McNair Scholars Program

The Psychosocial Consequences of Hearing Loss and Tinnitus

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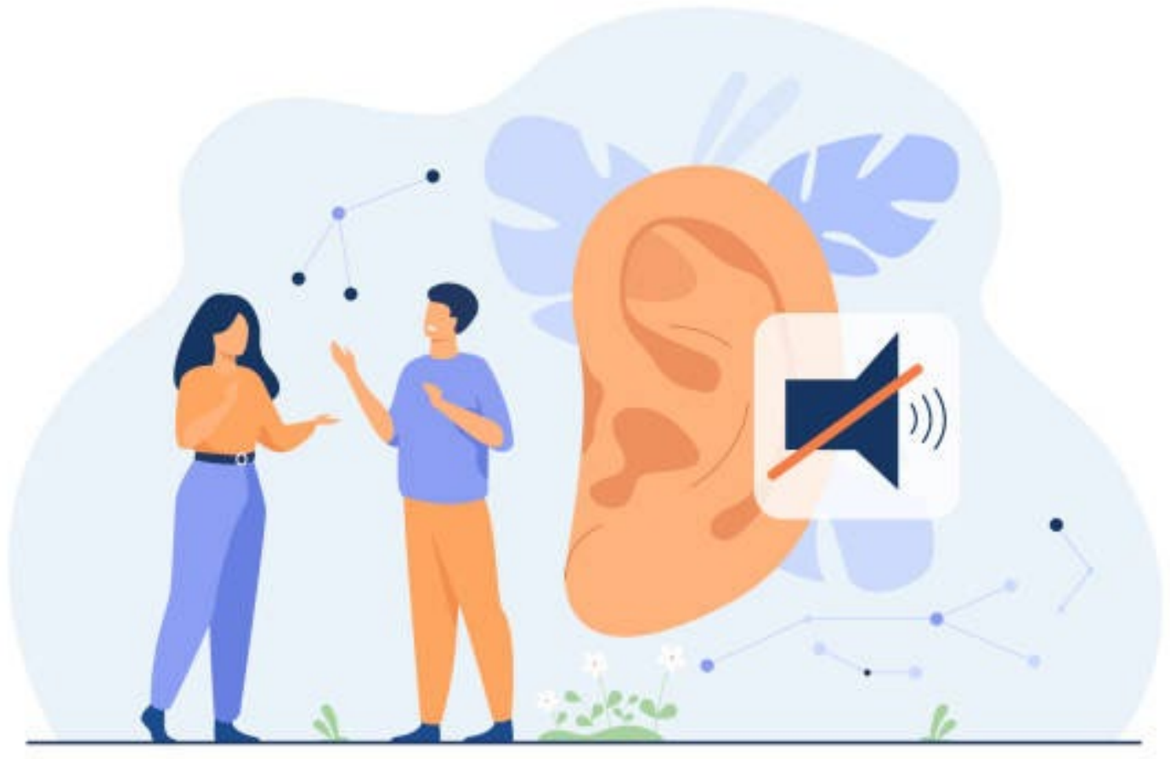
ABSTRACT

The consequences of hearing loss and tinnitus acquired in adulthood include reduced occupational, emotional, and social capabilities. Hearing problems can impair conversation; thus, significantly impacting everyday life, causing isolation, dependence, frustration, and communication disorders. Due to the increase of hearing problems within the population of the United States, hearing loss and tinnitus is a growing problem that has been reported to reduce the quality of life. Little attention has been paid in the literature to quality of life and psychosocial consequences of hearing problems, especially today when there's a growing number of hearing problems within the adult population. The Hearing Handicapped Inventory for Adults (HHIA) revealed that the 71 participants experienced a higher level of perceived hearing problems and a deterioration in the quality of life while investigating emotional and socio-situational domains. The inventory within the HHIA comprises two sub-scales: a sub-scale that explores the emotional consequences of hearing problems (α = .90); a sub-scale that explores both social and situational effects (α = .91). Qualitative data uncovered themes of depression, affected social life, and fear of the future; resulting in participants feeling that "hearing loss is the hardest thing I have had to deal with in my 35 years of life" and that "some people do not care that I suffer and do not care to help." Further research will fill the gap that audiologists need to help improve the quality of life within those suffering from hearing problems.

INTRODUCTION

The exchange of information with others can be impaired in individuals who are hard-of-hearing or experience tinnitus. These difficulties can lead to a perceived reduction of the quality of life. As life expectancy increases and adults are living longer, an increasing number of individuals will be experiencing hearing loss and tinnitus during their adult years. Kochkin (2009) reported that older adults (aged 75 to 85 years) account for the growing number of hearing problems among the population; yet more recently, a growth is occurring in a number of younger adults (30 to 54). When hearing problems are present, problems in communicative processes may occur, hindering global cognitive development, learning and interpersonal relationships; thus harming social development and the performance of the affected population (Pupo et al, 2009). Understanding the psychosocial effects of hearing problems on the quality of life is of great importance.

