

SIG 8

Clinical Focus

Development and Implementation of an Aural Rehabilitation Program Using Community Health Workers in Rural Alabama

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ABSTRACT

Purpose: Considering the lack of audiological care in many areas across the United States, it is crucial to develop new models of hearing health care. Described within this document is a procedure used to develop and implement an aural rehabilitation (AR) program and a community health worker (CHW) educational training program in West Central and South Alabama. The AR program and the CHW educational training program were used to assist those with hearing loss in rural Alabama communities who received over-the-counter hearing aids (OTC HAs). The work described was part of a registered clinical trial (NCT04671381) with OTC HAs in rural Alabama communities.

Method: The development and implementation of the AR program and CHW training program was conducted using foundational work from experiential learning principals and from experts in AR and community outreach and engagement.

Results: Over the course of 3 years from March 2021 to March 2024, the AR program and CHW training were developed and implemented. Guidance from the study personnel, consultants, and CHWs helped to refine the AR program and CHW training after implementation.

Conclusion: Future studies will assess the success of the AR program through quantifying outcomes from speech perception testing and survey completion obtained from adults in rural communities who enroll in the OTC HA clinical trial.

Addressing hearing loss in the adult population has the potential to mitigate the negative effects of hearing loss including social isolation, loneliness, depression, and cognitive decline (Huang et al., 2023; Lin et al., 2013; Pronk et al., 2013; Shukla et al., 2020). Many studies have reported that access to adult hearing health care in rural communities across the United States is very limited and, in many places, nonexistent (Au et al., 2021; Chan et al., 2017; Hay-McCutcheon et al., 2021, 2023; Hixon et al., 2016; Inglis-Jenson et al., 2023; Planey, 2019; Powell et al., 2019). More specifically, research has demonstrated

that travel distance to a hearing health care professional, financial constraints, time constraints that prevent seeing a hearing health care professional, stigma associated with receiving care for a hearing loss, and not knowing how to access a hearing health care professional all contribute to inadequate access to hearing health care (Au et al., 2021; Hay-McCutcheon et al., 2021; Inglis-Jenson et al., 2023; Planey, 2019; Powell et al., 2019). One solution to improving access to hearing health care has been the emergence of over-the-counter hearing aids (OTC HAs; U.S. Food and Drug Administration [FDA], 2022). Adults who are 18 years of age or older with perceived mild-to-moderate hearing loss can now purchase these aids without a medical exam, and without a prescription or fitting from an audiologist (FDA, 2023). These hearing aids are designed to be

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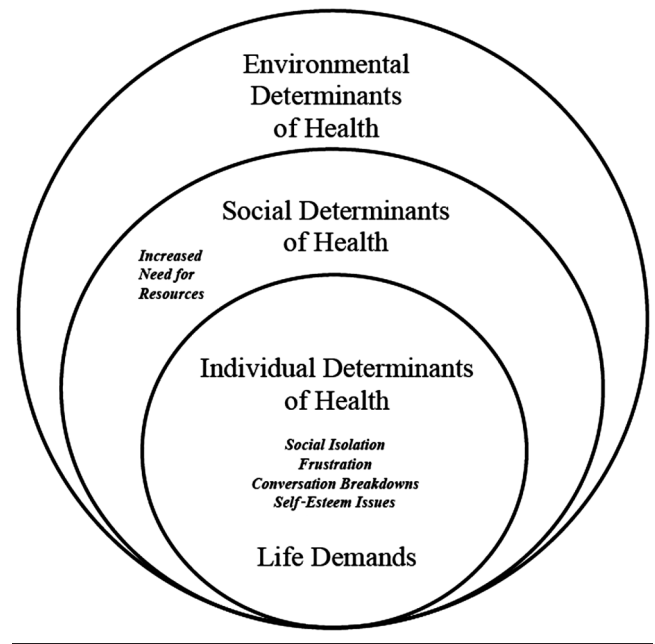
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set by the user without audiological support. Potentially, this development could increase access to hearing health care for those in rural and underserved communities.

