

Original Research Article

Aural rehabilitation programme for hearing impaired: a psychosocial intervention

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Received: 30 August 2020

Revised: 01 November 2020

Accepted: 12 November 2020

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ABSTRACT

Background: Hearing impairment i.e., reduced hearing acuity, has adverse effects on the physical, cognitive, emotional, behavioral, and social functions of an individual, resulting in passivity, social withdrawal, and negative impact on the quality of life (QOL). The present study aimed to determine whether participation in a counseling-based aural rehabilitation program and hearing aids would enhance the QOL of severely hearing-impaired by reducing their learned helplessness and social isolation.

Methods: The study included 52 participants (35 males and 17 females) in the age range of 45-65 years having severe hearing loss with high perceived social isolation and learned helplessness and low quality of life. Scales used are Friendship scale for social isolation, LH scale for learned helplessness, and WHOQOL-Bref for quality of life. A paired t-test was applied to see the significant difference between pre and post scores.

Results: Pre- and post-intervention analysis showed that learned helplessness and perceived social isolation was significantly reduced as a function of intervention with a substantially better quality of life.

Conclusions: Aural rehabilitation program combined with hearing aids resulted in a better quality of life by reducing isolation and helplessness.

Keywords: Aural rehabilitation, Hearing aids, Hearing loss, Quality of life, Perceived social isolation, Psychosocial intervention, Learned helplessness

INTRODUCTION

Hearing loss is a reduced hearing acuity, a hearing level that is greater than 25dB HL and is categorized by its severity and type of hearing loss.³ Hearing loss has a significant impact on communication. Adverse effects on physical, cognitive, emotional, behavioral, and social functions can be observed due to hearing impairment.¹ It causes personal frustration leading the individual to self-isolation and depression, distance to family and social activities; low self-esteem; loneliness; depression; irritation.^{13,19,20} As their interpersonal and social life reduces, a person with hearing loss is likely to experience increased frustration, sadness, isolation, and

helplessness.^{10,4,6} The stigma associated with hearing loss is the primary source of these behaviors.

Treatment of hearing loss depends upon type and degree of hearing loss. This mainly includes surgical intervention, hearing aid devices, assistive devices, cochlear implant and aural rehabilitation. Aural Rehabilitation Programs began to appear after World War II to fill the growing need to provide services to veterans who lost their hearing.¹⁸ Since then, the importance of aural rehabilitation services within the discipline of audiology and the types of services provided by rehabilitative audiologists have been continuously evolving.²² Both scientific and clinical evidence

demonstrates aural rehabilitation to be efficacious when it serves to reduce the communication difficulties and enhance psychosocial wellbeing, and when the functional improvements remain long after the rehabilitation.^{7,2} A psychosocial approach of aural rehabilitation focusing on personal issues due to hearing loss resulted in positive outcomes in solving these problems.²⁹

In this study aural rehabilitation program was developed after reviewing the literature. The initial session included hearing aid orientation and use. The program also provides training on maximizing the visual cues and residual hearing. Formal speechreading instructions or auditory training were also recommended to enhance their social interaction. The aural rehabilitation program aimed to provide a holistic approach creating a setting in which self-esteem could be restored to induce affected individuals to seek out actively solutions to their hearing-related problems, enhancing social relations and altering their attitudes towards their condition. It also included counseling sessions for the individuals having hearing loss and his/her family members.

So, the present study aims to provide a holistic approach to restore the self-esteem of hearing-impaired individuals. These individuals seek out actively solutions to their hearing-related problems and to enhance their social relations. Also, altering their attitudes towards their problems.

Objective of this study was to investigate the effect of the aural rehabilitation program on perceived social isolation, learned helplessness, and the quality of life of severely hearing-impaired individuals.

METHODS

Pre-Post experimental study design was adopted to examine the efficacy of rehabilitation program on perceived social isolation, learned helplessness, and quality of life of the severe hearing-impaired individuals. The selection of this sample was incidental as only those subjects were taken who were available there and were willing to participate in the study. Inclusion criteria were new cases coming prospectively to the hospital with age range 45-65 years having minimum primary level of education. Exclusion criteria were that the individual had no previous history of middle ear pathology, no other neurodegenerative disease. There should be no history of previous use of hearing aid.