Hearing problems are a common health concern within the United States. Communication difficulties, lower health-related quality of life, and decreased physical and cognitive function have been reported in 66% of adults with hearing problems (Bainbridge et al, 2014; Cruickshanks et al, 1998; Ries, 1994). Prevention strategies for hearing problems are costly, yet the indirect costs due to loss of communication difficulties are also likely to grow. Hearing problems are commonly associated with lower self-reported physical functioning and may contribute to loss of independence (Bainbridge et al, 2014). As part of the Epidemiology of Hearing Loss Study, Dalton et al investigated whether hearing-loss severity had an impact on impaired activities of daily living, such as: bathing, dressing, and eating. The cross-sectional analysis of adults aged 53-97 years demonstrated significant trends in the proportion of people reporting difficulties with communication and activities of daily living. The purpose of this research is to investigate the impact of hearing problems on the hearing handicapped, communication difficulties, function in daily life, and health-related quality of life in the population of adults.



RESULTS

To investigate convergent validity of the HHIA sub-scales with an existing and already validated instrument that measures the psychosocial domains of health-related quality of life calculated on a restricted sample of 71 participants was found to be correlated at a significant level (SD = 53.53; total Cronbach alpha level α = .95).

Table 1. Cronbach alpha levels by HHIA total score, social/situational subscale and emotional subscale.

(N= 71)	M(SD)	α levels	Number of Items
HHIA (total score)	53.53(25.7)	.95	24
HHIA (social/situational)	26.38(13.54)	.91	12
HHIA (emotional)	27.69(13.03)	.90	12

HHIA scale was created by Newman et al. (1990) with an original alpha level of 0.92

As people move through the activities of daily living, at home, at work, and in social or business situations, basic auditory abilities take on functional significance. The ability of an individual to carry out auditory tasks in the real world is influenced not only by their hearing abilities, but also by a multitude of situational factors; such as background noise, competing signals, room acoustics, and familiarity with the situation. Several themes emerged among those experiencing hearing problems at the emotional and social level, such as: work life, social life, adaptation, depression, and loss of hope in the future. Themes that emerged are discussed below by each open-ended question. Themes were shared by two question items, results are provided below.