However, preliminary evidence has suggested that many people who have received OTC HAs more successfully set the devices or were more satisfied with their performance if they received support from an audiologist compared to those who received no support (Convery et al., 2017; Humes et al., 2017, 2019). In a group of 40 experienced and inexperienced hearing aid users, 45% did not successfully set their OTC HAs as described in Convery et al. (2017). Specifically, 18 of the 40 participants were not able to correctly carry out the seven steps, provided to them in written format, for properly fitting their hearing aids. Outcomes from Humes et al. (2017) also revealed that participants who did not receive support setting their hearing aids had lower satisfaction with the hearing aid features and with the dispenser-related processes (e.g., quality of service or the explanation of what to expect from the hearing aids) compared to those who did receive support. These findings were replicated in Humes et al. (2019). Collectively, these findings suggest that assistance provided to those who purchase OTC HAs could be important for successful use and satisfaction.

Findings also have suggested that rural residents, including those with hearing loss, their friends and family, and other community partners, realize the need for increased hearing health care resources in their communities (Hay-McCutcheon et al., 2023). In Alabama, rural residents overwhelmingly reported that more resources to address hearing loss, along with increased awareness of the consequences of hearing loss, were needed. To understand how to address this lack of care, comments from Hay-McCutcheon et al. (2023) were mapped onto the Meikirch model of health, which posits that well-being is a complex interaction between individuals' potentials, life's demands, social determinants, and environmental determinants (Bircher & Kuruvilla, 2014). Briefly, Bircher and Kuruvilla (2014) argue that good health results when individuals' potentials, along with social and environmental determinants of health, are sufficient to meet the demands of life (see Figure 1). Environmental determinants of health include the physical, chemical, and biological factors external to a person, in addition to all the related factors that impact behavior. Social determinants of health are associated with the unequal distribution of power, and goods and services, which can affect access to health care, high-quality schools and education, community resources, and work and leisure activities. Individual determinants of health include the individuals' potentials, guided by biological factors and personal characteristics, which help meet the demands of life (Bircher & Kuruvilla, 2014). The social determinants of hearing health care as

Figure 1. The Meikirch model of health outlines the environment, society, and individual determinants of health (adapted from Bircher & Kuruvilla, 2014, and Hay-McCutcheon et al., 2023).



outlined in Hay-McCutcheon et al. (2023) were specifically related to the increased need for resources and are shown in Figure 1. By addressing the need for increased resources, it will be possible to address the individual determinants of health as revealed in Hay-McCutcheon et al. (2023), namely, social isolation, frustration, conversation breakdowns, and self-esteem issues, also provided in Figure 1.

Efforts to improve resources and access to hearing health care in rural communities could, in part, be carried out using community health workers (CHWs), already working in rural communities. Potentially, they could be provided with training to address gaps in hearing health care. A CHW, as defined by the World Health Organization (WHO), is one who provides health care services where they live and, typically, have received less formal education than other professionals such as nurses or doctors (WHO, 2020). Historically, CHWs have provided support for those with HIV, dental care, cardiovascular disease, diabetes, and cancer to name a few (Abdel-All et al., 2017; Pacza et al., 2001; Policicchio & Dontje, 2018; Rodriguez et al., 2020).

The study presented here is a review of the process to develop and implement an aural rehabilitation (AR) program in rural communities of Alabama, supported by CHWs. To help prepare CHWs for the program, the development and implementation of a CHW educational training program also took place. This work took place over a 3-year period from March 2021 to March 2024 and was part of a registered clinical trial (NCT04671381) with

OTC HAs in rural Alabama communities. Institutional review board approval from The University of Alabama for the protocol was granted.

Method

Background Information

The Hear Here Alabama program has been in operation in West Central and South Alabama since 2013 and, during this time, 10 collaborative relationships with community partners have been established. This program has led to the provision of basic hearing health care to residents in rural communities who have little to no access to audiological services. The community partnerships, along with the Hear Here Alabama mobile clinic, have resulted in the provision of standard hearing health care to rural communities. The mobile clinic was purchased in 2015 with funding from The University of Alabama and is equipped with two sound booths, two video otoscopes, two audiometers, and a real ear testing system. The study described herein would not have been possible without the establishment of collaborative relationships with community partners.