Tools used for pre- and post-assessment of all the subjects were Friendship scale for social isolation.¹² LH scale for learned helplessness and WHOQOL-Bref for Quality of life.⁹ Friendship scale for social isolation consisted of six items. All items were rated on 5-point scale. Scoring was by summation and scores were presented in percentage. LH scale for learned helplessness consisted of 15 items.⁵ Each item had three choices scored on three- point scale. Scoring categories of yes, uncertain and no are given

scores of 3, 2 and 1 respectively. The WHOQOL-BREF instrument comprised of 26 items. All items were rated on 5-point scale. Scoring was done by summation and scores were presented in percentage. Statistical analysis was done using paired t-test to see the significant difference between pre and post scores.

Participants

There were 52 subjects randomly selected from Ear nose throat department, Government medical college and hospital, Chandigarh in the period from February 2007 to April 2010, served as subjects for this study. All procedures performed in this study were in accordance with the ethical standards of the institution and has been passed by the Research Award Committee (RAC) of the Institution. The aim and procedure of study was thoroughly explained to all the participants and consent was taken. They were clinically diagnosed cases of hearing loss by ENT specialist and later confirmed as case of severe sensorineural hearing loss after doing pure tone audiometry (PTA) by same audiologist with reference to ISHA battery, 1990 modified from Goodman, A (1965). All the participants were high on perceived social isolation and learned helplessness having poor quality of life. Out of initial intake of 60 individuals, three individuals did not turn up to participate in the intervention, and five couldn't complete the intervention sessions due to their personal unavoidable reasons. Practically the experimental group consisted of fifty-two subjects of severe SN hearing loss, in the age range of 45-65 years, including 35 males and 17 females. These individuals were subdivided into six subgroups consisting of 7-9 participants in each group. All the participants were high on perceived social isolation and learned helplessness having a low quality of life. 6 sessions of 50-60 minutes were conducted twice a week.

Procedure

Aural rehabilitation program

The intervention was developed by focusing on effective total communication, hearing aid, and psychosocial support channels. The innovative rehabilitation program was categorized according to Cunningham's classification, suggesting a continuous transition from no or little personal contribution to the patients' active participation.¹¹

A. Informational counseling:

Session 1: Amplification orientation

Session 2: Effective communication

B. Personal adjustment counseling:

Session 3: Problem identification and exploration

Session 4: Problem resolution

Session 5: Enhancing social interaction

Session 6: A short tutorial on communication strategies for their family members

The administration of the post-intervention assessment was done after three weeks of completion of the program.

A. Informational counseling:

Session I: Amplification orientation

In this session, hearing aid prescription, hearing aid orientation, care, and hearing aid maintenance were administered. Also, the hierarchies of the listening situation were demonstrated to the first-time hearing aid user.

Session II: Effective communication

This session comprised of strategies including speech reading, non-speech stimuli, and use of environmental clues. Also, summarize the conversation to the communication partner for confirmation using situational and contextual clues. To be aware of recent topics to ease recognizing the keywords and have better participation in the conversation.

B. Personal adjustment counseling:

A problem-solving framework focused on Carkhuff's (1965) goals of helping was adopted for psychosocial support to address the support mentioned earlier. This framework consisted of two stages i.e. 1) Problem identification and exploration stage, 2) Problem resolution stage.

Session III: Problem identification and exploration:

The main objective was to allow the subjects to discuss the problems in a psychosocial support group they face in their day-to-day lives.

It began by asking the participants,

"What's the worst thing about living with a hearing loss?"

"What are the specific aspects that are causing their communication difficult?"

"Who thinks you have a hearing problem?"

"What are the barriers in the environment making communication difficult?"

The interaction revealed some common concerns of the participants.

-They could hear sounds but unable to understand it

-Face problems while conversing on the phone

-Expressed lack of acceptance of hearing loss

Session IV: Problem resolution

Step by step process for problem-solving was done in this session. The subject had the firm idea of his course of action that hearing aid to be used regularly at home and workplace. The use of hearing aid using visual clues and the proper sitting arrangement was demonstrated using a semicircular sitting plan with appropriate lighting above the speaker's face. Thus, new skills were incorporated so that individuals could identify potential problems and solutions on their own.

Session V: Enhancing social interaction

The present session aimed to tap the unused potential in the form of existing ties and build up new relationships.

