Outcome of Hearing Aid Users in Sensorineural Hearing Loss

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Abstract

Background: Sensorineural hearing loss (SNHL) is the most common type of hearing impairment in adults. Amplification with hearing aids is a standard intervention that improves communication and reduces auditory deficits, especially in moderate to severe cases.

Objective: This study aimed to evaluate both subjective and objective outcomes of hearing aid use in patients with moderate to severe SNHL.

Methods: A hospital-based cross-sectional descriptive study was conducted between January 2020 and June 2021. Thirty patients with bilateral moderate to severe SNHL were enrolled. All were fitted with behind-the-ear (BTE) hearing aids. Unaided hearing thresholds were measured using sound field audiometry, and subjective hearing difficulties were assessed using the Abbreviated Profile of Hearing Aid Benefit (APHAB) questionnaire. After six weeks of regular hearing aid use, both audiometric testing and APHAB assessment were repeated.

Results: Post-intervention APHAB scores indicated notable improvements: Ease of Communication (mean ± SD: 36.26 ± 11.24), Reverberation (24.96 ± 8.99), and Background Noise (17.20 ± 7.70). Statistically significant improvements in aided hearing thresholds were observed at 500, 1000, 2000, and 4000 Hz ($p < 0.001$, paired t-test). Most users reported significant benefits in quiet and reverberant environments. However, perceived improvement in background noise was less substantial.

Conclusion: The use of hearing aids provides significant subjective and objective benefits for patients with moderate to severe SNHL, particularly in ease of communication and reverberant listening conditions. However, hearing in background noise remains a challenge, indicating the need for further improvement in hearing aid technology or rehabilitation strategies targeting noisy environments.

Biography

Dr. Ingyin Khaing is a Clinical Fellow in the Head and Neck Department at University College London Hospitals (UCLH), London. She completed her MSc in Myanmar and holds MRCS (ENT) from the UK. With clinical and research experience in both Myanmar and the UK, she is passionate about improving health and wellbeing, particularly in ear and hearing care, as well as head and neck conditions. Dr. Khaing is actively involved in research, with several papers currently under review for publication. Her interests also include healthcare evaluation, where she aims to enhance patient outcomes through responsive and contextual approaches.

About research topic

This study explores the effectiveness of hearing aids in improving auditory performance and perceived hearing-related quality of life in individuals with moderate to severe sensorineural hearing loss (SNHL). By assessing both audiometric outcomes and self-reported benefit using the Abbreviated Profile of Hearing Aid Benefit (APHAB) questionnaire, the research aims to provide a comprehensive evaluation of hearing aid efficacy. The focus on both objective measures (sound field audiometry) and subjective experiences (communication ease, background noise, and reverberation perception) addresses the multidimensional impact of amplification devices in real-world listening environments. The study also highlights the ongoing challenges faced by hearing aid users in noisy settings, suggesting a need for technological or rehabilitative interventions to optimize hearing outcomes.

Research Institution:

This research was conducted at the Department of Otorhinolaryngology–Head and Neck Surgery, Eye, Otorhinolaryngology–Head and Neck Surgery Hospital, Mandalay, Myanmar. The hospital is a major **tertiary referral center** and the **second largest ENT hospital in Myanmar**, providing specialized ear, nose, and throat services to a wide population. Affiliated with the **University of Medicine, Mandalay**, it serves as a prominent **academic and teaching hospital**, actively involved in undergraduate and postgraduate medical education, as well as clinical research. The institution is well-equipped for comprehensive audiological assessments and rehabilitative services, making it an ideal setting for research in hearing loss and auditory interventions.

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