Meikirch Model of Hearing Health Care Behavior and Considerations for Adults With Hearing Loss and CHWs

The Meikirch model was used to help guide the creation of the AR program and the training for the CHWs. Specifically, thoughts were given to what could practically be expected from adults with hearing loss who would complete the AR program and to what the CHWs would be capable of providing. These considerations, associated with life demands of the model, include issues associated with personally acquired potential and can be physiological or psychosocial in nature and closely related to the surrounding natural environment (Bircher & Kuruvilla, 2014). For this study, time constraints to attend AR sessions, for both adults with hearing loss and the CHWs, due to other commitments and responsibilities, could have an impact on their involvement in the program. Rural community residents could be caring for other family members, or they could be working multiple jobs. Most likely, it would be unreasonable to expect rural residents to attend numerous AR sessions.

In addition to considering individual responsibilities, the lack of reliable internet access in rural Alabama communities (Alabama Department of Economic and Community Affairs, 2024) also was taken into consideration. Although other researchers have demonstrated the

effectiveness of online AR sessions (Thorén et al., 2011, 2014, 2016; Tye-Murray et al., 2022), the needs of those in rural communities suggested that in-person settings would be more practical and acceptable.

Development of the AR Program

Prior evidence has suggested that adults with newly fitted hearing aids benefit from additional support through a brief AR program (Abrams et al., 1992; Chisolm et al., 2004; Ferguson et al., 2016). Chisolm et al. found that adults in a 4-week AR program, compared to adults not in an AR program, had fewer negative psychosocial consequences and had greater short-term benefits related to verbal and nonverbal communication strategies (Chisolm et al., 2004). After 1 year of hearing aid use, the adults in the control group reported very similar findings to the adults in the AR program. That is, they continued to adjust to their hearing loss and use of hearing aids over the 1-year period. However, all participants in that study had their hearing aids fitted by an audiologist and received a hearing aid orientation. Considering that participants who purchase OTC HA will have no support setting their hearing aids and will not receive an orientation to help guide them through the first few weeks of hearing aid use, receiving some support from a trained CHW, helping them adjust to changes in their lives with amplification use, could be crucial. Possibly, if adults in these communities do not have immediate success with their devices, they could be at risk for nonuse.

Consequently, four 1-hr AR sessions were developed, which were based on the AR work of Tye-Murray (2015) and Trychin (2003). Additionally, the principals of social learning theory, including observation, attention, reproduction, and motivation, by Bandura (1977) and Kolb (2015), were used as a framework to enhance comprehension of the material. This learning theory suggests that comprehension is increased when adults interact with each other and the environment and when they participate in joint learning experiences. The social and experiential learning practices that were incorporated into the AR program included group discussions, practice with hearing aid features, listening to and reading about communication breakdowns, and role-playing exercises. The outlines for each session are provided in Table 1, and they focused on discussion of Hearing Loss and Hearing Aids (Session 1), Hearing Loss and Communication Issues (Session 2), Communication Strategies (Session 3), and Communications Strategies and Telephone Use (Session 4). These topics were chosen based on established practices for developing AR programs as provided in *Foundations of Aural Rehabilitation: Children, Adults, and Their Family Members* (4th ed.) by Tye-Murray (2015). For each lesson, formal

Table 1. Aural rehabilitation curriculum.

Group aural rehabilitation program	Formal instruction	Social learning	Experiential learning	Self-directed learning (homework)
Session 1 Hearing Loss and Hearing Aids	<ul style="list-style-type: none"> • Parts of the ear • How hearing works • The audiogram • My hearing explained • Hearing aid features 	<ul style="list-style-type: none"> • Group discussion related to degree of hearing loss and how hearing aids assist with communication • Addressing questions related to hearing aid features 	<ul style="list-style-type: none"> • Practice using hearing aid features 	<ul style="list-style-type: none"> • Review the hearing aid manual and practice using the hearing aid features
Session 2 Hearing Loss and Communication Issues	<ul style="list-style-type: none"> • Responses to communication breakdowns • Communication rules for adults with hearing loss and their communication partners 	<ul style="list-style-type: none"> • Discussion of improving communication breakdowns 	<ul style="list-style-type: none"> • Listening/reading scenarios demonstrating communication problems 	<ul style="list-style-type: none"> • Incorporate repair strategies in daily conversations
Session 3 Communication Strategies	<ul style="list-style-type: none"> • Strategies to incorporate into conversations or difficult scenarios (e.g., anticipation, expectations, and setting realistic goals) 	<ul style="list-style-type: none"> • Group discussion of communication difficulties • Specific examples provided for problem-solving exercises • Participants brainstorm about how to facilitate communication in specific contexts 	<ul style="list-style-type: none"> • Role-playing exercises using assigned topic areas 	<ul style="list-style-type: none"> • Use suggested techniques in communication with others throughout the week
Session 4 Successful Communication	<ul style="list-style-type: none"> • More tips for successful communication • Using the telephone with a hearing aid 	<ul style="list-style-type: none"> • Discussion of being an active communication partner 	<ul style="list-style-type: none"> • Listening/reading scenarios demonstrating communication problems 	<ul style="list-style-type: none"> • Continue to use communication strategies • Consult with reference folder when difficulties arise

