

8-2020

## Application Of Self-Efficacy Training in Group Aural Rehabilitation: An Interprofessional Collaborative Model

Stephen D. Roberts

*California State University, Fresno*

Nancy A. Delich

*California State University, Fresno*

Follow this and additional works at: <https://repository.wcsu.edu/jadara>

---

### Recommended Citation

Roberts, S. D., & Delich, N. A. (2020). Application Of Self-Efficacy Training in Group Aural Rehabilitation: An Interprofessional Collaborative Model. *JADARA*, 53(3), 23-49. Retrieved from <https://repository.wcsu.edu/jadara/vol53/iss3/3>

## **Application of Self-Efficacy Training in Group Aural Rehabilitation: An Interprofessional Collaborative Model**

### **Abstract**

Few studies have explored self-efficacy training with persons with hearing loss (PHLs), yet alone with their communication partners (CPs). The purpose of this mixed-method study was to examine the impact of self-efficacy training as a framework for an Interprofessional Psychosocial Group Aural Rehabilitation (IPGAR) workshop with PHLs and their CPs. Four PHLs and their four CPs consented to participate in the IPGAR workshop that employed interventions including short lectures, psychosocial exercises, communication strategies training, speech perception training, adaptive/stress reduction exercises, and group discussions relevant to mutually established shared goals for each couple. The participants reported improved communication abilities in the majority of the skills assessed via the post-IPGAR workshop evaluation measure resulting in a competent and efficacious communication skill set both individually and as a couple. Three overarching themes emerged from the analysis of the participants' comments from the workshop evaluation: (a) education, skill training, and practice: mastery experience; (b) learning from role models and each other: vicarious experience; and (c) increased communication self-efficacy as an individual and as a couple. Moreover, a pre- and post-workshop design was employed using the Self-Efficacy for Situational Communication Management Questionnaire (SESMQ) for PHLs to rate their self-efficacy and a modified SESMQ-Proxy for CPs to rate their perception of their partner's self-efficacy. The findings indicated that the CPs viewed their spouses as more confident on the self-efficacy subscale than their partners did in managing communication situations.

*Keywords: aural/audiologic rehabilitation, communication partner, person with hearing loss, self-efficacy, SESMQ*

### **Authors:**

Stephen D. Roberts, Ph.D., Department of Communicative Sciences and Deaf Studies, California State University, Fresno, 5310 N. Campus Drive M/S PH102, Fresno, CA 93740-8019.

Email: [stroberts@csufresno.edu](mailto:stroberts@csufresno.edu)

Nancy A. Delich, Ed.D., Department of Social Work Education, California State University, Fresno, 5310 N. Campus Drive M/S PH102, Fresno, CA 93740-8019.

Email: [ndelich@csufresno.edu](mailto:ndelich@csufresno.edu)

### **Corresponding Author:**

Stephen D. Roberts, Ph.D., Department of Communicative Sciences and Deaf Studies, California State University, Fresno, 5310 N. Campus Drive M/S PH102, Fresno, CA 93740-8019.

Email: [stroberts@csufresno.edu](mailto:stroberts@csufresno.edu)

Phone: (559) 431-4323

## **Introduction**

Adults with hearing loss acquire a unique set of communication skills in aural/audiologic rehabilitation. Learning and developing new skills require behavioral changes and flexibility in adapting to ever-changing and taxing communication situations. Persons with hearing loss often express low confidence in implementing learned communication skills. Increasing confidence in the ability to perform audiologic rehabilitation skills may result in more successful management of hearing loss in daily living (Smith, 2014). This confidence is referred to as perceived self-efficacy.

Perceived self-efficacy refers to beliefs concerning one's capabilities to successfully achieve personal goals through effort and determination (Bandura, 1986, 1997). Such beliefs should not be confused with general overall confidence, which refers to a person's abilities over a wide range of situations (Bandura, 1986, 1997). Self-efficacy beliefs are situation- or domain-specific. Individuals can have high confidence in their abilities to accomplish a specific behavior in one domain, while at the same time experience low confidence in their abilities to accomplish a different behavior in another domain (Smith, 2014). For example, an individual may be confident and demonstrate high self-efficacy in the ability to use a computer, yet lack confidence and demonstrate low self-efficacy in the ability to engage in public speaking (Smith, 2014).

The application of self-efficacy has emerged as a relatively new yet versatile construct in aural/audiologic rehabilitation. Weinstein (2014) recommended that audiologists consider incorporating interventions that promote self-efficacy into the counseling session with those experiencing hearing loss. Persons with higher levels of perceived self-efficacy take greater responsibility for managing their health conditions and exert more effort to persevere through challenges (Rodin, 1986; Smith & West, 2006). In aural rehabilitation, self-efficacy refers to the beliefs individuals have about their abilities to manage difficult communication situations as well as plan and execute a course of action to improve their communication interactions in a given environment (Tye-Murray, 2015). To achieve the goal of improved communication and quality of life, Gregory (2011) advised that self-efficacy be established as an essential aim of aural rehabilitation. Understanding the impact of hearing loss on communication and the quality of life is important not only for the person with a hearing loss (PHL), but also for his/her communication partner (CP). Involving the CP, such as a spouse, in the aural rehabilitation process can aid in the reduction of hearing difficulties (Preminger, 2003). In addition, adults with acquired hearing loss may be more likely to undertake rather than withdraw from challenging environments if they have been instructed on strategies to manage difficult communication situations, have strong beliefs in their capabilities to use those techniques, and have courses of action to meet the demands of those situations (Jennings, Cheesman, & Laplante-Lévesque, 2014). Thus, a person's sense of self-efficacy can influence one's willingness to engage in activities and conversations. The higher the sense of self-efficacy, the more determined a person becomes in the face of challenges.

### **Sources of Self-Efficacy**

The versatility of the self-efficacy framework lies in its ease of incorporation into any aural rehabilitation intervention. Bandura (1997) emphasized that one of the best ways to avoid low

self-efficacy is to avoid failure when learning a new task. A clinician can strengthen a person's beliefs by systematically applying four sources of influence from which self-efficacy beliefs are constructed during aural rehabilitation training. These sources of influence include: (a) *enactive mastery experience* in which one successfully practices a skill or behavior, (b) *vicarious experience* in which one observes respected role models, (c) *verbal persuasion* in which one receives encouragement and support from valued others, and (d) *physiologic and affective states* in which one learns to keep emotions and physiological arousal at a self-supporting level (Bandura, 1977). A given influence may operate through one or any combination of these four sources of influence.

### ***Mastery Experience***

The first and most persuasive of the four types of influence in which self-efficacy is derived is enactive mastery experience (Bandura, 1986, 1997). If the skill is performed successfully, then self-efficacy is judged as being high for that skill. Conversely, failure to perform the skill successfully results in low-efficacy judgments (Bandura, 1997). The clinician may employ methods such as realistic goal setting, role-playing, practice sessions, repetition, and homework to practice in daily life (Delich & Roberts, 2017; Smith, 2014; Smith & West, 2006).

### ***Vicarious Experience***

As the second most effective influence, vicarious experience is defined as learning “mediated through modeled attainments” (Bandura, 1997, p. 80). Direct observation of others succeeding can reinforce an individual's belief that he/she too can succeed. Various techniques that utilize the influence of vicarious experience include observing mastery and peer models, viewing instructional videos with peer models, and self-modeling via video recording (Delich & Roberts, 2017; Smith, 2014; Smith & West, 2006).