Enhancing existing network ties: an attempt was made to change the attitudes and behaviors of the support recipient, the support provider, or both. The individuals were asked to create a list of ten close friends and share their hearing loss, hearing aid use, and experiences with the hearing aid.

Developing new social network linkages: Intervention was designed to create new social network linkages to alleviate chronic social isolation. Participants were introduced with a new social network of people having hearing loss and using a hearing aid. They are either the same session members or people who have already used a hearing aid and cope up with communication challenges. Thus, sharing their problems having a common platform of hearing loss.

Session VI: A short tutorial on communication strategies for family members

This session was arranged for the family members to improve their social support system. A quick tutorial about communication strategies was presented for frequent communication partners based on the acronym SPEECH. They were advised and trained to provide support in the following ways: Spotlight your face, Pause, Empathize, Ease their listening, Control the situation and Have a plan. Brief description of these steps are as follows.

RESULTS

Table 1 depicts that post-intervention mean scores on scales of perceived social isolation and learned helplessness were less than pre-intervention scores. Significant difference was shown between pre and post scores on perceived social isolation (t value = 31.46**, $p < 0.01$) and learned helplessness (t = 35.32** $p < 0.01$). The difference between pre & post scores on physical

(25.86** $p < 0.01$), psychological (23.25** $p < 0.01$), social (25.28** $p < 0.01$) and environmental domains

(22.03** $p < 0.01$) of quality of life found to be statistically significant.

Table 1: Means, SD, and t-test for pre and post-intervention scores on perceived social isolation, learned helplessness and quality of life.

Variables	Pre-intervention		Post-intervention		t-values
	Means	SDs	Means	SDs	
Perceived Social Isolation	20.98	1.87	8.02	2.01	31.46**
Learned Helplessness	25.06	1.43	12.38	2.55	35.32**
Physical Domain (QOL)	59.33	6.67	82.15	5.03	25.86**
Social Domain (QOL)	56.73	7.16	79.36	6.14	23.25**
Psychological domain (QOL)	58.71	7.92	72.49	5.43	25.28**
Environmental Domain (QOL)	54.33	5.37	71.08	4.48	22.03**

Figure 1 shows the graphical representation of the mean of pre- and post-intervention scores in relation to perceived social isolation, learned helplessness, and quality of life domains.

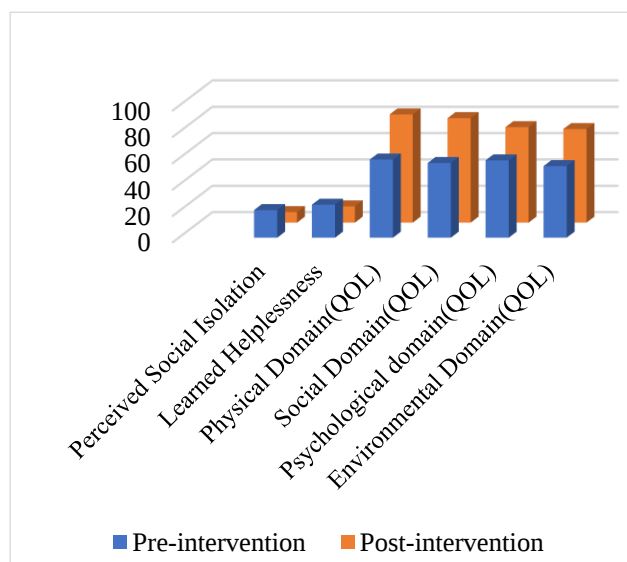


Figure 1: Mean of pre-and post-intervention scores in relation to perceived social isolation.

DISCUSSION

Findings highlighted the success and significance of aural rehabilitation program in enhancing hearing-impaired life quality by reducing social isolation and learned helplessness. The differences between pre- and post-intervention scores on all the dependent variables are statistically significant. It implies that the proactive and prospective strategy of aural rehabilitation program has improved their quality of life. These findings are in line with the findings of many studies and systematic reviews.^{26,32,34,30}

