



Analyzing Factors Responsible For Non- Acceptance of Hearing Aids

Anjan Niyogi¹ & Dr. Pallavi Kumari²

¹ Research Scholar, ICFAI University Jharkhand, Email: anjanniyogi@gmail.com

² Associate Professor, ICFAI University Jharkhand, Email: pallavikumari@iujharkhand.edu.in

ARTICLE INFO			ABSTRACT
Article History:			<i>Hearing loss relates to missing certain sounds. The problem is certain sounds in the hearing nerve in our brain don't get enough stimulation. The nerves need stimulation. When it is not stimulated the nerve stops working. When the nerve stops working, there arises complexity in our hearing nerves, which processes sounds that we hear.</i>
Received:	January	1, 2022	
Revised:	January	20,2022	
Accepted:	February	5,2022	
Available Online:	February	25,2022	
Keywords:			<i>Similar to exercising which we do to keep your body healthy, our ears also need to hear sounds and recognize them to function at its best. So, the longer waiting time prior to hearing aids purchase, or to wear them, the less stimulation the brain and hearing nerves get. The speech recognition becomes worsen. Studies by WHO shows that nearly 40% of the age group in between age group 55-74 yrs (McCormack A. & Fortnum H., May2013) suffers from this type of problem. If we compare with vision impairment Hearing Impairment users do not take this matter quite seriously. The problem of Hearing Loss is not only restricted to senior citizens but all age groups. Once the nerve is affected, there is no way to reverse the damage. There are also other side effects of not wearing Hearing aids. These include higher risk of cognitive decline, forgetfulness, depression, low performance at work leading to income, less productivity and the list goes on.</i>
<i>Hearing Aids usage, Physical Comfort, Psycho-Social Factors, Situational Factors, Financial Factors, Appearance</i>			
JEL Classification Codes:			<i>The factors which responsible for non acceptance are not single but rather they are multi faced. Starting from financial problems, Physical looks, Perception, discomfort, are some of the few reasons. In this paper has tried to identify the factors which are responsible for this challenge. There needs to be further research and findings which can provide more factors responsible. Major studies in this field in the near future can identify many other factors which are even date beyond our knowledge.</i>
O15, O47, R13			



INTRODUCTION

Hearing problem is an important public health problem; nearly 40% of the age group in between age group 55-74 yrs (McCormack A. & Fortnum H., May2013) does suffer from Hearing Loss. Compared to vision impairment People suffering Hearing Impairment do take this issue seriously until the point it is really alarming. The problem of Hearing Loss is not only restricted to senior citizens but it is all age group. But Obviously Age related Hearing Loss is one of the most common forms of Senso-neural Hearing Loss (Grattan & Vazquez, 2003). Senior Citizen generally tends to hearing deafness due to nerve response decoration. The feature is quite common but the acceptance is not.

The quality of life that older persons experience when dealing with the problem of hearing loss is often considered to be bad (Chiaetal, 2007, Heine & Browning 2004). Depression and anxiety may result if this problem is not addressed early enough with a preventive remedy (Gopinath et al, 2009). Hearing, in the words of WHO Director-General Tedros Adhanom Ghebreyesus, is priceless. When hearing loss is not treated, it has a detrimental effect on people's capacity to communicate, learn, and make money. People's mental health is impacted, and relationships are made more difficult as a result of this. According to the World Health Organization, India is home to 63 million people who have substantial hearing loss. According to a recent NSSO survey, 291 people per one million people suffer from acute hearing loss (NSSO, 2001). There is a substantial percentage of children between the ages of 0 and 14 who are affected by this problem.

A sizable percentage of the population, as illustrated on the graph, is afflicted by this condition. Huge numbers of people refuse to see Hearing Aids as a viable option for their hearing impairments. There is a weird belief that persons who are deaf use hearing aids. The use of Hearing Aids may potentially diminish one's remaining hearing. These myths are unsupported by research. We won't be able to locate any evidence of this viewpoint if we screen and research. However, the stigmas have been instilled in the minds of the public. Ideas are passed down from one generation to the next, from one region to the next, and from one person to the next. We are conducting a study to find out why people don't use hearing aids.

