Perceived Benefit
- ❖ Physical Comfort
- ❖ Psycho-Social Factors
- ❖ Reasonable Expectation



## **Research Gaps Identified**

In our Literature Review we have identified there needs to be a holistic study on the needs for Hearing Aid selection. Beyond the Medical findings there are inherent reasons starting from socio-economic barriers, Societal Norms and Economic condition. We have tried to stress on the four main pillars Perceived Benefit of Use, Service Expectation, Pshyco-social Factors and Physical Comfort which are key factors on the selection Hearing Aid in undertaken. The studies undertaken in our Literature review does consider that there is scope of detailed research on the above factors. Further, in case of data analysis we would be able to derive the factors which are pre-dominatingly responsible.

Hypothesis:

The Hypothesis that we have constructed based on the Literature review we have conducted is provided below:-

Perceived Benefit of use

H01 -There is no influence of Perceived Benefit of use on intention to buy hearing aids for End Consumers. (B to C)

H02-There is no influence of Perceived Benefit of use on intention to buy hearing aids for Medical Professionals( ENT &Audiologist)( B to B)

H03- There is no influence of Perceived Benefit of use on intention to buy Hearing Care Professional/Hearing Aid Clinic (B to B)

Physical Comfort

□ H04- There is no influence of Physical Comfort on intention to buy Hearing aids for End Consumers.

H05- There is no influence of Physical Comfort on intention to buy Hearing aids for health Professionals (audiologist).

H06- There is no influence of Physical Comfort on intention to buy Hearing aids for Hearing Care Professional/Hearing Aid Clinic

Psycho-Social Factors

H07- There is no influence of Psycho-Social Factors on intention to buy Hearing aids for End Consumers.

H08- There is no influence of Psycho-Social Factors on intention to buy Hearing aids for health Professionals (audiologist).

H09- There is no influence of Psycho-Social Factors on intention to buy Hearing aids for Hearing Care Professional/Hearing Aid Clinic

## Service Expectation

Ho 10 – There is no influence of service on intention to buy Hearing aids for End Consumers.

Ho 11- There is no influence of service on intention to buy Hearing aids for Health Professionals (ENT/Audiologist).

Ho 12- There is no influence of service on intention to buy Hearing aids for Hearing Care Professional/Hearing Aid Clinic

## The relevance of Projected Findings:

The result would definitely give an insight into how can one handle the issues of Hearing aid post care challenges. It will also let us know the relationship between Hearing Aid usage and satisfaction derived from the aid. Further, we can identify whether there is any positive relationship exists within the broad spectrum of Hearing Aid usage on the user's satisfaction. Further, this study through 6 constructs will consider the Psychosocial Factors, Ease of Using Hearing Aid & other construct will provide a unique study of its kind.

This study as other management studies would help future researchers to understand the factors which do impacts the purchasing intent of consumer. Though it is medical equipment it has many features which are common with many Electronic Durables (such as Laptop, Mobile Phone, iPod etc.). But exactly they are not the same. The Hearing Aid Manufacturer will find this study useful. It will help them to consider the factors that should be considered. The features that need to be incorporated in the product which will bring much more appeal to consumers.

## Conclusion

Hearing Aid is one of the solutions to the impairment. The acceptability of the people varies. There are various reasons for non acceptance. Further, the development of Medical Science and modern day's technology People have shown intent for acceptance. Social Media namely Facebook, Instagram, Twitter, Koo Etc. does direct and motivates peoples thought and idea. It needs no introduction that people do get to resolve and know many queries and news from this media. Though there are positive and negative effects of all this, the opinion of the people are based on this inputs. Though the success rate varies from person to person. It's for sure it does have an impact. The success rate depends from choosing the hearing aid to the point of post-sale hearing management. The new digitization of technology such as Artificial Intelligence, Cloud Computing etc. there are more new advancement in the offerings. Further, it will increase the success rate satisfied Hearing Impaired persons and more people having this ailment will look for solution.



Maybe, the technological innovation and more usage of Hearing aids among the middle aged group will increase the acceptability of hearing aid use. The stigma of nonuser will take time to get removed from the society. The onus is on the manufacturer and hearing care professionals to work forward with the mental challenges of the users.

## 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, Viriginia 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](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, Gonsalez 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>
18. Sergei Kochkin, Marke Track VIII : The Key influencing Factors in Hearing Aid Purchase Intent-What factors would most likely, lead non-adopters to purchase hearing aids?, 2012, Link:-  
<https://www.semanticscholar.org/paper/MarkeTrak-VIII%3A-The-Key-Influencing-Factors-in-Aid-Kochkin/747d58e70006969f72da3d4044c4059e3556fe44>
19. Determinants of Hearing-Aid Adoption and Use among the elderly: A systematic review, Janet Tto Yee Ng & Alice Yuen Loke, Feb 2015, DOI: 10.3109/14992027.2014.966922
20. The Nature of Communication throughout Diagnosis and Management Planning in Initial Audiological Rehabilitation Consultations, Caitlin Grenness,Lousie Hickson, Ariane Laplante-Levesque et.al, Jan 2015, doi: 10.3766/jaaa.26.1.5.
21. Implicit & Explicit Attitudes towards Hearing Aids: The Role of Media Language, Claudia Manzi, Roberta Adorni, Gabriele Di Cicco, April 2021, <https://doi.org/10.1177/0261927X211009292>
22. Social Representation of Hearing Aids among people with Hearing Loss: An Exploratory Study, Chundu Srikant et.al, Feb 2021, <https://doi.org/10.1080/14992027.2021.1886349>
23. Motivational Interviewing for Hearing Aid Use: A systematic Meta Analysis on its potential for Adult Patients with Hearing Loss, Liu Alice, et.al., June 2021, [https://DOI: 10.1055/s-0041-1728755](https://DOI:10.1055/s-0041-1728755)
24. Assessment of the Quality of Life of Patients with a Mild Degree of Sensorineural Hearing Loss, F B Nurmukhameduva, et.al., March 2018, Doi: 10.1186/s12901-018-0051-6
25. Exploring Hearing Aid Problems:- Perspectives of Hearing Aid Owners and Clinician, Bennett, Rebecca J, et.al., Feb 2018, Doi: 10.1097/AUD.0000000000000477

26. Association between Hearing Aid Use and Health Care Use and Cost among Older Adults with Hearing Loss, Mahmoudi Elham, et.al., June 2018, DOI: 10.1001/jamaoto.2018.0273
27. E-Healthy and the Hearing Aid Adult patient journey: A state-of-the art-review, Paglialonga A, et.al, July 2018, Doi: 10.1186/s12938-018-0531-3.
28. Evaluation of the Self-Fitting Process with a commercially available Hearing Aid, Covery E, et al., Feb 2017, Doi: 10.3766/jaaa.15076.
29. Barriers to Hearing Aid Adoption run deeper than price tag, Sternasty K, March 2021, doi:10.1001/jamaoto.2021.0172
30. The Association between Non-communicable Disease and Hearing Aid adoption in older adults with Hearing Loss, Maidment D W, et al., April 2021, Doi: 10.1080/14992027.2021.1910740