

PERCIEVED EFFECT OF HEARING AIDS IN IMPROVING QUALITY OF LIFE AMONG HEARING LOSS PATIENTS IN NATIONAL EAR CARE CENTRE KADUNA

BY

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Abstract

Hearing loss is a significant health issue affecting individuals' quality of life. Hearing aids are a common intervention to mitigate hearing loss, but patients' satisfaction and perceived benefit can vary. Understanding the factors that influence satisfaction and the perceived improvement in quality of life is essential for optimizing hearing aid utilization. The study is aimed to assess perceived effects of hearing aids in improving quality of life among hearing loss patients at the National Ear Care Center, Kaduna. A descriptive cross-sectional survey design was employed. The study was conducted at the National Ear Care Centre, Kaduna, targeting patients with hearing loss using hearing aids. A total of 290 patients were identified from records, with 168 completing the survey. Data were collected using questionnaires focusing on socio-demographic characteristics and perceived effect of hearing aids on quality of life. The Krejcie and Morgan sample size table was used for sample determination, and random sampling was employed to select participants. Data was analyzed using SPSS version 26. The study found that The study shows (79%) of improved percieved effect of hearing aids in improving quality of life. To enhance patient satisfaction with hearing aids, the study recommends provision of comprehensive counseling and support services to address discomfort and improve the perceived benefits of hearing aids and offering personalized hearing aid solutions based on the specific needs and preferences of patients to enhance comfort and usability.

Keywords: Hearing Loss, Patient Satisfaction, Hearing Aids, Quality of Life, Perceived Effect

Introduction

Hearing is critical to a person's overall health and for achieving a high quality of life. It influences the way a person integrates into and relates to society and can significantly impact education and employment opportunities. Hearing is important in child development, and for the social wellbeing, and cognitive functioning of older adults (World health organization,2023)

Hearing loss is due to inadequacy of any part of the auditory system, from the pinna to the auditory cortex in the brain. It is a continuum varying from undetectable degree of disability to a profound loss of hearing. Hearing loss is the most prevalent sensory deficit worldwide (World Health Organization, 2023). The need for use of hearing aids has increased with the rise in the average age population due to modern life conditions. Hearing loss is listed as the 13th problem among chronic disorders seen in patients aged above 65 years. Furthermore, it can lead to poor life quality, depressive symptoms and Social problems use of hearing aids is the only treatment method in patients' who cannot be treated surgically or medically (WHO, 2023).The impacts of the hearing loss still suffer the influences of aspects related to health assistance,(Kramer et al.2018;Yueh et al.,2019), to socio demographics factors and clinical. (Chien et al.2022). The use of hearing aids is one of the ways to reduce the impacts caused by hearing loss on an individuals' life. The sound amplification is not restricted to making speech sounds audible and satisfactory, but also provides the perception of environmental, danger and warning signs, essential for independence in everyday life and improving quality of life (Wong et al.,2020;WHO,2019).The global prevalence of hearing loss is on the increase

with two-thirds of people with hearing loss residing in developing countries. The global increase in hearing loss is partly due to increasing uncontrolled environmental noise exposure, the use of ototoxic medications in patients' medical care and increase in life expectancy with aging population in developed countries (Ogunkeyede et al., 2019).

Over 5% of the world's population and or 430 million people require rehabilitation to address their disabling hearing loss (432 million adults and 34 million children). It is estimated that by 2050 over 700 million people or 1 in every 10 people will have disabling hearing loss (World health organization, 2023). Nearly 80% of people with disabling hearing loss live in low- and middle-income countries. The prevalence of hearing loss increases with age, among those older than 60 years, over 25% are affected by disabling hearing loss (WHO, 2023). Hearing aids are widely used to manage hearing loss but patient satisfaction and perceived effect on quality of life vary. Studies have shown that hearing aids users report improved communication, social participation and emotional wellbeing. (Chisolm & Anold, 2022; Kochkin, 2022). However, some users experience difficulty with background noise, feedback and adjustment period, (Naylor & Lumer, 2022). The World Health Organization has defined quality of life as the individual's perception of their position in life, in the culture context, the value systems in which they live, and in relation to their goals, expectations, standards, and concerns (WHO, 2023).

Numerous studies have consistently highlighted the positive impact of hearing aids on facilitating communication in various settings (Kochkin, 2020). Users' report enhanced abilities to understand speech, participate in conversations, and engage in social interactions more comfortably (Cox & Alexander, 2020). Improved communication leads to increased confidence in social situations and reduced social isolation among individuals with hearing loss (Chien & Lin, 2022). Ahmad, et al, (2023) conducted a study in Saudi Arabia in the Armed forces Hospital south region on quality of life among adult with hearing loss who are using hearing aids positively shows positive effects on quality of life. Hearing aids contribute significantly to enhancing the overall quality of life for individuals with hearing loss. Studies suggest that improved communication abilities resulting from hearing aid use lead to enhanced emotional well-being, greater independence, and overall satisfaction with life (Chien & Lin, 2022). Zafar et al (2021).