### ***Verbal Persuasion***

The third and most common source influencing self-efficacy beliefs is verbal persuasion. Extensively applied due to its ease and ready availability in attempts to effect behavior, verbal persuasion is defined as feedback from others about one's capabilities and probability of success (Bandura, 1977; Maddux & Gosselin, 2003). Applying verbal persuasion, specific and positive feedback, self-talk, immediate feedback, encouragement, and educational materials are approaches that can increase self-efficacy (Delich & Roberts, 2017; Smith, 2014; Smith & West, 2006).

### ***Physiological and Affective States***

The fourth source of influence regarding self-efficacy judgments is how individuals feel emotionally and physically as they contemplate an action and execute behaviors (Bandura, 1997). Also known as emotional arousal, individuals evaluate their capacity to engage in demanding undertakings by attending to their physiological and affective states such as anxiety, excitement, stress, and fatigue. Offering extra time to practice skills, scheduling multiple appointments, planning breaks during skill exercises, providing supportive feedback, creating a

calm environment free from distractions, and counseling to reduce anxiety and stress are effective techniques that can positively influence physiological and affective states (Delich & Roberts, 2017; Smith, 2014; Smith & West, 2006).

***Combination of Sources of Influence***

A combination of the sources of influence is recommended for enhancing self-efficacy judgments, particularly when mastery experience and vicarious experience are combined (Bandura, 1997). Moreover, Maddux and Lewis (1995) emphasize that a combination of all four sources of information is the most influential manner in which to increase self-efficacy. Smith and West (2006) developed a comprehensive tutorial of the self-efficacy framework with suggestions on how this model enhances audiologic rehabilitation programs. They recommended that clinical interventions would be more effective when incorporating a self-efficacy framework in the audiologic rehabilitation process. Delich and Roberts (2017) developed a psychoeducational intervention model that school social workers can utilize to increase deaf and hard of hearing students’ self-efficacy through use of the four sources of influence. This intervention model was adapted to enhance PHLs’ and their CPs’ self-efficacy judgments as an essential component of an Interprofessional Psychosocial Group Aural Rehabilitation (IPGAR) program (Delich & Roberts, 2018; Roberts & Delich, 2019). Table 1 shows the four sources of influence and specific strategies within the psychoeducational self-efficacy intervention framework for PHLs and CPs in the aural rehabilitation process. These strategies can be used individually or in combination to enhance self-efficacy judgments when individuals are learning new skills to manage difficult communication situations.

Table 1  
*Strategies to Assist Participants in Enhancing Communication Self-Efficacy Using the Four Sources of Influence*

<b>Mastery Experience</b>	<b>Vicarious Experience</b>	<b>Verbal Persuasion</b>	<b>Physiological and Affective States</b>
Support participants in establishing realistic and attainable goals for their progress.	Provide opportunities to learn from trusted role models.	Provide realistic and continuous feedback that focuses solely on success.	Create a calm and stable group audiologic rehabilitation environment.
Structure skill training by dividing skill into distinct subsets.	Provide peer models to learn from one another.	Encourage participants’ own positive self-talk.	Encourage awareness of emotional arousal during stressful learning situations.
Introduce and model new skill and provide frequent practice opportunities.	Provide opportunities for vicarious learning using technology.	Provide participants with materials/handouts on specific skill being taught.	

Introduce and utilize roleplaying to help practice new skill.	Create opportunities for cognitive rehearsal.		
Subjective assessment of learned skill and appraisal of past performances.			

## Purpose of the Study

There is a paucity of research that has explored self-efficacy training with PHLs, yet alone with their CPs. The purpose of this research study was to examine the application of self-efficacy training as an essential framework for PHLs and their CPs participating in a two-day IPGAR workshop. The research question of this study was: “What is the impact of self-efficacy training as an essential framework for an IPGAR workshop with adults with hearing loss and their communication partners/spouses?”

## Methods

### Participants

Institutional Review Board approval was obtained by the Department of Communicative Sciences and Deaf Studies at California State University, Fresno prior to initiation of the study protocol. Purposive sampling was used to select participants for this study. Participants were recruited through flyers and electronic communications at the university and clinics in the community. Hearing aid users with at least 3 months’ experience and between the ages of 55 and 85 years were invited to participate in the study. Inclusion criteria for participants with hearing loss consisted of the following: (a) acquired hearing loss during adulthood, (b) recent audiologic evaluation within the past year, (c) scores within the normal range ( $\geq 24$  points) on the Mini-Mental Status Examination 2 (MMSE-2; Folstein, Folstein, & McHugh, 1975), (d) corrected binocular visual acuity of at least 20/40 (Hardick, Oyer, & Irion, 1970), and (e) involvement of a CP with whom the participant regularly communicates and willing to participate in the study. Inclusion criteria for CP participants consisted of the following: (a) partners/spouses who interacted with the PHL on a regular basis, (b) no known hearing loss, (c) scores within the normal range on the MMSE-2, (d) corrected binocular visual acuity of at least 20/40, and (e) no known psychiatric history. Volunteers were screened and met these predetermined inclusion criteria prior to study enrollment.

### Procedure

Four PHLs and their CPs consented to participate in the study. Prior to the IPGAR workshop, each couple met with the researchers at a location convenient for them to complete a joint interview utilizing a content valid questionnaire (Delich & Roberts, 2019; Roberts & Delich, in press). The MMSE-2 was also administered to assess the PHLs’ and CPs’ cognitive function. In addition, each couple met with the researchers to develop measurable functional goals using the Goal Sharing for Partners (GSP; Preminger & Lind, 2012) to guide the PHLs and CPs

throughout the IPGAR workshop. GSP is a shared goal setting strategy that includes questions to facilitate discussions between the PHLs and their CPs to establish mutually devised communication goals (Preminger & Lind, 2012). The PHLs also completed the pre-IPGAR workshop Self-Efficacy for Situational Communication Management Questionnaire (SESMQ; Jennings et al., 2014) and the CPs completed the pre-IPGAR workshop SESMQ-Proxy.

The four PHLs and their CPs participated in a two-day IPGAR workshop. One month following successful conclusion of the workshop, the PHLs completed the post-workshop SESMQ, the CPs completed the post-workshop SESMQ-Proxy, and all participants completed the three-part IPGAR workshop evaluation.

### IPGAR Workshop Interventions

The training was held in a large conference room configured to maximize auditory and visual speech perception. A two-member interprofessional team collaborated on the curriculum development and conducted the workshop. Interprofessional collaboration is described as two or more professions working together to achieve common goals in addressing various problems and complex issues (Green & Johnson, 2015). One member of the team was a licensed clinical social worker, university professor, had a bilateral severe-to-profound sensorineural hearing loss, and utilized a bimodal fitting with a cochlear implant and hearing aid. The other member was a hearing licensed clinical audiologist, rehabilitation counselor, university professor, and a CP.

The IPGAR workshop involved a series of evidence-based interventions including short lectures, problem-identification and problem-solving psychosocial exercises, communication strategies training, speech perception training, adaptive/stress reduction exercises, and interactive group discussions relevant to the mutually established shared goals for each couple. Projected slides and captioned videos were used and a workshop manual that included educational materials was provided to each participant. Table 2 provides a summary of the interventions and activities of the two-day workshop.

