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Original Research Paper

Audiology

THE SATISFACTION AND QUALITY OF LIFE WITH HEARING AIDS

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ABSTRACT

Background: Hearing loss significantly impacts quality of life , encompassing physical, mental and social dimensions. Hearing aids (HA) are vital in alleviating hearing-related difficulties. This study aimed to assess HA users' satisfaction and quality of life in Kasaragod, employing the Glasgow Hearing Aid Benefit (GHABP) and Short Form-12 Health Survey (SF-12). **Method:** The study included 40 participants above 18 years with moderate-severe bilateral Sensorineural hearing loss, using HA for more than 6 weeks. Data were collected using GHABP to evaluate hearing-related challenges & SF-12 to measure health-related quality of life. **Result:** High levels of HA use and satisfaction were observed, reflecting substantial benefits and residual disability. Physical and Mental health scores average 50.82 and 53.29, respectively, indicating overall positive quality of life outcomes. Significant correlations were identified between HA use and Physical health, and between residual disability and HA satisfaction. **Conclusion:** HA's substantially improved satisfaction and quality of life among users, reducing residual disability. Strong correlations were observed between HA use and satisfaction, as well as HA use and physical health.

KEYWORDS : Hearing aids, Quality of life, Satisfaction, GHABP, SF-12, Residual disability, Physical health, Mental health.

INTRODUCTION

Hearing loss is a pervasive health issue that significantly impacts individuals' quality of life (QoL), affecting social participation, emotional well-being, and cognitive functioning. The global burden of hearing loss (HL) is substantial, with over 1.5 billion individuals experiencing some degree of hearing impairment, of which 430 million suffer from disabling hearing loss (WHO, 2019). The situation is particularly pronounced in South Asia, where socio-economic disparities further exacerbate the challenges faced by individuals with hearing impairments.

The profound implications of untreated HL include accelerated cognitive decline, increased risk of dementia, mental health disorders, and cardiovascular issues (Fortunato et al., 2016; Jiang et al., 2020; Curti et al., 2020). Despite these challenges, hearing aids have been shown to mitigate the negative effects of HL by improving auditory perception, communication, and psychosocial functioning. Research has consistently demonstrated the association between hearing aid use and enhanced physical health, cognitive performance, and overall QoL (Dawes et al., 2015; Kitterick & Ferguson, 2018; Dillard et al., 2022).

However, satisfaction with hearing aids remains a multifaceted and underexplored area. Factors such as device-related features, user expectations, personality traits, and situational variables significantly influence satisfaction levels (Kozlowski et al., 2016; Silva & Scharlach, 2015). Understanding these variables is crucial to improving user satisfaction and ensuring the long-term effectiveness of hearing aids. The goal of the Auditory Health Care Services is to help those who have hearing loss by offering them specialised care. Health professionals must be able to show the community and resource providers that the treatments they offer improve the functional status and QoL of their patients in the present consumer-driven era of health care (Gagné, 2000).

Hearing-impaired people who use HA are thought to have greater self-confidence, stronger self-images, and better communicative functioning, resulting in overall higher self-esteem than those without HA, which makes it easier for them to participate in group activities and improve relationships. Since it enables gauging the consequences of an improved hearing capacity in activities of daily living, leisure, and communication, evaluating the QoL of HA users can be a significant indicator of the benefits of amplification. Data are scarce on the contentment and QoL of HA users in India. To create the crucial database required for educational and clinical objectives, research pertaining to the Indian population is required. The goal of the current study is to examine HA users' quality of life and satisfaction. Such findings are crucial for addressing gaps in hearing healthcare and improving the lives of individuals with hearing impairments, particularly within the socio-cultural framework of Kerala, India.

METHOD

Forty participants older than 18 years, who had been using their HA's for more than six weeks, were selected. This period was ample for the patient to get adjusted and form an assessment of the advantages gained from using the HA. The aim of the study is 1) To assess the benefits and satisfaction that individuals experience from using hearing aids. 2) To evaluate the overall impact of hearing aids on users' health status and quality of life.