Preliminary Findings of the Literature Review

Hearing aid use is on the rise, as evidenced by the fact that the number of people who use hearing aids is outpacing the number of persons who are deaf. Cochlear Implants are also commonly used to treat hearing loss, although they aren't the only option. Implants, obviously, have a significantly lower success rate and are far more expensive. Only around 25% of those who could benefit from hearing aids actually do so (e.g., Kochkin, 2000; Meister, et al., 2008). However, as compared to the developing and impoverished countries, this figure may be far lower.

As a result of hearing loss, auditory stimuli are reduced in quality (Hums & Roberts 1990). Due to the increased acoustic signal, speech recognition becomes more difficult, which primarily affects those with hearing impairments (McCoy et al. 2005). Additionally, in daily life, people hear speech accompanied by a range of sounds, such as clamorous surroundings, making it much more difficult to communicate (Algren et al. 2005). Hearing-impaired listeners, according to previous study, are more likely to suffer from these types of adverse situations in terms of speech perception performance than their hearing-impaired peers (Hagerman 1984; Plump 1986; Hopkins

et al. 2005). Keep up with continuing auditory streams may raise the cognitive load of listening, according to several studies (Shinn-Cunningham & Best 2008). Listeners with hearing impairments have to put in more effort in order to understand what is being said (McCoy et al. 2005; Romberg et al. 2013). Increased listening effort can lead to increased levels of mental anguish and weariness (Stephens & Hutu 1991; Kramer et al. 1997, 2006), a lack of energy, and stress-related sick leave from work (Stephens & Hutu 1991; Kramer et al. 1997, 2006). (Gatehouse & Gordon 1990; Kramer et al. 2006; Edwards 2007; Hornsby 2013a, b). Nightingale and others (2009). Due to a lack of leisure and sociability, people with hearing impairments may have a lower quality-of-life (Weinstein & Vestry 1982; Demorest & Erdman 1986; Strawbridge et al. 2000). The extra effort required for successful listening may be a contributing factor. Listening effort is being studied by scientists and clinicians alike in an attempt to better understand the effects of hearing loss on communication (Gosselin & Gagné 2010, McGarrigle et al. 2014).

Several researchers have identified potential obstacles to the acquisition and usage of hearing aids (e.g., Meister, et al., 2008). These include stigmatisation, misunderstandings about how hearing loss affects people's ability to communicate, expectations that are unrealistically high, and a lack of understanding of the benefits of hearing aids (Meister et al. 2008). (Helvik, et al., 2008).

Lack of actual data on HA non-use is a major problem. This could be a contributing factor to the lack of knowledge of professionals regarding improper HA utilisation. In contrast to people who reject the recommendation and prescription for Has, HA users do not generally require the professional, emotional, and educational support from hearing healthcare experts. This is definitely problematic. Linssen et al. (May 2020) used semi-structured interviews to investigate the thoughts and feelings of elderly Dutch adults about their non-use of HL and HA. Although the results shed light on how people view their HLs and HAs, they were limited in scope and lacked precision in many areas.

Older adults' perceived hearing difficulties, ageing, positive attitudes toward hearing aids, and the support of significant others are the most important factors for older adults' adoption of hearing aids (Hickson et al., 2014; Knudsen et al., 2010; Laplante-Levesque et al., 2012; Meyer & Hickson, 2012; Pronk et al., 2017, 2019; Ratanjee-Vanmali et al., 2019; Ridgway et al., 2016; Sawyer, Armitage, et al., 2019; Simpson et al., 2019; Tahden et al., 2018). Stigma and erroneous ideas about hearing loss and appearance have been demonstrated to have an impact on the number of people who use hearing aids (Southall et al., 2010; Wallhagen, 2010). In the United States, about 15% of people who don't use hearing aids return them after a one- to two-month trial period, while the remaining 85% normally accept them (e.g., Kochkin, 2000).