Table 2  
*IPGAR Workshop Interventions/Activities*

<b>Intervention/Activity</b>	<b>Examples</b>
Informational Lectures	<ul style="list-style-type: none"> <li>• Understanding Hearing Loss</li> <li>• Psychosocial Issues Associated with Hearing Loss</li> <li>• Six Steps to Improved Understanding with Communication Strategies</li> <li>• Conversational Characteristics &amp; Communication Styles</li> <li>• Communication Self-Efficacy</li> <li>• Hearing Aid and Hearing Assistive Technology Systems</li> <li>• Introduction to Communication Facilitative Strategies for Persons with Hearing Loss</li> <li>• Clear Speech for Communication Partners</li> </ul>

	<ul style="list-style-type: none"> <li>• Communication Repair Strategies</li> <li>• Tips and Tools for Speech Reading</li> <li>• Speech Recognition in Noise Activities</li> <li>• Anticipatory Strategies: Problem Identification-Exploration-Resolution Framework</li> <li>• Conflict Management – Criticism, Defensiveness, Contempt and Stonewalling</li> <li>• Adaptive/Stress Reduction Strategies</li> </ul>
Communication Strategy Training Group Exercises	<ul style="list-style-type: none"> <li>• Practicing six steps to improved understanding with communication strategies for PHLs</li> <li>• Practicing clear speech for CPs</li> <li>• Practicing communication repair strategies for PHLs and CPs</li> <li>• Practicing assertiveness skills for PHLs and CPs</li> <li>• Practicing anticipatory skills for PHLs and CPs</li> </ul>
Speech Perception Training for PHLs	<ul style="list-style-type: none"> <li>• Speech reading training (in quiet and in noise)</li> <li>• Auditory training (in quiet and in noise)</li> </ul>
Group Problem Identification & Problem-Solving Psychosocial Exercises	<ul style="list-style-type: none"> <li>• “What is the most challenging thing about having a hearing loss?” group psychosocial exercise</li> <li>• “What is the most challenging thing about having a partner with a hearing loss?” group psychosocial exercise</li> </ul>
Communication Self-Efficacy Training	<ul style="list-style-type: none"> <li>• Practicing competent and confident communication management skill sets for both PHLs and CPs</li> </ul>
Adaptive/Stress Reduction Exercises	<ul style="list-style-type: none"> <li>• Breathing and relaxation exercises</li> <li>• Muscle tensing and relaxation exercises</li> </ul>

### ***Informational Lectures***

Topics were presented using PowerPoint presentations and captioned videos ranging in duration from approximately 30 to 45 minutes. A summary of the topics can also be found in Table 2. Questions and discussions from participants were encouraged.

### ***Problem-identification and Problem-solving Psychosocial Exercises***

The researchers developed a list of predetermined questions and prompts for both PHLs and CPs when leading a structured discussion for each psychosocial topic. Psychosocial exercises were designed to encourage discussion of the following questions directed to the PHLs: When and how did you first develop a hearing loss? What is the most challenging thing about having a hearing loss? Name and discuss one activity that you have stopped doing because of your hearing loss. Conversely, the following questions were directed to the CPs: When did you first notice that your partner seemed to have a hearing loss? What is the most challenging thing about being a communication partner of someone with a hearing loss? Name and discuss one activity that you have stopped doing because of your partner’s hearing loss. These questions served to elicit problems, feelings, attitudes, and emotions associated with hearing loss; other people’s

reactions to the hearing loss; and the impact of hearing loss on personal and professional relationships (Hogan, 2001).

### ***Communication Strategies Exercises***

Communication strategies training included understanding and practicing assertiveness skills, anticipatory strategies and communication repair strategies for PHLs and CPs as well as clear speech for CPs. Exercises were adapted from Tye-Murray (1997), and Kaplan, Bally, and Garretson (1985). During the communication strategies training, participants were encouraged to offer solutions. When appropriate, the researchers then proposed and modeled solutions that were not identified by the participants.

### ***Speech Perception Training***

The concentration exercise was utilized to demonstrate the value of concentration, context, speechreading, and listening in quiet and in the presence of background noise. This exercise allowed PHLs and their partners to observe the benefits of speechreading and how divided attention affected their understanding of the story (Preminger, 2011).

### ***Adaptive/Stress Reduction Exercises***

With the goal of decreasing anxiety and enhancing message recognition, adaptation strategies including breathing and relaxation techniques are recommended for managing emotions and negative behaviors associated with hearing loss (Tye-Murray, 2015), and should be incorporated in a group audiologic rehabilitation program (Preminger & Nesbitt, 2014). Breathing and relaxation mindfulness exercises were selected to help participants practice stress reduction responses in communication situations.

## **Data Collection**

A convergent parallel mixed-method design was employed where quantitative and qualitative data were collected concurrently, analyzed separately, and merged in a final interpretation (Creswell & Plano Clark, 2011). Quantitative data were collected over a two-month period, and qualitative data were collected one month after the workshop.

### ***Quantitative Assessments***

Quantitative measures included the IPGAR workshop evaluation instrument to evaluate the participants' perceived benefit of the workshop, the SESMQ to assess the perceived self-efficacy of PHLs prior to and following participation in the IPGAR workshop, and the SESMQ-Proxy to assess the CP's understanding of his/her partner's self-efficacy as a result of living with a hearing loss prior to and following participation in the IPGAR workshop.

### ***IPGAR Workshop Evaluation Measure***

The purpose of this measure was to assess the participants' perceived benefit of the workshop. All participants were asked to complete a three-part IPGAR workshop evaluation instrument one month following the completion of the workshop. The first part included a 15-item scale designed to measure the perceived communication abilities from the workshop interventions. The 15 items of the communication abilities scale were rated on a 5-point Likert Scale (i.e., "became a lot worse = 1," "became a little worse = 2," "stayed the same = 3," "became a little better = 4," "became a lot better = 5"). The second part comprised an 8-item scale designed to measure the overall importance of various activities of the IPGAR workshop. The 8 items of the importance scale were rated on a 5-point Likert Scale (i.e., "strongly disagree = 1," "disagree = 2," "neutral = 3," "agree = 4," "strongly agree = 5"). The third part of the evaluation form solicited qualitative comments from the participants regarding acquired skills and knowledge, most and least valuable aspects, and any additional thoughts and feelings about the IPGAR workshop.

### ***Self-Efficacy Measures***

Smith (2014) stated that within the self-efficacy model, a person's self-efficacy for a specific audiologic rehabilitation behavior could be assessed formally through the use of standardized questionnaires. Two questionnaires were used as outcome measures for self-efficacy for two reasons. First, perceived self-efficacy could impact a PHL's activity limitations, participation restrictions, and response to audiologic rehabilitation (Jennings et al., 2014). The SESMQ is designed as an informative measure of perceived self-efficacy for PHLs prior to and following participation in a group aural rehabilitation program (Jennings et al., 2014). Second, there is a paucity of research that has investigated the PHL's self-efficacy as perceived by the CP. Currently, there are no reliable and valid communication self-efficacy measures for CPs or self-assessment proxy questionnaires that measure the CP's understanding of their partner's self-efficacy as a result of living with a hearing loss. Thus, the SESMQ was modified for this study to evaluate the CP's perception of their partner's self-efficacy via a self-reported self-efficacy assessment proxy measure.