instruction, social learning, experiential learning, and self-directed learning components were included, based on the work of Tye-Murray (2015), in addition to Trychin (2003), Bandura (1977), and Kolb (2015). The CHWs who provided the AR program had experience working in educational or medical settings or were involved with community engagement and outreach activities.

Once the curriculum was developed, it was reviewed with the project expert consultants in AR and community program development, Tye-Murray and Hardy, both authors on this study, to ensure the appropriateness of the topics and the material. Tye-Murray is an expert in AR development with numerous publications addressing identification and treatment of hearing loss in children and adults. Hardy has been affiliated with the Office of Community Outreach and Engagement at the O’Neal Cancer Center with the University of Alabama at Birmingham (UAB) since 1998. During her time at UAB, Hardy’s work has focused on community-engaged research through community outreach, education, and engagement,

including training CHWs, to increase cancer screening in individuals in rural Alabama and Mississippi communities (Ahmed et al., 2022; Ard et al., 2017; Durant et al., 2013; Hardy et al., 2005). In addition, the content of the AR sessions also was reviewed by two CHWs, hired prior to the CHW training and who live in rural Alabama communities, who made suggestions for improving engagement and clarity of the material. The material continued to be reviewed after each AR session to adjust the presentation format or content, based on input from the study participants and from the CHWs. Consequently, lesson plans were continually edited throughout the first year of the project to improve comprehension and enjoyment of the material.

Development of the CHW Training Program

During the development of the AR curriculum, the creation of the training program for CHWs was initiated. The objective was to equip CHWs with the necessary information and tools needed to conduct the AR sessions, in addition to being mindful of their life demands. The

characteristics and demographics of those living in West Central and South Alabama, where this study took place also needed to be considered. This geographical area, referred to as the Black Belt Region, named for the color of its topsoil, has been described as one of the forgotten places of the United States with dismal poverty rates (Wharton & Church, 2009). In Marengo, Perry, Dallas, Sumter, and Wilcox, the targeted counties for this study, citizens experience “persistent poverty,” where at least 20% of the population has lived in poverty over 30 years (U.S. Department of Agriculture, 2022). It was necessary, therefore, to consider that potential CHWs could be living below the poverty line and perhaps working multiple jobs. Education level also was a consideration. The U.S. Census Bureau reported that from 2018 to 2022, those with a high school education ranged from 77.7% to 89.1% in our targeted counties and those with a bachelor’s degree ranged from 11.6% to 22%. The national average for those with a high school diploma was 89.1% and for those with a college degree was 34.3% (U.S. Census Bureau, 2022). Consequently, recruiting CHWs who were all college graduates as suggested by Bally and Bakke (2007), as discussed below, would most likely not be realistic or representative of the residents of the communities in which this work was conducted. Finally, the CHW educational training sessions were performed in person, as was done for the AR sessions, to accommodate social and experiential learning and to avoid potential complications that could arise with the lack of reliable internet access. Specific information about how CHWs were recruited is provided in the Recruiting and Maintaining CHWs section.