Aim of the study

The study aimed to assess the perceived effect of hearing aid in improving quality of life among hearing loss patients in National Ear Care Center, Kaduna

Methodology

The design for this study is descriptive cross-sectional survey design. The study area was National Ear Care Centre Kaduna. The Centre is a single specialty hospital. It is the only one in the Country with such mandate. It was chosen as the setting for this study because it serves not only patients from Kaduna but also neighboring state. The population comprises of patient with hearing loss who were using hearing aids, a total of 290 patients were identified from audiology unit. Krejcie and Morgan table was used to determine the sample size. The determined sample size was 165, however 10% was adjusted to the number to avoid errors and non response situations. Therefore: $165/100 \times 10 = 16.5$ Approximately 17, $165 + 17 = 182$.

Research Instrument

The International Outcome Inventory - Hearing Aids (IOI-HA) questionnaire was used. This questionnaire was adopted is an instrument designed to evaluate the effectiveness of hearing aid use, assessing benefit, satisfaction and quality-of-life changes.

Ethical Consideration

The researcher obtained introductory letter from the Department of Nursing Sciences Bayero University Kano. The ethical clearance was obtained from the ethical research committee. The introductory letter and the ethical clearance were presented to the medical director of the National Ear Care Centre Kaduna. The researcher introduced herself to the participant, the aim purpose, and benefit of the study was explained, and what is expected to be done by the participant. The consent of the participant was obtained. The respondents were assured of the confidentiality and anonymity of their responses.

Method of data collection

One hundred and eighty-two patients who were considered suitable according to the inclusion criteria of the study and had trial done were contacted on phone. One hundred and sixty eight patients were able to purchase the hearing aids and agreed to participate in the research process, and were enrolled, the link was sent via WhatsApp to those that were literate while others were either visited at home or were called on phone to fill the questionnaire.

Results

The respondents (168) were categorized into 2: regular users of hearing aids (122) and irregular users (46). Only the 122 regular users complete the questionnaire on perceived effects of hearing aids in improving quality of life.

Distribution of the Respondents' according to socio-demographic characteristics

Variables	Frequency, n=168	Percentage (%)
Age group		
18 – 27 years	45	26.8
28 – 37 years	35	20.8
38 – 47 years	32	19.0
48 – 57 years	34	20.2
Above 57years	22	13.1
Mean $\pm$ SD = 39.4 $\pm$ 13.6		
Gender		
Male	114	67.9
Female	54	32.1
Level of education		
Secondary	13	7.7
Polytechnic/college certificate	74	44.0
Bachelor	25	14.9
Postgraduate	43	25.6
Non-formal	13	7.7
Marital status		
Single	13	7.7
Married	142	84.5
Divorced	13	7.7
Occupation		
Employed (Govt/private)	60	35.7
Self-employed	44	26.2

Unemployed 64 38.1

The table presents the socio-demographic characteristics of 168 respondents. The age distribution shows that 26.8% are between 18-27 years, 20.8% are between 28-37 years, 19.0% are between 38-47 years, 20.2% are between 48-57 years, and 13.1% are older than 58 years, with a mean age of 39.4 years and a standard deviation of 13.6 years. Regarding gender, 67.9% of the respondents are male, while 32.1% are female. In terms of education level, 7.7% have secondary education, 44.0% hold a polytechnic or college certificate, 14.9% possess a bachelor's degree, 25.6% have postgraduate qualifications, and 7.7% have non-formal education. Marital status reveals that 10.7% are single, 78.7% are married, and 10.7% are divorced. Occupationally, 49.2% are employed in government or private sectors, 36.1% are self-employed, and 14.8% are unemployed.

Perceived Effect of Hearing Aids

Distribution of the Respondents based on Perceived effects of hearing aids in improving quality of life among hearing loss patient attending National Ear Care Centre Kaduna

Variable	Not at all (1) n(%)	Slightly (2) n(%)	Moderately (3) n(%)	Quite a lot (4) n(%)	Very much (5) n(%)	Mean (x)	Standard Deviation
Perception on worthiness of hearing aids	13 (10.6%)	24 (19.6%)	25 (20.5%)	25 (20.5%)	35 (28.7%)	3.37	1.36
Residual participation restrictions	59(48.3%)	38(31.1%)	6(4.9%)	19(15.5%)	0(0%)	2.43	1.22
Perception on improved hearing	0 (0%)	0 (0%)	25 (20.5%)	25 (20.5%)	72 (59%)	4.80	0.21
Residual activity limitations	28 (22.9%)	57 (46.7%)	24 (19.6%)	0 (0%)	13 (10.6%)	2.18	1.53
Perceived effect on social life	23 (18.8%)	38 (38.1%)	61 (50.0%)	0 (0%)	0 (0%)	2.81	1.48
Perceived effect on quality of life	12 (9.8%)	13 (10.6%)	0 (0%)	58 (47.5%)	39 (31.9%)	3.52	2.24