Although a hearing aid provision alone produced some reduction in the handicap, a much more significant reduction was achieved after providing personal adjustment counseling. The individuals were enabled to

curb their helplessness as well as the feeling of loneliness. Research has shown that with both auditory visual training and counseling, the affected people are less likely to show the symptoms of depression and low self-efficacy.²⁶ However, reducing anxiety and tension through effective counseling methods may be a significant factor in improved communication.²⁷ The results can be explained in the framework of Hicks & Pfau findings, who reported that 99% of information acquired through the sensory modalities comes from audition and vision.²⁸ Also, speech perception ability is better via two senses in combination than by presentation through the auditory channel or the visual channel alone.²⁸ A systematic review to assess the effectiveness of aural rehabilitation program concluded that their participation resulted in better use of communication strategies.³¹

The aural rehabilitation program has a combination of sensory, perceptual training, and counseling gives a holistic approach to solve deficits resulted from hearing loss.³² Recent study findings suggested psychosocial approach along with hearing aids and communication skills building resulted in an improved quality of life.³⁰ Self-reported evaluation of aural rehabilitation also showed positive perceived outcomes and advocates the need of aural rehabilitation program along with hearing aid use.³³

This study has several limitations. Despite of practical implications, present investigation has certain limitations also. Few of them are findings are age specific and cannot be generalized to all age groups of hearing loss. Gender difference regarding intervention program were not considered in the present study. Resilience and self-efficacy of the person could have also been considered as they are assumed to be strong predictors of quality of life.

Future research suggestions include a study can also be made regarding the role of personality and spouse perspective towards hearing loss and intervention. Another problem of worth investigation is to determine the effect of attribution and explanatory style on learned helplessness and quality of life. An investigation can also be done to answer the question whether demographic

variables like education level, language, religion, social values, norms of behavior, socioeconomic/ job status, nuclear / joint families, urban or rural background etc. do affect quality of life. Physiological characteristics such as physical impairment, vision loss, and illness contributing to social isolation along with hearing loss resulting in success of aural rehabilitation program can be researched.

CONCLUSION

After this intervention program, several positive outcomes were observed, including an enhanced understanding of hearing loss and its effects on communication. There were better self-disclosure and self-acceptance after this program. More excellent knowledge about managing communication problems and reduced stress and discouragement was observed in all the individuals. Also, increased motivation to minimize listening problems adds to other positive outcomes.

Thus, people with hearing loss benefited from a comprehensive type of rehabilitation program that focused on counseling them and their family members. Counselling combined with hearing aids resulted in a better quality of life by reducing their isolation and helplessness.

Funding: No funding sources

Conflict of interest: None declared

Ethical approval: The study was approved by the Institutional Ethics Committee of Research Award Committee (RAC) of the University