Following the GSP activity, the PHLs completed the pre-workshop SESMQ, which contained 20 items for which the listener rates his/her confidence for managing the communication situation based on a scale ranging from 0 to 10. The SESMQ asked respondents to first rate *how well* they can hear in a particular situation on a 10-point scale (e.g., You are on the bus and a stranger talks to you with one hand over his/her mouth. How well can you hear in this situation?). Respondents were then asked to rate *how confident* they are in managing the communication situation on a second 10-point scale (e.g., You are on the bus and a stranger talks to you with one hand over his/her mouth. How confident are you that you can manage this situation?). Thus, a combined hearing score and a self-efficacy score is then calculated by summing the ratings across 20 items (possible range: 0 to 200 points). The higher values for hearing and self-efficacy scores indicate better self-perceived hearing ability and greater self-efficacy for managing specific communication situations (Jennings et al., 2014).

The CPs completed the self-efficacy questionnaire designed specifically for this investigation following the GSP activity. The SESMQ was modified to assess the CP's understanding of their partner's self-efficacy as a result of living with a hearing loss. The proxy is nearly identical to the SESMQ except the word "you" was changed to "your spouse/partner/friend" in the 20 perceived hearing ability and self-efficacy situations to measure the CP's perception of their partner's self-efficacy on a scale ranging from 0 to 10. The SESMQ-Proxy asks the CPs to first rate *how well* they believe their partner/spouse with a hearing loss can hear in a particular communication situation on a 10-point scale (e.g., Your spouse/partner/friend is on the bus and a stranger talks to him/her with one hand over his/her mouth. How well can your spouse/partner/friend hear in this situation?). The CPs are then asked to rate *how confident* they believe their partner with a hearing loss can manage a particular communication situation on a second 10-point scale (e.g., Your spouse/partner/friend is on the bus and a stranger talks to him/her with one hand over his/her mouth. How confident is your spouse/partner/friend that he/she can manage this situation?). A combined hearing score and a self-efficacy score is then calculated by summing the ratings across 20 items (possible range: 0 to 200 points). Higher values for hearing and self-efficacy scores indicate better self-perceived hearing ability and greater self-efficacy for their partners in managing specific communication situations as rated by the CP.

### ***Qualitative Assessment***

Qualitative data were collected from the written comments section at the end of the IPGAR workshop evaluation measure from the 8 participants. Under the four areas in the written comments section, participants were asked to describe their IPGAR workshop experiences regarding: (a) acquired skills and knowledge, (b) the most valuable part of the IPGAR workshop, (c) the least valuable part of the IPGAR workshop, and (d) any additional thoughts or feelings about the IPGAR workshop that they may have.

### **Data Analysis**

#### ***Quantitative Analysis***

Using SPSS Statistics software, the data were analyzed from the IPGAR workshop using standard statistical procedures (Howell, 2002; Tabachnick & Fidell, 2012). A paired t-test was utilized to evaluate mean differences between pre- and post-workshop self-efficacy measures from the SESMQ for PHLs and the SESMQ-Proxy for the CPs. An independent samples t-test was also utilized to evaluate mean differences between PHLs using the SESMQ and CPs using the SESMQ-Proxy for both the pre- and post-IPGAR workshop conditions. In addition, a Cronbach's alpha was utilized to measure the internal reliability of the 15-item communication abilities scale as well as the 8-item importance scale of the IPGAR workshop evaluation instrument.

#### ***Qualitative Analysis***

All eight participants' written comments were first compiled under each of the four areas of the workshop evaluation measure. The comments were then given a line-by-line analysis by noting relevant units of meaning and creating free codes independently by each of the two researchers.

Employing an open-coding method, these lines were summarized in marginal text boxes. Next, the comments were grouped into relevant topics and transferred to index cards for further examination, creating broader transitional codes. Using a selective coding method, the index cards were rearranged, organized, and labeled into categories that captured the participants' workshop experiences. These categories were integrated across participants to generate a list of overarching themes that depicted the participants' workshop experiences. The final level of analysis involved the examination of relationships and interactions amongst the overarching themes. By mutual agreement, minor differences in the researchers' perspectives were resolved.

### *Mixed-Method Analysis*

Quantitative results were compared with the overarching themes derived from the qualitative findings. An analysis and interpretation of the findings were made to determine if the results were comparable and convergent, and if the data expanded the understanding of the research question.

## **Results**

### **Demographics**

Four couples (four PHLs and four CPs) participated in this study. Education, race, and income were not controlled. Table 3 provides the demographic, audiologic, and cognitive characteristics of the PHLs. As shown, all four PHLs were male, white, ranged in age from 65 to 81 years, were retired from the work force with a minimal college education of a bachelor's degree, had a bilateral sensorineural hearing loss, and wore binaural postauricular hearing aids. All four PHLs scored within the normal range ( $\geq 24$ ) on the MMSE-2, suggesting normal cognitive function.

Table 3  
*Demographic, Audiologic and Cognitive Characteristics of Persons with Hearing Loss*

<b>Variable</b>	<b>PHL1</b>	<b>PHL2</b>	<b>PHL3</b>	<b>PHL4</b>
Age (years/months)	75.07	65.10	81.10	81.0
Gender	Male	Male	Male	Male
Ethnicity	White	White	White	White
Education	Master's degree	Bachelor's degree	Bachelor's degree	Master's degree
Professional	Retired school administrator	Retired biologist/ administrator	Retired university administrator	Retired school administrator
MMSE-2	25	30	30	28

PTA (dB HL)				
Right ear	32 dB	51 dB	23 dB	42 dB
Left ear	37 dB	18 dB	23 dB	40 dB
Speech in quiet				
Right ear	90%	84%	80%	92%
Left ear	96%	92%	84%	92%
Type of hearing loss	Bilateral Sensorineural	Bilateral sensorineural	Bilateral sensorineural	Bilateral sensorineural
Amplification	Binaural BTE hearing aids	Binaural BTE hearing aids	Binaural BTE hearing aids	Binaural BTE hearing aids

Table 4 provides the demographic and cognitive characteristics of the CPs. The CPs for all four couples were spouses of the PHLs enrolled in this study. As illustrated, two CPs were White, one was Asian/Pacific Islander, and one was Hispanic. They ranged in age from 62 to 72 years and were retired from the work force with a minimal college education of a bachelor’s degree. All 4 CPs scored within the normal range ( $\geq 24$ ) on the MMSE-2, indicating normal cognitive function.

Table 4  
*Demographic and Cognitive Characteristics of Communication Partners*

<b>Variable</b>	<b>CP1</b>	<b>CP2</b>	<b>CP3</b>	<b>CP4</b>
Age (years/months)	68.0	62.03	63.09	74.01
Gender	Female	Female	Female	Female
Racial/Ethnic Group	Asian-American/ Pacific Islander	Hispanic	White	White
Education	Master’s degree	Master’s degree	Bachelor’s degree	Master’s degree
MMSE-2	30	30	29	30
Professional	Retired school administrator	Retired school teacher	Retired university administrator	Retired school administrator
Relationship to PHL	Spouse	Spouse	Spouse	Spouse

## Quantitative Findings

### *IPGAR Communication Abilities Scale: Reliability*

All eight participants completed the communication abilities scale of the IPGAR workshop evaluation measure. The Cronbach's alpha for the 15-item communication abilities scale was 0.82, suggesting good internal consistency of this scale.

