

Critical Review: Does the length of group aural rehabilitation program for adults with hearing loss predict self-perceived hearing handicap?

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This critical review evaluates the relationship between length of Aural Rehabilitation (AR) program and perceived hearing handicap in adults with hearing loss. Types of studies located include: randomized control trials and cohort designs. Overall, there is evidence that attending group AR programs for an hour and a half to two hours a week for four to six weeks in length significantly reduces self-perceived hearing handicap. Criticisms of the available research include research design, various standardized and non-standardized measures to assess outcome and not differentiating between participant's hearing aid experience during analysis.

Introduction

AR programs began to appear after World War II to fill the growing need to provide services to veterans who lost their hearing (Ross, 1997). At that time, several hospitals provided full-time AR which was approximately eight weeks in length. According to Ross (1997), the AR programs included the expertise of a myriad of professionals including, acoustic technicians, psychologists, social workers, communication therapists, as well as many others.

Benefit received from attending AR classes can be defined in several ways including amount of hearing aid use, perceived self handicap and ease of communication. However, Hawkins (2005) states that the majority of researchers believe that reducing perceived hearing handicap is the primary benefit, and goal, of AR. Hearing handicap refers to how hearing loss is impacting the social and emotional aspects of an individual's life (Stephens & Hetu, 1991). Measuring hearing handicap is frequently accomplished through the use of questionnaires, however, personal interviews and diary entries have also been used.

Since its origin over 60 years ago, AR programs have declined in availability. Possible reasons for this decline may be the time required by Audiologists to run the sessions, the lack of education in AR offered by university programs and the inability to be reimbursed for the cost of running AR through medical insurance or provincial health insurance.

Currently, however, there is a renewed interest in AR and its place in the field of Audiology. Despite this interest, evidence for specific length of program necessary to produce effective results is lacking. Audiologists are forced to use only their own experience or mentors in the field when deciding upon the necessary time frame for clients to benefit from group AR classes. Other Audiologists may choose the length of AR programs based on

scheduling and/or time constraints within their practices.

Objectives

The objective of this paper is to address whether the length of group AR programs impact self-perceived hearing handicap for adults with hearing loss.

Methods

Search Strategy

Computerized databases, including Medline, Psych Info, Web of Science, PubMed and Scholars Portal were searched using the following search strategy: (Adult) AND (Aural Rehabilitation) AND (Hearing Loss) OR (Hearing Impairment) OR (Hearing Disorder)

Selection Criteria

The studies selected for inclusion in this critical review paper were required to investigate the impact of group AR programs on self-perceived hearing handicap. No restriction was placed on the length of the AR program or the type of outcome measure used. The age of research participants was limited to adults over the age of 18 who had a hearing impairment. Studies involving only veterans were excluded. No limits were placed on hearing aid status or degree of hearing loss.

Data Collection

Results of the literature search yielded the following types of articles: randomized controlled trials (2), and cohort studies (3).

Results

Studies showed that participation in AR classes for an hour and a half to two hours per week for four to six weeks significantly reduced participant's self-perceived hearing handicap. AR classes of three weeks and 8 to 10 weeks in length did not show significant results for reduction in self-perceived hearing handicap.

Randomized Control Trials

Andersson, Melin, Scott, & Lindberg's (1995) randomized control trial evaluated the effectiveness of an AR program for elderly people who were supplied with hearing aids. In this study, participants were randomly assigned to either an experimental group who participated in an AR program or a control group who did not participate in AR. The length of the AR program was two hours each week for four weeks. The program consisted of relaxation skills, coping strategies, communication strategies as well as social skills training. Several outcome measures were used within this study. First, video interviews were used to judge how participants reacted to situations in which communication was difficult. Daily registrations were used to record how a participant was feeling about communicating with hearing aids on a daily basis and to measure how many hours per week the hearing aids were worn. The Hearing Coping Assessment (HCA) was also administered pre and post treatment to each participant; the HCA is a short questionnaire that measures the level of hearing handicap a person is experiencing. Lastly, telephone interviews were conducted one month post treatment, which involved two psychologists asking questions regarding how participants were coping with hearing loss. Results revealed a significant reduction in perceived hearing handicap with participation in the AR program based on the video interviews, daily registrations and the telephone interviews. No significant results were obtained from the HCA.

One limitation to this study was that the significant findings only came from outcome measures that were subjective in nature and/or non-standardized. No significant results were seen on the HCA, which was the only standardized and valid outcome measure used in this study.

Smaldino & Smaldino (1988) investigated whether or not the disclosure of cognitive learning style alone and when combined with an AR program will effect the perception of hearing handicap in new hearing aid wearers. This study used randomized control trials where participants were randomly assigned to one of four groups: control, cognitive style, cognitive style/AR, AR only. The length of the AR program was four weeks long. The AR program

consisted of speechreading, physiology of hearing loss, communicating in real world situations and coping strategies. The outcome measures used were the Hearing Performance Inventory (which assesses hearing handicap) and the Albany Learning Style Instrument revised (which assesses learning style). Results indicate a significant reduction in perceived handicap with participation in the AR program. Results also revealed that the knowledge of cognitive learning style had no significant effect on hearing handicap.