REFERENCES

1. Ries PW. Hearing ability of persons by sociodemographic and health characteristics, United States (No. 140). US Department of Health and Human Services, Public Health Service, Office of Health Research, Statistics, and Technology, National Center for Health Statistics; 1982.
2. Verma A, Mahajan A, Verma SK. Some Exercises with The Learned Helplessness Scale (LH/Scale) In Hindi. Indian J Psy. 1988;30(4):333.
3. Bess FH. The role of generic health care questionnaire on quality of life, measures in establishing audiological rehabilitation outcomes. Ear Hearing. 2000;21:74S- 99S.
4. Héту R, Lalonde M, Getty L. Psychosocial Disadvantages Associated with Occupational Hearing Loss as Experienced in the Family. Audiol. 1987;26(3):141-52.
5. Katz J, Wilde L. Auditory perceptual disorders in children. Handbook Clin Audiol. 1985;664-88.
6. Bance M. Hearing and aging. CMAJ. 2007;176(7):925-7.
7. Weinstein MC, Russell LB, Gold MR, Siegel JE. Cost-effectiveness in health and medicine. Oxford university press; 1996.
8. Northern JL, Beyer CM. Hearing aid returns analyzed in search for patient and fitting patterns. Hearing J. 1999;52(7):46-8.
9. Héту R, Jones L, Getty L. The impact of acquired hearing impairment on intimate relationships: Implications for rehabilitation. Audiol. 1993;32(6):63-380.
10. Pollack D. Amplification and Auditory/Verbal Training for the Limited Hearing Infant, 0 to 30 Months. In Seminars Hearing. 1982;3(01):52-67.
11. Hallberg L. Hearing impairment, coping, and consequences on family life. J-Aca Rehabilitative audiol. 1999;32:45-60.
12. Noble W. What is a psychosocial approach to hearing loss? Scandinavian Audiol. Supplementum 1996;43:6-11.
13. Bogardus Jr ST, Bradley EH, Williams CS, Maciejewski PK, Gallo WT, Inouye SK. Achieving goals in geriatric assessment: role of caregiver agreement and adherence to recommendations. J Am Geriatr Soci. 2004;52(1):99-105.
14. Collins MP, Souza PE, O'Neill S, Yueh B. Effectiveness of group versus individual hearing aid visits. J Rehab Res Develop. 2007;44(5).
15. Kochkin S, MarkeTrak VII. Customer satisfaction with hearing instruments in the digital age. Hearing J, 2005;58(9):30-2.
16. Tucker D, Compton MV, Mankoff L, Labban J, Dudley W. Self-perceived biopsychosocial needs of late-deafened adults with cochlear implants: implications for aural rehabilitation. J Aca Rehab Audiol. 2014;47.
17. Jennings MB. Audiologic rehabilitation needs of older adults with hearing loss: Views on assistive technology uptake and appropriate support services. J speech-language Pathol Audiol. 2005;29(3):112.
18. Southall K, Gagné JP, Jennings MB. Stigma: A negative and a positive influence on help-seeking for adults with acquired hearing loss. Inter J Audiol. 2010;49(11):804-14.
19. Sweetow R, Palmer CV. Efficacy of individual auditory training in adults: A systematic review of the evidence. J Am Aca Audiol. 2005;16(7):494-504.
20. Gordon-Salant. Speech perception and auditory temporal processing performance by older listeners: implications for real-world communication. In Seminars Hearing. 2006;27(04):264-8.
21. Ross M. A retrospective look at the future of aural rehabilitation. J Aca Rehab Audiol. 1997;30:11-28.
22. Gagné JP, Jennings MB, Southall K. The ICF: A classification system and conceptual framework ideal for audiological rehabilitation. Perspectives Aural Rehab Its Instrumen. 2009;16(1):8-14.
23. Zimmer M, Duncan AV, Laitano D, Ferreira EE. A twelve-week randomized controlled study of the cognitive-behavioral Integrated Psychological Therapy program: positive effect on the social functioning of schizophrenic patients. Braz J Psych. 2007;29(2):140-7.

24. Stephens MP, Norris-Baker C. Social support in college life for disabled students. *Rehabilitation Psychol*. 1984;29(2):107.
25. Hawthorne G, Griffith P. *The Friendship Scale: development and properties*. Melbourne: Centre for Health Program Evaluation; 2000.
26. Whoqol Group. Development of the World Health Organization WHOQOL-BREF quality of life assessment. *Psychol Med*. 1998;28(3):551-8.
27. Alpin JG. *Handbook of adult rehabilitative audiology*. Williams & Wilkins; 1982.
28. Hicks WM, Pfau GS. Deaf-visually impaired persons: incidence and services. *Ame Ann Deaf*. 1979;124(2):76-92.
29. Erber NP. Auditory-visual perception of speech. *J Speech Hearing Dis*. 1975;40(4):481-92.
30. Boothroyd A. Adult aural rehabilitation: what is it and does it work? *Trends in Amplific*. 2007;11(2):63-71.
31. Hawkins DB. Effectiveness of counseling-based adult group aural rehabilitation programs: a systematic review of the evidence. *J Ame Acad Audiol*. 2005;16(7):485-93.
32. Michaud HN, Duchesne L. Aural rehabilitation for older adults with hearing loss: Impacts on quality of life-A systematic review of randomized controlled trials. *J Ame Acad Audiol*. 2017;28(7):596-609.
33. Binzer SM. The future of the past in aural rehabilitation. In *Seminars in Hearing* 2002 (Vol. 23, No. 01, pp. 003-012). Copyright© 2002 by Thieme Medical Publishers, Inc., 333 Seventh Avenue, New York, NY 10001, USA. Tel.: + 1 (212) 584-4662.
34. Pienaar E, Stearn NA, Swanepoel DW. Self-reported outcomes of aural rehabilitation for adult hearing aid users in a South African context. *South Afr J Comm Dis*. 2010;57:4

Cite this article as: Juneja MK, Sharma M, Singhal S. Aural rehabilitation programme for hearing impaired: a psychosocial intervention. *Int J Community Med Public Health* 2020;7:4952-7.