The curriculum for the training program was modeled after the peer mentoring training curriculum by Bally and Bakke (2007), in addition to the AR lesson plans that were developed and outlined in Table 1. The Bally and Bakke (2007) 16-credit hour program, primarily online, was designed for college graduates with hearing loss to provide AR to adults in their community under the supervision of hearing health care professionals. Successful applicants to this training program needed to demonstrate their interest in peer mentoring and in advocating for those with hearing loss. The 2-year program consisted of an Introduction to Peer Mentoring, Peer Mentoring for Hearing Loss, and Applications of Peer Mentoring (five credits), Hearing Loss in America (three credits), Biopsychosocial Aspects of Hearing Loss (three credits), Practical Audiology (three credits), and Assistive Listening Devices (two credits). Bally and Bakke (2007) reported that the program had the potential to help fill the needs of those with hearing loss in smaller community settings. Initial anecdotal evidence suggested that it was well received by those completing the training and by consumers. As of the fall of 2023, however, this certificate program at

Gallaudet University was on hold and no new applications were being accepted. The final content of the CHW training program for this project is outlined in Table 2.

As with the development of the AR program, social learning theory was used to enhance learning experiences and to help solidify new concepts (Bandura, 1977; Kolb, 2015). Each training session included both academic and experiential learning opportunities, including observations, survey completion, group discussions, role plays, and case studies. Finally, a companion training manual was developed to provide the CHWs with visual resources (including copies of the presentation slides) and step-by-step lesson plans for each AR session. The final curriculum was reviewed with Ms. Hardy and realistic expectations of the CHWs were discussed and suggestions for the presentation of the material were made. In total, nine 1-hr sessions were presented over 3 days of training, conducted over a 3-month period.

After all CHWs completed their initial practical experience with the AR program across the first year of the clinical trial, a 1-day refresher training session was provided to them. During this 3-hr session, each CHW presented two components across all lessons (e.g., discussion of the audiogram, discussion of communication strategies for people with hearing loss, and role-playing). During their regular practical experiences with the clinical trial participants, they could have presented any material in the AR lessons, but during the refresher training, they became the experts in their assigned areas. They taught their assigned material to others in the group, and they provided them with tips for successful presentation. Ms. Hardy was present for this session and provided encouragement and positive feedback to the CHWs.

Results and Discussion

Implementing the Community AR Program

The AR program was held in the communities where the study participants resided. They were held in rooms of community centers or public health departments. All venues for the AR program were provided free of charge except one, which was a for-profit organization that hosted local social events. For this facility, a \$100 fee was charged for each 1-hr session and was covered by research funds to the first author. During the AR sessions, food typically was not provided, but during the summer months, it was crucial to have water available for study participants.

The structure of the OTC HA clinical trial involved three groups of participants who were randomly placed in a group where they received full support with their OTC hearing aids, little support, or no support with their aids.

Table 2. Hearing coaching training program for community health workers.

Training session	Content
1 – Introduction to Mentoring and Hearing Loss in America	<ul style="list-style-type: none"> • Team building • Goals of mentoring/goals of training program • Hearing loss and social and economic impact, community resources, technology resources
2 – Practical Audiology I	<ul style="list-style-type: none"> • Anatomy and physiology of the hearing mechanism • Hearing loss disorders • Hearing evaluation • Audiogram
3 – Practical Audiology II	<ul style="list-style-type: none"> • Audiogram practice/case studies • Communication breakdown • Communication repair strategies
4 – Hearing Assistive Technology	<ul style="list-style-type: none"> • Hearing aid basics • Over-the-counter hearing aids • Assistive listening technology • Communication strategies to support use of technology
5 – Hearing Loss and Emotional Well-Being	<ul style="list-style-type: none"> • Social consequences of hearing loss • Emotional consequences of hearing loss
6 – Application of Knowledge I	<ul style="list-style-type: none"> • Aural rehabilitation program specifics • Instruction manual review
7 – Application of Knowledge II	<ul style="list-style-type: none"> • Aural rehabilitation program specifics • Instruction manual review
8 – Mentoring Essentials	<ul style="list-style-type: none"> • Mentoring approaches and strategies • CHW and referral process • Hearing health care needs assessments • Problem solving

Each participant was provided with binaural Sound World Solutions HD375R hearing aids, free of charge. Participants who received full support attended the 4-week AR program and those who received little or no support attended four 1-hr presentations related to general health (i.e., nutrition, exercise, aging, and emotional well-being) presented by a local community member with expertise in the topic areas. After the first 4 weeks of the clinical trial all participants completed speech perception testing and surveys that assessed hearing aid satisfaction and use, general health, and quality of life. The participants who received the initial round of AR sessions then attended the general health sessions and those who attended the general health sessions attended the 4-week AR program. Speech perception testing and surveys were then completed by all participants.