Materials And Procedures:

For data collection, two questionnaires were used: The Glasgow HA Benefit Profile (GHABP) (Gatehouse, 1999) and Short Form Health Survey (SF-12) (Ware, Kosinski, & Keller, 1996). The GHABP is a self-report tool that evaluates auditory disability, auditory handicap, and hearing-aid benefits. The SF-12 is a questionnaire that individuals fill out to assess how their health affects their daily lives. The SF-12 comprised 12 questions, which generated two scales: one for evaluating mental and physical health and another for assessing overall health-related quality of life.

Data were subjected to statistical analysis using SPSS (version 27.0). The study used descriptive analysis to summarize the data. Pearson correlation analysis was employed to examine the relationships between variables, assessing their strength and significance through correlation coefficients and p-values. Scatter plots were used to visually interpret these relationships, particularly between hearing aid use, satisfaction, benefit, and health-related quality of life.

RESULTS

The sample consisted of 40 patients using a hearing aid, with a mean age of 45.25 years (± 14.69). The sample included 23 males (57.5%) and 17 females (42.5%)

	Initial Disability	Initial Handicap	HA use	HA Benefit	Residual Disability	HA satisfaction
N	40	40	40	40	40	40
Mean	80.0000	77.1875	96.8750	75.7813	17.1875	80.0000
Median	75.0000	75.0000	100.0000	75.0000	15.6250	81.2500
SD	14.37814	12.70268	6.32962	8.97239	6.60074	8.86147
Minimum	37.50	50.00	68.75	43.75	6.25	50.00
Maximum	100.00	100.00	100.00	93.75	31.25	93.75

Table 1 indicates the descriptive analysis of the GHABP questionnaire across six domains.

Table 1 Indicates The Following:

The "Initial Disability" had a mean score of 80.00, indicating a high average level of initial disability among participants. The "Initial Handicap" shows a mean score of 77.19, similar to the initial disability, suggesting that participants generally experience a significant handicap initially. For "Hearing Aid Use," the mean score is high at 96.88, suggesting most participants report high levels of hearing aid use. "Hearing Aid Benefit" has a mean score of 75.78, indicating that the perceived benefit of hearing aids is high but slightly lower than their usage. "Residual Disability" has a much lower mean score of 17.19, reflecting minimal disability persisting after hearing aid use. "Hearing Aid Satisfaction" shows a mean score of 80.00, reflecting high satisfaction levels among participants.

	Physical Score	Mental Score
N	40	40
Mean	50.8208	53.2920
Median	52.7500	54.4550
SD	6.29585	4.64524
Minimum	34.56	39.88
Maximum	58.07	57.75

Table 2 Indicates The Descriptive Analysis Of Physical And Mental Scores Of The SF-12

From Table 2:
For the "Physical Score," the mean is 50.82, suggesting overall positive physical well-being among participants. The "Mental Score" has a slightly higher mean of 53.29, indicating slightly better mental health compared to physical health. These descriptive statistics indicate generally high levels of hearing aid use, benefit, and satisfaction, along with positive physical and mental health outcomes. However, some residual disability remains, and variability in the initial disability and handicap scores suggests that participants may have started the intervention from differing baseline conditions.

Correlation Between The Dimensions Of SF-12 And GHABP:

		Physical Score	Mental Score
Initial Disability	Pearson Correlation	0.047	-0.078
	p-value	0.774	0.633
Initial Handicap	Pearson Correlation	0.310	-0.007
	p-value	0.052	0.967
HA Use	Pearson Correlation	.507	0.124
	p-value	0.001	0.444
HA Benefit	Pearson Correlation	0.120	-0.232
	p-value	0.459	0.150
Residual Disability	Pearson Correlation	-0.022	-0.096
	p-value	0.895	0.557
HA Satisfaction	Pearson Correlation	0.224	-0.114
	p-value	0.165	0.484

Table 3 Indicates The Pearson Correlation Coefficients Between SF-12 And GHABP.