However, a big number of people just utilise it for a short time. Less than an hour a day could be the norm (Aazh et al., 2015). According to MarkeTrak 10 results, these facts hold true (Powers & Rogin, 2020). An estimated 23% of those who had previously owned hearing aids did not have them anymore, according to the data in the study. More than a third of those who tried hearing aids rejected them after a trial, according to a new study. Of those who now wear hearing aids, 77% have varying levels of use. 72 percent of current hearing aid owners claimed daily use, 17 percent weekly use, and only 2.7 percent reported never using them.

Based on the Literature review we had identified the major factors which work as barriers. The barriers which prevent from Hearing Aid Usage is mentioned in the diagrammatic view.

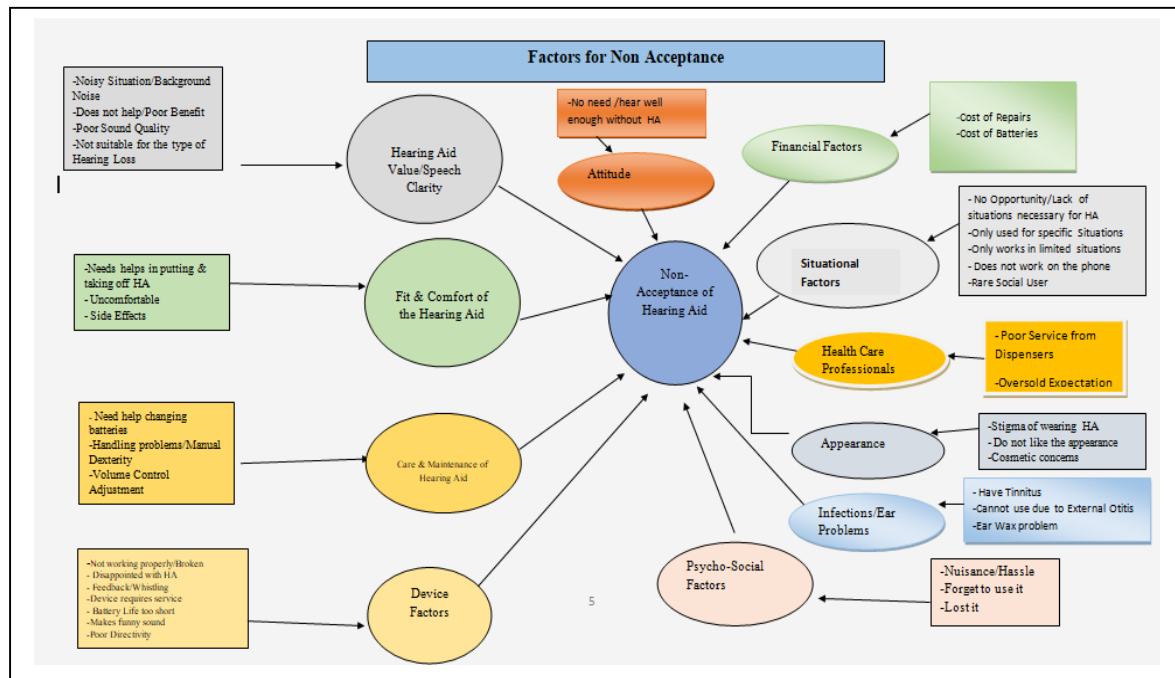


Figure : Conceptual model

Research Gaps Identified

In our Literature Review we have identified there needs to be a holistic study on the needs for the factors responsible for non acceptance of Hearing Aid. There are Medical reasons as well as there are inherent reasons starting from socio-economic barriers, Societal Norms and Economic condition. Based on the review of the Literature we have identified the following barriers which we would discuss. The Gap arises from the fact every researcher have identified one perspective or the other. But generally there are multiple factors which act as a pivotal tool in this blockage. A detailed statistical tool application using research methodology would provide us the indicators which are more aggravating the problem compared to others. Obviously we would consider this in a future paper.