### *IPGAR Communication Abilities Scale: Persons with Hearing Loss*

All four PHLs (100%) reported improved communication abilities (i.e., "became a little better" or "became a lot better") in 12 of the 15 (80%) communication abilities assessed on the IPGAR workshop evaluation measure. The items included the PHLs' ability to: (a) understand their hearing loss, (b) understand their communication needs, (c) use the six steps to improve their understanding with communication strategies, (d) use an assertive communication style, (e) use instructional strategies to influence their CP's speaking behavior, (f) use communication repair skills to tailor their CP's messages, (g) use communication anticipatory strategies for conversational content and potential listening difficulties, (h) use constructive strategies to structure the listening environment for optimal understanding, (i) use communication adaptive strategies to relax and manage their emotions and negative behaviors in difficult listening situations, (j) communicate with their CP in background noise, (k) confidently use their communication strategies with their CP, and (l) enjoy their hearing loss-related quality of life. Of the remaining 3 communication abilities assessed, three of four PHLs (75%) reported improved communication abilities (i.e., "became a little better" or "became a lot better"), which included their ability to: (a) speechread their CP, (b) communicate with their CP in quiet, and (c) meet the shared communication goals with their CP. One PHL reported that these three communication abilities remained the same.

### *IPGAR Communication Abilities Scale: Communication Partners*

All four CPs (100%) reported improved communication abilities (i.e., "became a little better" or "became a lot better") in 10 of the 15 (67%) communication abilities assessed on the IPGAR workshop evaluation measure. The items included their ability to: (a) understand their partner's hearing loss; (b) support their partner's communication needs; (c) face their partner, maintain eye contact, and speak within close proximity in the same room; (d) use an assertive communication style with their partner; (e) use instructional strategies to influence their partner's listening behavior; (f) use constructive strategies to help structure the listening environment for their partner's optimal understanding; (g) empathize to support their partner's ability to speechread them; (h) communicate with their partner in background noise; (i) confidently use communication strategies with their partner; and (j) meet the shared communication goals with their partner. In addition, 3 of 4 CPs (75%) reported improved communication abilities (i.e., "became a little better" or "became a lot better") in 3 of the 15 communication abilities assessed which included their ability to: (a) use communication repair skills when repeating, rephrasing, simplifying and elaborating their messages to their partner; (b) advocate and support their partner's use of anticipatory strategies for conversational content and potential listening difficulties; and (c) support the use of adaptive strategies to support their partner to relax and

manage emotions and negative behaviors in difficult listening situations. One CP (25%) reported these 3 communication abilities remained the same. Two of 4 CPs (50%) reported improved communication abilities (i.e., “became a little better” or “became a lot better”) in 2 of the 15 communication abilities assessed, which included their ability to: (a) communicate with their partner in quiet and (b) enjoy their hearing loss-related quality of life with their partner.

### ***IPGAR Importance Scale: Reliability***

All eight participants completed the importance scale of the IPGAR workshop evaluation measure. The Cronbach’s alpha for the 8-item importance scale was 0.80, suggesting good internal consistency of this scale.

### ***IPGAR Importance Scale: Persons with Hearing Loss***

All four PHLs (100%) indicated the importance (i.e., “agreed” or “strongly agreed”) of all eight items on the scale, which were: (a) the workshop was beneficial for me; (b) I enjoyed being with other people who have similar hearing challenges as me; (c) I enjoyed learning how others cope with their hearing loss; (d) the workshop presentations were well-prepared and informative; (e) the shared communication goals were helpful and tailored to fit both my and my CP’s communication needs; (f) the IPGAR workshop provided useful information, discussion, and practice of communication strategies; (g) the workshop manual provided useful information and is an important part of the overall effectiveness of the workshop; and (h) I believe that my overall communication ability has improved by participating in this IPGAR workshop.

### ***IPGAR Importance Scale: Communication Partners***

All four CPs (100%) indicated the importance (i.e., “agreed” or “strongly agreed”) of all eight items on the scale, which were: (a) the workshop was beneficial for me; (b) I enjoyed being with other people who have similar challenges as me; (c) I benefitted from learning how other CPs cope with their partner’s hearing loss; (d) the workshop presentations were well-prepared and informative; (e) the shared communication goals were helpful and tailored to fit both my and my partner’s communication needs; (f) the IPGAR workshop provided useful information, discussion, and practice of communication strategies; (g) the workshop manual provided useful information and is an important part of the overall effectiveness of the workshop; and (h) I believe that my overall communication ability has improved by participating in this IPGAR workshop.

### ***Self-Efficacy Ratings Between Pre- and Post-Workshop Assessments***

Table 5 presents the summary table of the paired t-tests for ratings between the pre- and post-workshop assessments for the SESMQ total scale, hearing ability subscale, and the self-efficacy subscale with PHLs ( $n = 4$ ). As shown, there was no significant difference ( $p > .05$ ) in the total mean ratings between pre- and post-workshop assessments for the SESMQ total scale, hearing ability subscale, and the self-efficacy subscale. Thus, the results indicate that the PHLs did not rate the pre-workshop differently than the post-workshop ratings on the three scales of the SESMQ.

Table 5  
Paired T-Test Results for PHLs' Pre/Post Workshop SESMQ Ratings ( $N = 4$ ).

Assessment Measure	Pre-Workshop		Post-Workshop		T-value	P-value	Cohen's $d$ :
	Mean	SD	Mean	SD			
SESMQ Total Scale	201.75	45.53	219.50	26.44	-.806	.479	
SESMQ Hearing Ability Subscale	82.25	16.13	84.75	11.98	-.297	.786	
SESMQ Self-Efficacy Subscale	119.50	33.97	134.75	27.75	-.888	.441	

\* $p < .05$

Table 6 presents the summary table of the paired t-tests for ratings between the pre-and post-workshop assessments for the SESMQ-Proxy total scale, hearing ability subscale, and the self-efficacy subscale for CPs ( $n = 4$ ). As illustrated, the CPs scored significantly higher post-workshop ( $M = 166.75$ ,  $SD = 23.42$ ) total mean ratings than the pre-workshop ( $M = 184.75$ ,  $SD = 16.75$ ) total mean ratings for the SESMQ-Proxy self-efficacy subscale  $t(3) = -3.277$ ,  $p = .047$ ;  $d = .884$ , and found to closely approximate Cohen's (1988) convention for a large effect ( $d = .80$ ). Thus, the CPs scored the post-workshop ratings significantly higher than the pre-workshop ratings on the SESMQ-Proxy self-efficacy subscale. However, there was no significant difference ( $p > .05$ ) in the total mean ratings between pre- and post-workshop assessments for the SESMQ-Proxy total scale and hearing ability subscale. The results indicate that the CPs did not rate the pre-workshop differently than the post-workshop ratings for the SESMQ-Proxy total scale and hearing ability subscale.

Table 6  
Paired T-Test Results for CPs' Pre/Post Workshop SESMQ-Proxy Ratings ( $N = 4$ ).