Theme	Associated Quotations
Adaptations	"Because of hearing issues, can't hear people speak clearly in restaurants or bars, sounds of shopping carts distorted, toilets and water faucets distorted, children and women distorted, constant tinnitus causes me constant discomfort, can't listen to music like I used to, car radio is distorted, I miss the sounds of nature that have been replaced with incessant ringing (wind blowing in evening, birds in morning, etc.)" "Understanding TV shows without closed captioning, movie theaters and concerts being too loud but no captioning (double edged sword), communicating in the car, hearing in groups, hearing people more than 6 ft away from me, always on alert waiting to see if someone's conversation is directed to me or not, teaching others how to look at me before speaking and seating myself in the best area for lighting and echo reduction. Having people around who know me and can jump in to help so I don't have to do it all alone. "
Repetition	"Asking people to repeat what they said is tiring and frustrating. I also sometimes avoid social situations that I would want to be in because I'm tired of not understanding what people are saying and having to ask them to repeat." "I fake hearing things at times because I've already asked for repetition too often." "Difficulty hearing whispering or quiet discussions, embarrassment when I misunderstand what someone said or when I have to ask them to repeat themselves."
Relationships and Family Affected	"I sometimes put too much emotional burden on my partner." "Avoid socializing in restaurants except with my spouse." "Unable to make friends, difficult in socializing." "This makes me apprehensive about meeting new people because I don't want to seem like a burden. "Somewhat sometimes can't make out what people are saying to me, so I tend to stay out conversations." "I avoid gatherings and events that I know will be noisy. I avoid phone calls with family and friends." "The voices of children and my girlfriend hurt my ear (not a joke)."
Fear of Losing Job	"My professional career which involves occasional exposure to loud noises (firearms) is in now jeopardy and I worry about the impact my symptoms will have on my family in the future." "I lost my job." "Trying to find something new work wise that is more conducive to my hearing impairment."
Depression	"Tinnitus steals everything from your life" "Living almost seems like torture." "Hearing loss is the hardest thing I have had to deal with in my 35 years of life." "Have a mental breakdown everyone in a while, became less frequent over the span of 3 years." "All this makes me feel silly and depressed and worthless and old sometimes, and I'm not even 30…"
Suicide	"The constant ringing in my ears has caused me great anxiety and depression. Suicide is contemplated daily." "When my tinnitus first appeared, it was so bad for so many months that I felt suicidal as I thought it would never end." "Always sad and irritated. I am not looking forward to living with this." "It has affected my life so much that I'll commit suicide in the end of June 2021 " "Tinnitus has caused me to seriously end my life (early in, I think I have adjusted fairly well)." "Thought about killing myself a lot when my tinnitus was at its worst… living in constant fear that it will get worse to the point where I have no choice but to kill myself."
Addiction	"I feel like I have an increased chance of getting an addiction such as drinking since all I want to do is escape but I can't and there is no cure or effective treatment." "The constant sound is awful and made me extremely depressed, which led to the abuse of cannabis." "Started smoking weed a lot to deal with tinnitus."
Fear of Hearing Problems Worsening	"I seriously worry about this getting worse and living in a future where I cannot hear anyone I love or anything I like to do. I fear how this would affect work and my financials as well. I no longer do many of the things I used to love." "I worry how my hearing will be in 15 years when I'll be 45." "Anxiety about one day needing hearing aids at an age that may be considered too young in the public perception of hearing loss and hearing aids."
Loss of Hope in Audiology and Medicine	"People don't view tinnitus as a problem. The general public does not understand it's impaired hearing." "Other people think I am not suffering." "And it's horrible there's not a lot of urgency to fill the need of so many people in this situation who just don't see any light at the end of the tunnel and are hopeless." "Frustrated by the lack of good audiophile quality hearing aids. They are getting better however." "Financial burdens of ENT and Audiologist appointments, 'Doctors don't care. Tinnitus can't be cured so they just shrug and ignore it." "Some people don't care that I suffer and do not care to help me." "Loss of reliability in medicine and science"
Hope in Technology Advancements	"It pains me to know that there could be a day where I can no longer hear without the need of a hearing aid. While I'm sure the technology behind them is getting better, how accurately do they replicate the sound? What if, in this god forsaken country, I can't feasibly afford hearing aids?" "I look forward to the day when there is a cure or at least something that could mitigate its effects while being aware that will be years away, but if this gets more attention and funding than that is a victory in my opinion.

METHODS

Participants.

Overall, 71 participants, with hearing loss and/or tinnitus, volunteered and signed the Informed Consent Form to take part in an anonymous survey. Eligible adults with hearing loss and tinnitus, 18 + years, were recruited for this survey from across the United States.

Measures.

The Hearing Handicap Inventory for Adults (HHIA) is a 25-item questionnaire that is composed of a 12-item emotional sub-scale and a 12-item socio-situational sub-scale. Validity was assessed by using construct, convergent and discriminant methods. A Cronbach's alpha coefficient near 0.90 confirmed a more than acceptable internal consistency.

Emotional and Social Scale. After thorough review of studies' scales measuring impact of those experiencing hearing problems, an emotional and social scale was created for this study. Twenty-four items were measured on a five point scale ranging from 1 (*no*) to 5 (*yes*). Other items questioned the emotional and social quality of life. Cronbach alpha levels for the emotional scale (α = .90) and social scale (α = .91) was highly reliable.

Open-ended Items. To explore personal experiences with those experiencing hearing problems as adults, a series of open-ended questions were created for this study. Two open-ended questions were released to explore the impact of hearing loss on the quality of life: "*Do you feel like your hearing problem has affected your overall quality of life? If so, in what ways?," "Please make a list of all the difficulties which you have because of your hearing problem. Write down as many as you can think of."*

DISCUSSION

- Findings demonstrate that the HHIA received a higher Cronbach alpha level and appears as a useful additional aid to ensure an optimal patient management as it allows an effective determination of non-auditory symptoms while investigating most areas of patient concern.
- It is strongly suggested that audiological services should improve their diagnostic equipment with adequate psychometric questionnaires to routinely explore the psychosocial consequences that would not be highlighted by a clinical approach.
- Qualitative findings added to the convergent design by exploring the lived experiences of social challenges and emotional distress in relation to hearing loss, and to describe the coping mechanisms employed by adults with acquired hearing loss and the environment around them.
- Participants described their experiences through cognitive representation of consequences (isolation, exclusion, loss, conflict with others, and stigmatization) and emotional representation (sadness, disappointment, anxiety, grief, burdensomeness, and loneliness). Coping strategies included avoidance, controlling one's listening environment, acceptance, communication repair strategies, and accepting support from others.
- These findings suggest that hearing healthcare services could improve by helping adults with hearing loss to better understand and manage their emotional and social distress relating to hearing loss and tinnitus.