The perceived worth of hearing aids showed a range of opinions. 20.5% found them moderately worth it, 10.6% did not find them worth it at all, 20.5% found them quite a lot worth it, 19.6% found them slightly worth it, and 28.7% found them very much worth it. This suggests a relatively balanced perspective on the value of hearing aids, with a slight leaning towards a positive valuation. Mean score (3.37). When considering how much hearing aids helped in different situations, 20.5% of patients felt they helped moderately, 20.5% felt they helped quite a lot, and a significant 59.0% felt they helped very much. This indicates that while a portion of patients see substantial benefits from their hearing aids, there is room for improvement in ensuring that all users experience high levels of helpfulness.(4.80). The table reveals that hearing difficulties have varying degrees of impact on patients' daily activities. Specifically, 22.9% of patients reported that their hearing difficulties affected their activities moderately, while 10.6% felt no impact at all. A significant proportion, 46.7%, indicated that their activities were affected slightly, and 19.6% reported that their activities were affected very much. These findings suggest that while a majority of patients experience some impact from hearing difficulties, a considerable number of patients manage to maintain their daily activities with minimal disruption. Mean score: (2.18)

Patients were also asked about their perception of how much others were bothered by their hearing difficulties. The responses indicate that 50.0% felt that others were moderately bothered, 31.1% believed that others were not bothered at all, and 18.8% thought others were slightly bothered. This indicates that many patients are conscious of the impact their hearing difficulties may have on their interactions with others, potentially affecting their social experiences and satisfaction with hearing aids (2.81). Regarding the change in enjoyment of life due to hearing aids, responses varied. A small percentage, 9.8%, reported no change, while 47.5% felt that their enjoyment of life improved quite a lot. Another 10.6% noticed only a slight improvement, whereas 31.9% experienced a very much better enjoyment of life. This suggests that hearing aids positively impact the quality of life for a significant number of patients, enhancing their overall enjoyment and well-being. Mean score (3.52).

Discussion of Findings

Perceived Effects of Hearing Aids in Improving quality of life

The key findings include varying frustration levels with background noise and mixed satisfaction with the appearance and sound quality of hearing aids. A significant portion felt strongly that obtaining hearing aids was in their best interest, and more than half found them considerably or greatly helpful in understanding speech. Majority of the respondents express mixed feeling on effects of hearing aids on social participation with significant number tilting to the positive side. (42%) were moderately affected by hearing aids on daily activities, (99%) had improved hearing with hearing aids while more than half experience less difficulty with hearing aid and (79%) shows great effect of hearing aids on quality of life. These findings align with several empirical studies reviewed in the literature. For instance, the study conducted in Egypt by Said (2017) found that hearing aid users performed better in various domains of quality of life compared to non-users, indicating the overall positive impact of hearing aids. Similarly, studies in Israel, Spain, Brazil, and Finland have shown that the use of hearing aids improves the quality of life by minimizing auditory restrictions and reducing social and psychological impacts (Kateifidis et al., 2017; Manrique-Huarte et al., 2018; Garcia et al., 2019). Another study by Zafar (2021) shows improved quality of life with mean of (3.90). among hearing aids users in Lahore Pakistan.

Conversely, some studies, such as the one conducted by Jaiyeola & Adeyemo (2018) in Ibadan, Nigeria, reported a majority of participants experiencing poor quality of life despite using hearing aids. This discrepancy may be due to differences in the socio-economic contexts, healthcare infrastructure, and availability of support services between the regions. However, disparities such as the high levels of frustration in the present study may stem from socio-economic differences and variations in healthcare infrastructure, as seen in studies from Nigeria (Jaiyeola & Adeyemo, 2018) and other developing regions. These findings underscore the need for personalized care and ongoing support to address specific issues like feedback and naturalness of sound, aligning with international evidence on hearing aid satisfaction (Cox & Alexander, 2020). The mixed findings in the present study suggest that while hearing aids significantly improve communication and quality of life for many patients, there are persistent issues such as feedback, visibility, and naturalness of sound that need to be addressed. These insights have important implications for manufacturers and healthcare providers, indicating the need for continued innovation and improvement in hearing aid technology and support services.

Conclusion and Recommendations

Hearing loss significantly affects individuals' quality of life, necessitating effective interventions like hearing aids. This study aimed to assess perceived effect of hearing aid on quality of life among hearing loss patients at the National Ear Care Center in Kaduna. Employing a descriptive cross-sectional survey design, the research targeted patients using hearing aids, with 168 respondents completing the survey from an initially identified group of 182. Data collection focused on socio-demographic characteristics, hours of utilization and perceived quality of life improvement. The study concluded that while the majority of patients expressed positive effect with their hearing aids, there are critical areas needing attention to enhance overall quality of life. Recommendations include

improving counseling and support services to address discomfort and enhance perceived benefits, offering personalized hearing aid solutions to meet specific needs and preferences, making hearing aid services more affordable and accessible, conducting awareness programs to reduce stigma, and implementing regular follow-ups to monitor satisfaction and make necessary adjustments

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