Assessment Measure	Pre-Workshop		Post-Workshop		T-value	P-value	Cohen's $d$ :
	Mean	SD	Mean	SD			
SESMQ-Proxy Total Scale	271.75	46.81	291.75	37.84	-2.877	.064	
SESMQ-Proxy Hearing Ability Subscale	105.00	31.03	107.00	28.67	-.483	.662	
SESMQ-Proxy Self-Efficacy Subscale	166.75	23.42	184.75	16.76	-3.277	.047*	.884

\* $p < .05$

**Pre-Workshop Self-Efficacy Ratings Between PHLs and CPs**

Table 7 presents the summary table of the independent t-tests for ratings between the SESMQ for PHLs ( $n = 4$ ) and the SESMQ-Proxy for CPs ( $n = 4$ ) in the pre-workshop assessment. An independent samples t-test was conducted to determine whether or not pre-workshop total mean ratings differed between the PHLs on the SESMQ total scale, hearing ability subscale, and self-efficacy subscale, and the CPs on the SESMQ-Proxy total scale, hearing ability subscale, and self-efficacy subscale. As shown, there was no significant difference ( $p > .05$ ) in the total mean ratings between PHLs and their CPs for the SESMQ/SESMQ-Proxy total scale, hearing ability subscale, and self-efficacy subscale prior to the IPGAR workshop. Thus, the PHLs did not score the ratings differently on the SESMQ total scale, hearing ability subscale, and the self-efficacy subscale than their CPs' ratings on the SESMQ-Proxy total scale, hearing ability subscale, and self-efficacy scale prior to the workshop.

Table 7  
Independent T-Test Results for PHLs on SESMQ and CP on SESMQ-Proxy in Pre-Workshop Assessment ( $N = 8$ )

Assessment Measure	PHL		CP		T-value	P-value	Cohen's <i>d</i> :
	Mean	SD	Mean	SD			
SESMQ/SESMQ-Proxy Total	201.75	45.53	271.75	46.81	2.144	.076	
SESMQ/SESMQ-Proxy Hearing Ability	105.00	31.03	105.00	31.03	1.301	.241	
SESMQ/SESMQ-Proxy Self-Efficacy	119.50	33.97	166.75	23.42	2.291	.062	

\* $p < .05$

**Post-Workshop Self-Efficacy Ratings Between PHLs and CPs**

Table 8 presents the summary table of the independent t-tests for ratings between the SESMQ for PHLs ( $n = 4$ ) and the SESMQ-Proxy for CPs ( $n = 4$ ) in the post-workshop assessment. An independent samples t-test was conducted to determine whether or not post-workshop total mean ratings differed between the PHLs on the SESMQ total scale, hearing ability subscale, and self-efficacy subscale, and the CPs on the SESMQ-Proxy total scale, hearing ability subscale, and self-efficacy subscale. The CPs scored significantly higher total mean ratings on the post-workshop SESMQ-Proxy total scale ( $M = 291.75$ ,  $SD = 37.84$ ) than did the PHLs on the SESMQ total scale ( $M = 219.50$ ,  $SD = 26.44$ ),  $t(3) = 3.131$ ,  $p = .024$ ;  $d = 2.216$ , and found to closely approximate Cohen's (1988) convention for a large effect ( $d = .80$ ). Thus, the PHLs significantly underrated their scores on the SESMQ total scale compared to their CPs' ratings of their partners on the SESMQ-Proxy total scale. The CPs also scored significantly higher total mean ratings on

the post-workshop SESMQ-Proxy self-efficacy subscale ( $M = 184.75$ ,  $SD = 16.76$ ) than did the PHLs on the SESMQ self-efficacy subscale ( $M = 134.75$ ,  $SD = 27.75$ ),  $t(3) = 3.084$ ,  $p = .028$ ;  $d = 2.181$ , and found to closely approximate Cohen's (1988) convention for a large effect ( $d = .80$ ). Therefore, the PHLs significantly underrated their scores on the post-workshop SESMQ self-efficacy subscale compared to their CPs' ratings of their partners on the SESMQ-Proxy self-efficacy subscale. There was, however, no significant difference ( $p > .05$ ) in the total mean ratings between PHLs on the post-workshop SESMQ hearing ability subscale and their CPs on the SESMQ-Proxy hearing ability subscale. Thus, the PHLs did not score the ratings differently on the post-workshop SESMQ hearing ability subscale than their CPs ratings on the SESMQ-Proxy hearing ability subscale.

Table 8

*Independent T-Test Results for PHLs on SESMQ and CP on SESMQ-Proxy in Post-Workshop Assessment (N = 8)*

Assessment Measure	PHL		CP		T-value	P-value	Cohen's d:
	Mean	SD	Mean	SD			
SESMQ/SESMQ-Proxy Total	219.50	26.44	291.75	37.84	3.131	.024*	2.216
SESMQ/SESMQ-Proxy Hearing Ability	84.75	11.98	107.00	28.67	2.291	.062	
SESMQ/SESMQ-Proxy Self-Efficacy	134.75	27.75	184.75	16.76	3.084	.028*	2.181

\* $p < .05$

### Qualitative Findings

Table 9 presents the three overarching themes that emerged from the data analysis across the 8 participants from the written comments on the IPGAR workshop evaluation measure. These themes illustrate both the benefits of the IPGAR workshop and the influences of self-efficacy framework as experienced by the study's participants.

Table 9

*Overarching Themes Across 4 Couples (4 PHLs and 4 CPs) from Collaborative Analysis*

Theme 1: Education, Skill Training, and Practice: Mastery Experience

Theme 2: Learning from Respected Role Models and Each Other: Vicarious Experience

Theme 3: Increased Communication Self-Efficacy as an Individual and as a Couple

### ***Theme 1: Education, Skill Training, and Practice: Mastery Experience***

Both PHLs and CPs described their workshop experiences as relating to one of the primary influences of self-efficacy: mastery experience. The clear transmission of relevant information was encapsulated by CP4's statement, "You two do an amazing job of explaining how we hear, what we lose when hearing diminishes and how important it is for both partners to stay fully 'in the game' so a good or even better relationship can continue." CP4 further commented that "Giving more ideas about how to improve communication between us (e.g., go to the same room; get his attention before speaking; try to simplify my statements/requests)" were helpful communication strategies that, in turn, required necessary behavioral changes. This participant further noted that, "I do speak in complex sentences and it is hard to stop that."

PHL2 captured the sentiment echoed by the participants in remarking that the workshop offered, "...presentation of practical ways to deal with hearing loss and improve communication."

PHL4 welcomed the "*information in the [workshop] manual*" that was provided to each participant at the start of the two-day workshop. The manual included the workshop's PowerPoint presentations and written materials for the participants to follow along as well as resources to be used after completion of the workshop.

PHL3 appreciated gaining a "clearer understanding of mechanical and neural processes related to hearing" as well as the "...psychological effects of hearing loss."

CP3 stated that she gained a "better understanding of hearing loss/impairment," while CP2 agreed that, "I learned more about how the ear works with a hearing loss."

Of note, hearing assistive technology systems (HATS) as a resource to augment the use of their partners' hearing aids garnered many comments. CP4 described the availability of HATS today as "amazing technology."

CP1 emphasized the importance of "having my husband try using the loop system and see how much clearer communication could be in a group situation." She continued that, "Before he didn't realize what it would do for him [before the workshop] and would not press the audiologist to move forward with the concept. I think he might want to explore one of these systems that would meet his needs. He now understands that there are different systems and would have various degrees of pluses and minuses for him."

PHL4 summarized his take-aways from the IPGAR workshop as, "Understanding hearing loss," "Knowing there are strategies to assist in better hearing," and "Learning about resources available to assist PHLs."