• Hearing Aid Value/Speech Clarity

People use Hearing Aid to communicate better. They do have expectations from it. But once a person is fitted with the hearing Aid. The user gets lots of noise which are quite normal in nature but are amplified. The sounds received includes background noise for example sound of ceiling fan, Air conditioner, horn and sounds of vehicles and all other noises which are there in the room. But since the user did not hear this noise for a pretty long time this becomes too terrible to accept.

Further, People complain that the speech reception is poor. Even after using it they could hardly make up what is being spoken. Obviously in case when hearing deficiency is on the higher category speech clarity remains an uncaptured area.

• Fit & Comfort of the Hearing Aid

There are people who have multiple problems. Hearing Problem is just one of them. People suffering from nerve disease and vision problem do find difficulty to wear and take off the hearing

aid. They have to rely on somebody to do this job. But on a regular basis they do get that support. Further, even after wearing the HA the user might face some level of uncomfortable. People do complain of itching, generally people having dry skin does face this challenge. They might require some volume adjustment through the volume knob in the HA. The fitting might not be proper which results in buzzing noise, unfitness and below par hearing.

- **Care & Maintenance of Hearing Aid**

Compared to Specs hearing Aids needs much care and maintenance. The Instruments needs to be switched off when not in use. The batteries need to be changed on a regular interval. The tips which are inserted into the ear canal needs to be cleaned. If they are dirty brown then they hold wax which causes low hearing or no hearing at all.

In case of sophisticated instruments such as RIC, Custom Model weather protection guard needs to be replaced. In case of extreme cold and heat they do get bigger in size thereby restricting the sound inflow. Further, care needs to be taken to safeguard from water, moisture, sweat, oil and any other form of liquid contact. This is not always possible for the HA user. People do find these problems a challenge which is quite burdensome. They expect some form of HA which will be hassle free to use and will have the minimum maintenance issue.

- **Attitude**

There are certain complex and weird ideas generated. People do have the opinion that there hearing is quite sound and are able to hear what is being spoken. Even if they find difficulty in hearing they manage by putting hands on the ear or by nearing the distance. Many a times they make awkward gestures and ask to repeat. But they do perceive a strong believe that they have still good hearing. If they get use HA there residual hearing will be damaged. Further, they would be completely dependent on the HA. The idea does get much popularity when he gets some support of his peers who do share same opinion. Though there is no scientific logic to prove but people are very resistant to accept.

- **Device Factors**

There are certain expectations when one use the Hearing Aid. Obviously, the damaged that has occurred is permanent in nature. Hearing Aid does not restore the Hairs cells nor does any form of anatomical restructuring to make the ear normal. It is only meant as an amplification device which helps the impaired person to hear the sound. The sounds generally sounds like a tone received from a microphone which is very artificial and much different compared to normal hearing. It does take time to adjust with this new normal. Only regular usage as per advice of the Hearing Care professional does acclimatizes the user.

People complain that they are receiving funny sounds from the Hearing Aid. There is whistling and feedback from the Hearing Aid. They get disappointed with the performance. The level excitement comes down and with low motivation they avoid using it. Further, the complexity of use and maintenance mentioned earlier also complicates the matter.

- **Situational Factors**

People use Hearing Aid on a selective basis. Often they mention that since they do not have much to say and remain alone they do not use the Hearing Aid. Time specific use, such Social

gathering, Phone communication, Television viewing, listening music are some of the rare period they adopt hearing aid. The adaptation of the Hearing Aid is one of the prime requirements for clear hearing. It takes time to get used to this amplified artificial environment which is quite different from normal.

Further, when the Hearing deafness is on the higher side people do not get to hear even if they are in a gathering or while communicating in phone. There are many users who use the Hearing Aid one in one ear even though they have issues in both ears. Strong counselling needs to be provided to make them understand that they need to adopt the hearing aid rather than rejecting it. Once in a while on a specific situational requirement HA would provide the solution.