Several limitations were apparent in this study. First, the number of hours per week that participants attended the AR program was not stated. This is an important fact since the amount of time in AR (i.e. one hour a week for four weeks versus eight hours a day for four weeks) may be significant to the outcome of this study. Another flaw was that how participants were recruited was not disclosed. Participant selection can bias a study significantly, thus not knowing how this process was completed limits this study's application. Lastly, researchers used hearing aid wearers that ranged in age from 30 to 90 years old. Grouping together such a large age range of participants makes teasing apart possible age-related differences impossible.

Cohort Design

Brewer (2001) looked at the impact of a group AR program on perceived hearing handicap for hearing aid users and non-users. Participants elected to attend a group AR program for an hour and a half to two hours each week for 8 to 10 weeks (i.e. some classes ran only 8 weeks and some ran 10 weeks total). Topics discussed during the classes included speechreading, communication strategies, hearing education, coping with hearing loss and auditory-visual listening in noise. The Hearing Handicap Inventory for Adults, which assesses the social and emotional consequences of hearing loss, was administered during the first and last AR classes. Results revealed no significant reduction in perceived handicap with participation in the AR program.

A limitation of this study was that the AR classes were conducted by graduate students in Speech-Language Pathology and Audiology under the supervision of a Clinical Audiologist. The students who ran the classes may have had little experience in the area of AR, which potentially influenced the results of this study.

Norman, George, Downie & Milligan's (1995) cohort study looked at the effects of a group AR program on hearing instrument use and hearing handicap. Participants consisted of adults who elected to attend a two hour per week AR program for three

weeks, adults who refused the AR class and a control group that was not offered the AR class. All participants were fitted with hearing aids prior to beginning the AR program. The outcome measure used was a non-standardized questionnaire (to assess the level of handicap) and a diary (to assess the disability). Questions on the questionnaire involved the level of distress caused by hearing difficulties, reaction of others to hearing problems and the frequency of occurrence of communication problems. The AR course content included the anatomy and physiology of hearing loss, communication strategies video and stress reduction techniques. Pamphlets were also provided on hearing aids and communication tactics. No significant reduction in perceived hearing handicap with participation in the group AR program was found.

A limitation to this study was that only 24 out of the 50 participants in the AR group actually attended two or more sessions. Reasons for not attending included illness, transportation difficulties and holidays. Of the participants who did attend, some did not fill in the diaries sufficiently to be included; this results in a limited application of this study's findings.

Preminger (2003) examined whether significant others' participation in AR reduces hearing handicap and analyzed whether or not hearing handicap was different for people with hearing loss and for their significant others. Half of the participants attended the AR program with a significant other and half attended a separate AR program, unaccompanied. Ten participants were randomly assigned to one of the two groups and the remaining 15 participants chose which group they preferred. Participants were a mixture of new and experienced hearing aid users. The length of the AR program was an hour and a half each week for six weeks. Course content included the anatomy of the ear, communication strategies, assistive devices as well as auditory and visual perception. Outcome measures to assess hearing handicap consisted of the Hearing Handicap Inventory for Adults or Elderly (depending on the age of participant) and the Communication Scale for Older Adults. Results revealed a significant reduction in hearing handicap with participation in AR classes for both hearing impaired persons and significant others, regardless of group.

One limitation of this study was that there was no control group that did not attend AR. Having only participants that attended AR does not allow researchers to compare the results to people who had no AR experience.

Conclusions & Recommendations

Research has indicated there is evidence that attending AR classes for an hour and a half to two hours each week for four to six weeks in length can significantly reduce participants' perceived hearing handicap. However, no researchers to date have directly varied the length of time spent in AR to see the effect of perceived hearing handicap.

One recommendation is to set up a study that runs several similar AR classes that vary in length. Topics covered should not differ, however the extent to which topics are discussed will vary with the length of class.

The measures used to assess hearing handicap vary substantially from study to study. Standardized and non-standardized scales, diaries, and telephone interviews were used alone and in various combinations. A second recommendation is for researchers to use only standardized, valid forms of outcome measures. This would reduce tester bias which may result from interviews and interpretation of diaries and ultimately increase the strength of the research results. The studies also varied in when their outcome measures were administered; since there may only be an effect for a relatively short period of time after completing AR, outcome measures should be given both before the program begins and shortly after the end of the program and possibly at regular intervals afterwards to understand how long the effect on perceived hearing handicap last.

A final recommendation is for clinicians who wish to implement AR classes to consider making the program an hour and a half to two hours per week for four to six weeks in length. Currently, this appears to be the most effective length of program to reduce self-perceived hearing handicap based on the most current evidence in the literature.

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