### ***Theme 2: Learning from Respected Role Models and Each Other: Vicarious Experience***

Vicarious learning, another influence of self-efficacy, was actively employed throughout the workshop. Role-modeling appeared to be a particularly useful technique to view various communication strategies. From the participants' viewpoint, a distinct advantage of the

workshop was that the two researchers were also a PHL and CP team like them, leading CP4 to remark on “the relationship between you two and your ease at modeling behavior.” According to PHL3, the usefulness of the workshop relied on the facilitative skills and qualifications of the researchers, in which he stated, “[Researchers] are immensely knowledgeable and effective in their presentations both individually and together.”

CP1 concurred, “The two of you were great role models” and “...have a great way of presenting the workshop and building rapport with each of us. You helped to build rapport between couples.”

Opportunities to practice new skills and cognitively rehearse the various workshop’s activities in group discussions were highly valued by the participants. Comments from both PHLs and CPs included, “being involved with three other couples and experiencing the dynamics of their communication difficulties” (PHL1); “loved meeting other people/couples with and without a hearing loss” (CP1); “I enjoyed brief breakout sessions with 4 to 6 people after presentations of the lectures to discuss what was just presented” (PHL3); and “...sharing with others” while “recogniz[ing that] I will likely be in the same situation someday” (CP4). Challenges expressed by two of the CPs concerned the need to “be patient and stay calmer” (CP4) and desiring more “time to practice strategies so they had [an] opportunity to be engrained” (CP1).

### ***Theme 3: Increased Communication Self-Efficacy as an Individual and as a Couple.***

As a result of the two-day workshop, the participants stated that their communication self-efficacy increased both as an individual and as a couple. PHL4 remarked that because of the workshop, he became “accepting that it is okay to be assertive in addressing my need to communicate well and advocate for myself and others experiencing hearing loss.” Similarly, PHL1 noted that he was, “becoming more aware of various skills I can use to increase my ability to hear as well as becoming more assertive in large group situations where hearing can be difficult with strategies (e.g., asking for listening devices, positioning myself in situations to enhance my hearing).”

PHL3 reported, “I felt better (self-confident) about myself after knowing about hearing loss, its impact on my/our lives and tools to aid in better communication.” CP2 stated that, “I learned a lot of good information and useful strategies to use in the future and help the communication between [PHL2] and myself.” CP1 vowed that “the skills I will work on will be to use clear speech and talk to [PHL1] in the same room looking at him. Also, when we go out, look for quiet places to sit and a more well-lit environment.”

CP2 appreciated the value of the communication strategies while recognizing the need to change behaviors, “The strategies that were suggested for us will be and are helpful in our relationship. It is getting us used to using them that will be the challenge.” These statements point to her self-efficacy in taking charge of improving communication with her spouse.

Feeling empowered to effect change was further articulated by CP3 in her comment acknowledging that she learned, “how to position myself to aid my spouse in hearing me better” and “recognizing [that] we can better advocate for accommodations with hearing loss.”

The four couples stated that improving communication self-efficacy was not only an individual endeavor, but also a team effort that involves both parties. CP1 observed that, “this strategy was not in my mind prior to the workshop – work as a team in all situations to improve communication between us and in social situations.” Furthermore, she stated that it was important to empower her spouse by being “reminded not to set up better communication systems, but to let him select good communication situations for himself...If he needs help, remind him of strategies he could use to improve his ability to communicate/hear, but let him choose what he uses.”

PHL3’s disclosed an epiphany that, “my hearing loss impacts family and friends – not just me.” His newfound insight reflected his awareness that hearing loss not only isolates the person who has the hearing loss, hearing loss also separates family and friends from the PHL as well.

### **Discussion**

The findings from the quantitative and qualitative data sets contribute to a more complete understanding of the impact of communication self-efficacy training for adults with hearing loss and their spouses following a two-day IPGAR workshop.

#### **Increased Communication Self-Efficacy as an Individual and as a Couple**

The IPGAR workshop evaluation instrument was designed to measure the workshop’s intervention outcomes in communication abilities for PHLs and CPs both individually and as a couple. The results indicated that the majority of PHLs (75%) reported improvements in all 15 (100%) communication abilities assessed, which included meeting their shared communication goals and confidently using their communication strategies with their CP. These findings are consistent with the majority of CPs (75%) who reported improvements in 13 of the 15 (87%) communication skills assessed, which also included meeting their shared communication goals and confidently using their communication strategies with their partner. All four PHLs (100%) indicated benefit from attending the workshop with improved abilities in their use of an assertive communication style; instructional strategies to influence their CP’s speaking behavior; communication repair skills to tailor their CP’s messages; communication anticipatory strategies for conversational content and potential listening difficulties; constructive strategies to structure the listening environment for optimal understanding; communication adaptive strategies to relax and manage their emotions and negative behaviors in difficult listening situations; and to communicate with their CP in background noise. All four CPs (100%) demonstrated improved abilities to understand their partner’s hearing loss; support their partner’s communication needs; face their partner, maintain eye contact, and speak within close proximity in the same room; use an assertive communication style with their partner; use instructional strategies to influence their partner’s speaking behavior; use constructive strategies to help structure the listening environment for their partner’s optimal understanding; empathize to support their partner’s ability to speechread them; and communicate with their partner in background noise.

These findings are supported by the PHLs’ comments pointing to their enhanced communication self-efficacy through awareness of the various required skills to feel empowered, advocate, and

take charge of improving communication with their spouses as well as in large group settings where communicating with others can be challenging. Moreover, the CPs' comments emphasized the value of the learned communication strategies as advantageous to their relationship. One epiphany expressed by a CP was the opportunity to empower their partner and work together as a team to manage difficult communication situations and improve communication with others. These findings are consistent with Smith and West (2006), who stated that audiologic rehabilitation interventions that incorporate self-efficacy-enhancing strategies are likely to produce better outcomes. Gregory (2011) emphasized that a solid sense of self-efficacy fosters utilization of assertive conversational repair strategies, requests to their communication partner to use clear speech, and use of visual cues to improve communication. Thus, the results of this study are encouraging and suggest that both adults with hearing loss and their spouses developed a competent and confident communication management skills set.

The SESMQ was designed to evaluate the effectiveness of a group audiologic rehabilitation program on perceived self-efficacy for managing communication in 20 everyday listening environments for adults with acquired hearing loss (Jennings et al., 2014). The SESMQ was modified as a proxy for this study to assess the CP's perception of their spouse's perceived self-efficacy for managing communication in the same 20 listening situations. The results revealed that there was no difference between PHLs' and CPs' ratings on the three scales/subscales (i.e., total, hearing ability, self-efficacy) of the pre-workshop SESMQ/SESMQ-Proxy. Following the IPGAR workshop, however, the CPs rated the SESMQ-Proxy total scale and self-efficacy subscale significantly higher than the PHLs did on the SESMQ total scale and self-efficacy subscale. Moreover, a significant improvement was found between the pre- and post-workshop ratings for CPs on the SESMQ-Proxy self-efficacy subscale. These findings suggest that the CPs viewed their spouses as more confident in managing communication situations than did their partners upon completion of the workshop.