During the first year of the AR sessions, the CHWs were supervised by the first author to ensure correct

information was being relayed to the participants and to provide effective models or presentations of concepts. Initially, CHWs were given small tasks (e.g., reading out loud the communication rules) during each AR session to build confidence before venturing into the presentation of more complex material such as the discussion of degrees of hearing loss. Because the sessions were repeated with two different groups, CHWs in each community were given many opportunities to practice their skills, which led to ever increasing confidence in performing their tasks. The first author made notes of how the CHW performed in the AR sessions after the completion of each program, which included how prepared the CHWs were, the ease with which they interacted with the group participants, and their proficiency conducting their assigned tasks. These notes, along with comments following each AR session, were verbally conveyed to the CHWs. Toward the latter half of the AR sessions in each county, the supervisor was able to step back and let the CHWs lead the sessions, which very much

fostered increased interaction between them and their fellow community residents with hearing loss.

Recruiting and Maintaining CHWs

Potential CHWs were identified using several outlets, which included advertisements in newspapers and in community centers, word of mouth, and by approaching adults who received hearing evaluations with the Hear Here Alabama mobile audiology clinic (<http://www.hearing.ua.edu>). The majority of CHWs were recruited by reaching out to community partners and asking for their suggestions. Initially, 16 people from five different counties in Alabama were recruited. Ideally, two CHWs were needed for each county to provide the AR sessions. Extra CHWs were recruited to accommodate those who might not be able to attend all sessions or for those who had to back out of the program due to other commitments. Within the first year of the clinical trial, six CHWs were not able to continue their participation in the program, leaving 10 CHWs, two in each of the five counties, to provide the AR services. Demographic information for the CHWs is provided in Table 3. Fifteen of the 16 CHWs were Black or African American (i.e., 94%), and one was White (i.e., 6%). In the targeted communities for the clinical trial the number of Black or African American people ranged from 53% to 70% and the number of White residents ranged from 24% to 44% (U.S. Census Bureau, 2024). Seven of the 16 CHWs did not have a college degree but they either completed high school or had some college experience (i.e., 12.5% had a high school diploma, 31.3% had some college experience, and approximately 50% of the CHWs had a college degree). As previously outlined, those with a high school education in the targeted areas for the study ranged from 77.7% to 89.1% and those with a bachelor's degree ranged from 11.6% to 22% (U.S. Census Bureau, 2022). All CHWs were either working in or were retired from organizations that interacted with the public, including public education venues, community centers, medical centers, or were leaders in their organizations and had good interpersonal skills. Each CHW was a "trusted" individual in their respective communities, a key component of a CHW. They all had an interest in working with adults with hearing loss, two had mild to moderate hearing loss, and all had friends or family members with hearing loss.

CHWs were hired by The University of Alabama as temporary employees and were paid a starting rate of \$16 per hour, a competitive hourly rate in Alabama, for the services they provided. They were not hired as independent contractors, because they were provided with training and materials to complete their responsibilities. Typically, according to the Internal Revenue Service (IRS), independent contractors have a separate workplace, are not supervised, and

Table 3. Community health worker demographic information.

CHW (N = 16)	n	Percent (%)
Gender		
Female	15	93.8
Male	1	6.3
Age		
≤ 40 years	3	18.8
41–55 years	5	31.3
56–69 years	7	43.8
≥ 70 years	1	6.3
Race		
Black or African American	15	93.8
White	1	6.3
Ease of paying for essentials		
Not difficult at all	3	18.8
Not very difficult	4	25
Somewhat difficult	9	56.3
Very difficult	0	0
Education		
High school or GED	2	12.5
Some college	5	31.3
2-year college degree	3	18.8
4-year college degree	1	6.3
Master's degree	4	25
No response provided	1	6.3
Marital status		
Married	8	50
Domestic partnership	1	6.3
Divorced	4	25
Never married	2	12.5
No response provided	1	6.3
Current hearing aid user		
Yes	1	6.3
No	15	93.8

Note. One community health worker (CHW) did not provide a response for level of education and marital status. Ease of paying for essentials was based on responses to the question, "How hard is it for you to pay for the very basics (food, housing, medical care)?" GED = General Educational Development.

have existing specialized skills they use to perform the task (IRS, 2024).