- **Financial Factors**

Hearing Aid is commercially quite expensive compared to specs. Obviously there are Government aids and grants but the quality of those are quite poor. Further, not many people do get that benefit. There are regular expenses which are recurring in nature such as cost of batteries, repairs etc. People having limited income and pension based survival does find it a big challenge. They generally compromise in many cases due to this financial challenge. This ultimately leads to unproductive hearing, Non Usage of Hearing Aid. The perception about Hearing Aid also becomes negative.

- **Psycho-Social Factors**

There are certain Psycho-Social Factors as well which does works as a hindrance. People tend to forget to use the Hearing Aid. They might have developed dementia starting from week to strong form which increases their forgetfulness. There remain high chances of losing it as well. The nuisance sound and uncomfortable creates a sense of rejection. If friends, relatives, spouse takes little cares in this many a times this challenge can be overcome. But the problem is not for a day but a regular one. SO, people who really cares and able to divest there time can provide a fruitful work. The mental perception of negativity would change if the support is there.

- **Health Care Professionals**

Hearing Aid is not just a product. In requires a great deal of service and care. Many a time's dispensers do not provide the information with detailed explanation. It needs to be noted that Hearing Impaired persons will not be able to understand all the information at one go. There needs to be constant connection between the service provider and user. If regular checkups are not conducted. Further, non information and explanation of the service provider can be fatal and works inversely on the Hearing Aid Usage.

Further, the expectations of users needs to clearly deliberated. There remain certain false myths and high level expectations. The reality check needs to mirrored to the user.

- **Appearance**

The looks of the Hearing Aid does have an impact on the acceptance of the Hearing Aid. Generally during the early days people do not accept the Hearing Aid. They people they will somehow manage without the Hearing Aid. As the Hearing loss increases the challenges of communication increase. They tend to accept to purchase Hearing Aid. Many a times the Budget and High degree of Hearing Loss tend to make them accept Hearing aids which are much bigger in size. They do not like to reveal their hearing loss to others. The physical looks do make them avoid this device. Further, they might have purchased the Hearing aid. But they tend to avoid using when they are in gatherings and communicating with outsiders and large number of people. This increases the challenge and the sense of discomfort.

CONCLUSION

Hearing Aid is one of the solutions to the impairment problem. Though Hearing Aid do not come up readymade solution. But if people use it as prescribed by the professional then this discomfort can be overcome. Further, Hearing does makes an impact on the quality of life. The resistance and avoidance to public gathering, socialization tends to erode if Hearing Aid is used on a regular interval. Proper Hearing Aid needs to be selected and purchased. Many a time people do selection without much knowledge and information. Though they purchase the aid they do not derive the benefits of use.

The factors responsible for non acceptance are not single point. But there might be multiple reasons for non acceptance. Starting from financial implications, looks and appearance, attitude issues, discomfort, feedback and noise interruption are some of the few reasons. The list is a long one and never ending. In this paper effort has been taken to pen down most of the factors which are responsible for this challenge. But we can't say it's a holistic one. There needs to be further research and findings which can provide more factors responsible. Statistical application with research methodology can provide the results as to which factors are more likely to have a major role in this problem.

The challenges of the non acceptance do a long way. Family intervention, role of children, spouse, relatives, and friends does have a major role in acceptance. The Role of the clinician in Hearing Aid selection and information sharing is not lighter either. They also need to incorporate the best practices and proper counseling considering physio social factors and the myths all around. Proper information backed by due care does go a long way in resolving the problem. 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. plays an important role in motivating people. The positivity and negativity of this information impacts the user to come up with their decision. Further, the myths are many times addressed when long term user's shares their quality of hearing and how it has changed their social association. The success rate depends from choosing the hearing aid to the point of post-sale hearing management. The new digitization of technology will obviously play its part such as Artificial Intelligence, Cloud Computing etc.

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
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, Theimpactof 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>
 24. Assessment of the Quality of Life of Patients with a Mild Degree of Senso-neural 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