From Table 3, the most notable finding is the significant positive correlation between hearing aid use and physical scores, which suggests a meaningful association. Other variables demonstrate weak or negligible relationships with physical and mental health.

Pearson Correlations between Residual Disability, Hearing Aid Use, and Related Variables:

The "residual Disability" showed a significant moderate positive correlation with initial disability ($r = 0.348$, $p = 0.028$). This indicates that higher initial disability levels are associated with greater residual disability, suggesting that those with more severe initial conditions tend to retain more disability after intervention. Additionally, residual disability has a significant moderate negative correlation with hearing aid satisfaction ($r = -0.428$, $p = 0.006$), indicating that higher levels of residual disability are linked to lower satisfaction with hearing aids.

"Hearing Aid Use" is strongly positively correlated with hearing aid benefit ($r = 0.538$, $p = 0.000$), indicating that increased hearing aid use is associated with greater perceived benefits from their use. Similarly, hearing aid use is moderately positively correlated with hearing aid satisfaction ($r = 0.446$, $p = 0.004$), suggesting that greater use of hearing aids contributes to higher satisfaction levels. The analysis revealed significant relationships, particularly the positive association between hearing aid use and both benefit and satisfaction, as well as the link between residual disability and both initial disability and hearing aid satisfaction.

DISCUSSION

The highest mean scores for initial disability (80.00) and initial handicap (77.19) indicate significant challenges faced by individuals with hearing impairment before using hearing aids. These results support the findings from previous studies (Lutman et al., 1987; Kramer et al., 1998). The high mean score of HA benefit (75.78) in this study underscores the significant improvement perceived by users. This finding aligns with the existing study by Horwitz and Turner (1997). The greater mean score for HA satisfaction with a mean of 80.00 in this study correlates with increased hearing aid use (with mean usage of 96.87), better hearing aid benefits (with a mean of 75.78) and reduced residual disability (with a mean of 17.18) which highlights the positive impact of these factors on user satisfaction.

In the present study, the SF-12 was used to assess an individual's overall health status and quality of life. The mean physical score of 50.82 suggests a positive level of physical well-being among participants, supported by a study by Dawes et al. (2015), which highlights that hearing aid users demonstrate better SF-12 physical health scores compared to non-users after 11 years. The slightly higher mean mental score of 53.29, compared to the physical score, suggested that participants generally report better mental health than physical health. Several previous studies have also shown that hearing aid use leads to improvement in social and emotional functioning, enhanced communication and reduced depression (Mulrow, 1990; Chisolm et al., 2007). However, some other researchers have found no significant differences in cognitive function or mental health outcomes between hearing aid users and non-users (Dawes et al., 2015).

CONCLUSION

In the GHABP, the participants reported significant challenges

before using HA, reflected by high initial disability and handicap scores. However, the use of HA made a significant improvement, with high mean scores for HA benefit & HA satisfaction. Residual disability was reported as minimal after using HA, which highlighted the effectiveness of HA in addressing hearing impairment. In the Short Form Health Survey, for the "Physical Score," the mean was 50.82, suggesting overall positive physical well-being among participants. The "Mental Score" had a slightly higher mean of 53.29, indicating slightly better mental health compared to physical health.

The descriptive statistics indicated generally high levels of hearing aid use, benefit, and satisfaction, along with positive physical and mental health outcomes as indicated by the mean physical and mental scores, suggesting better overall well-being among individuals under hearing aid use. However, some residual disability remained, and variability in the initial disability and handicap scores suggested that participants may have started the intervention from differing baseline conditions.

Strong correlations were observed between HA use and satisfaction, as well as HA use and physical health. Residual disability showed a moderate negative correlation with satisfaction, which highlighted the importance of addressing baseline conditions for optimal outcomes. While HA use positively influenced physical health, its impact on mental health was not significant. The current study emphasised the critical role of HA in improving the quality of life for individuals with HL, offering a significant benefit in social, emotional and functional aspects of daily living. The findings aligned with global research demonstrating the effectiveness of HA in mitigating the challenges faced by the hearing-impaired.

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