Finally, considering that these individuals were temporary workers and most had other jobs or responsibilities, having at least two CHWs per county helped to accommodate for any absences due to other commitments. Essentially, planning and flexibility with scheduling helped to ensure that the AR sessions were properly staffed.

Training CHWs

Three different locations across the targeted rural communities were used for the in-person training sessions, two in community centers and one in a local community

Table 4. Timeline for the development and implementation of the aural rehabilitation program.

Task	Dates
Development of AR program	March 2021 to August 2022
Recruiting CHWs	March 2021 to August 2022
Development of CHW training	September 2021 to September 2022
CHW in-person training	October, November, December 2022
CHW practicum training	January 2023 to March 2024

Note. AR = aural rehabilitation; CHWs = community health worker.

college. The resources available at the community college provided access to a larger presentation room, which accommodated both large and small group work activity, access to a reliable internet system, and access to a break room and kitchen area. Moving forward, this facility will be used for yearly refresher training sessions.

Two to three of the eight 1-hr training sessions were provided on each training day, resulting in three training days, each held on a Saturday in the fall of 2022. Each session was divided into the presentation of didactic material, small and large group discussions, hands on learning experiences, and breaks. Prior to the training, a general hearing knowledge quiz was administered (pretraining quiz) and, on the last day of training, a posttraining quiz was given. The pre- and posttraining quiz included questions related to audiogram symbols, communication strategies, and hearing aid features, concepts that were presented during the training. On the final day of training, CHWs were given opportunities to practice conducting the AR lessons with each other. On this day, they also completed a training feedback survey. Finally, training was provided by the first three authors, all certified and licensed audiologists, and Ms. Hardy, who has extensive experience training CHWs as previously described.

Using input from the feedback survey and from other study personnel, it would have been more effective if CHWs were given opportunities to practice the lesson plans at each session. Using this format, however, would most likely have resulted in an additional training day. Prior to each hands-on practice session, CHWs were given model demonstrations for how to present the targeted material as outlined in the lesson plan. Even though CHWs were given opportunities to practice the material from the lesson plans with each other, the bulk of the training occurred during the actual AR sessions with the study participants in the OTC HA clinical trial. The experiential training, therefore, was ongoing and a group refresher training session was organized for each year of the study.

Timeline

The development and implementation of the AR program took place over a 3-year period, from March

2021 to March 2024. Specific timeframes for each aspect of the program are outlined in Table 4.

Summary

The information outlined in this work describes the development and implementation of an AR program and the training of CHWs to enact the program in rural communities. For this initiative, addressing the needs of those who received the AR sessions and of the CHWs providing this assistance was crucial for the program's success. Throughout the 3-year process of the development and implementation, adjustments were made to ensure that the program was effective and interactive. CHWs were given models of how to enact the AR program and had many opportunities to practice their skills. Ultimately, the effectiveness of the AR sessions and the CHW educational training will be assessed through the pre- and posttraining quizzes, a training evaluation survey and by the measures completed by the adults with mild-to-moderate hearing loss who received this support, including but not limited to the Hearing Handicap Inventory for the Elderly, the Abbreviated Profile of Hearing Aid Benefit, and the International Outcomes Inventory for Hearing Aids. These outcomes will be presented in future publications. Ultimately, outcomes from these measures have the potential to guide how hearing health care is provided to residents living in rural underserved communities. Understanding how CHWs can assist with the provision of hearing health care in rural areas could lead to improved care for those with hearing loss and who currently have no or very limited access to hearing health care.

Data Availability Statement

No data sets were analyzed for this study and, consequently, data sharing is not applicable. Detailed lesson plans for the aural rehabilitation program can be requested from the first author.

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