Although the PHLs reported that they improved in their confidence to use communication strategies with their partner after completing the workshop, no difference was found between the pre- and post-workshop ratings for PHLs on the three scales/subscales (i.e., total, hearing ability, self-efficacy) of the SESMQ as well as the CPs' pre- and post-workshop ratings on the SESMQ-Proxy total scale and hearing abilities subscale. Since the SESMQ hearing abilities subscale indicates *how well* adults with acquired hearing loss can hear in various communication situations (Jennings et al., 2014), both PHLs' and CPs' ratings seem to agree that adults with hearing loss face ongoing demanding communication situations. Although the CPs' viewed their spouses' confidence as improved when witnessing the PHLs employ communication strategies and managing challenging situations, the PHLs' sense of their own communication self-efficacy may be overshadowed by the endless and wearying task of incessantly needing to manage daily communication situations.

The participants were highly committed as couples to participate in the two-day IPGAR workshop to improve their hearing loss-related communication challenges. Successful management of chronic conditions requires individuals to be knowledgeable about their condition and decisions related to treatment, perform activities needed to manage their condition, and apply skills to support psychosocial functioning (Clark, Becker, Janz, Lorig, Rakowski, & Anderson, 1991). During the IPGAR workshop, each couple provided social support to each

other as well as to the other participating couples. Gallant (2003) found that this support had a positive relationship to self-management of behaviors.

### **Skill Training, Practice, and Learning from Respected Role Models and Each Other**

The IPGAR workshop connected self-efficacy training with a combination of intervention strategies targeted for PHLs and CPs including informational lectures, problem-identification and problem-solving psychosocial exercises, assertiveness training exercises, communication strategies exercises, speech perception training, and adaptive/stress reduction exercises. After introducing each interactive activity via lectures and captioned videos, the researchers modeled intervention strategies in various hearing loss-related communication scenarios. Next, couples practiced together in small groups with the researchers providing verbal persuasion in the form of feedback to improve their communication skills as needed. Strategies from the self-efficacy intervention model adapted from Delich and Roberts (2017) were employed utilizing the four sources of influences. Comments from the participants affirmed the important benefits of several influences of self-efficacy including role-modeling, practicing new skills, providing regularly scheduled breaks, constructive feedback, and cognitively rehearsing various workshop activities during interactive group discussions.

The workshop's intervention strategies were consistent with those recommended by Preminger and Nesbitt (2014) suggesting that group aural rehabilitation should include a combination of activities that emphasize problem solving and managing emotional responses to communication challenges. Those with higher self-efficacy actively attempt to participate and work to make the essential adjustments of their hearing aids and/or the communication environment (Smith & West, 2006).

### **Relationship Maintenance**

PHLs and CPs made necessary adjustments in their environments to ensure that efficacious communication continued as a high priority in their relationships. This effort may be related to relationship maintenance. Relationship maintenance is a term used to describe behavioral interactions and patterns that facilitate the preservation of valued relationships through their enhancement, or through their repair and reestablishment (Stafford, 1994; Stafford & Canary, 2006). Canary and Stafford (1992) identified five types of relationship maintenance behaviors, which include positivity, openness, assurances, networks, and sharing tasks. Maintenance behaviors are considered both routine and strategic (Canary & Stafford, 1994; Dainton & Stafford, 1993). Routine maintenance behaviors are unintentional, everyday exchanges that implicitly maintain relationships. In contrast, strategic maintenance behaviors are performed with the explicit goal of maintaining a relationship (Dainton & Stafford, 1993). Further research endeavors can investigate relationship maintenance behaviors as a possible contributing factor in successful group aural rehabilitation utilizing the self-efficacy framework for adults with hearing loss and their partners/spouses.

## Limitations

There are several limitations to this research. First, the sample size was relatively small for both PHLs and their CPs in this study. As such, there may be a reduced statistical power to find significant differences. However, despite the small sample sizes, statistically significant differences were found in the pre- and post-workshop assessments on the SESMQ-Proxy for the self-efficacy subscale with a large effect for CPs. Significant differences were found in the post-workshop assessment for CPs on the SESMQ-Proxy for the total scale with a large effect size and the self-efficacy subscale with a large effect size. In contrast, there was no difference in the pre- and post-workshop assessments on the SESMQ for the total scale, hearing difficulty subscale, and self-efficacy subscale with PHLs. Moreover, there was no difference in the pre-workshop assessments on the SESMQ for the total scale, hearing difficulty subscale, and self-efficacy subscale with PHLs or the SESMQ-Proxy for the total scale, hearing difficulty subscale, and self-efficacy subscale with CPs. A larger number of participants would be necessary to obtain a large effect size and generalizability to a greater population of adults with hearing loss and their communication partners. Thus, future studies could draw from a larger sample to determine if self-efficacy differs between PHLs and their CPs within their relationships. Of note, the recommended group size for a group aural rehabilitation program is approximately eight to ten participants (Tye-Murray, 2015) to allow for diverse experiences, ideas, and suggestions to be represented; ensure all participants have an opportunity to contribute; and create an optimal listening environment.

Second, the purposive sample group's educational attainment placed the study's participants above average of the United States population (Ryan & Bauman, 2016). In their 2015 portrait of educational attainment in the United States, Ryan and Bauman reported that 88% of adults achieved at least a high school diploma, 59% had completed some college, 33% had a bachelor's degree or more education, and 12% reported an advanced degree such as a master's, professional, or doctorate degree. Moreover, they reported that educational achievement was found to vary by age, sex, race and Hispanic origin, nativity, and disability status. A larger number of participants that are equally distributed across educational attainment levels should be considered for future studies.

Third, in the current study, all four adults with hearing loss were male and all of their communication partners were female. Future research could draw from a larger sample to determine if self-efficacy differs between females as PHLs and males as CPs as well as between same-sex couples as PHLs and CPs within their relationships.

## Conclusion

The aim of this study was to determine the impact of self-efficacy training for adults with hearing loss and their communication partners following a two-day IPGAR workshop. The interprofessional collaborative team successfully applied the four sources of influence and related strategies within the psychoeducational self-efficacy intervention framework as a model for service delivery for PHLs and CPs in the group aural rehabilitation process. Both PHLs and CPs reported improved communication abilities in the majority of the skills assessed via the post-IPGAR workshop evaluation measure, resulting in a competent and confident

communication skill set for both parties. Although there was no difference in ratings between the pre- and post-workshop hearing abilities subscale for both PHLs and CPs, the findings indicated that the CPs viewed their spouses as more confident than their partners did in managing communication situations upon completion of the workshop. Because PHLs continuously face challenging and demanding communication situations even as they employ communication strategies and skills, they may view themselves as less self-efficacious compared to their hearing partners.

When applying the self-efficacy theory in aural rehabilitation, clinicians can gather information from questionnaires to help identify communication skills where persons with hearing loss may exhibit low self-efficacy (Smith, 2014). Practitioners, whether individually or as an interprofessional collaborative team, can then draw upon the four sources of influence and use specific strategies to help enhance their clients' self-efficacy for the communication skills in which they are less confident in executing. Since the IPGAR workshop focused on strengthening the communication interactions between PHLs and CPs as a couple, investigating relationship maintenance behaviors as a possible contributing factor in successful group aural rehabilitation for adults with hearing loss and their partners/spouses can be another area for future research.

## References

- Bandura, A. (1977). *Social learning theory*. General Learning Press.
- Bandura, A. (1986). *Social foundations of thought and action: A social cognitive theory*. Prentice Hall.
- Bandura, A. (1997). *Self-efficacy: The exercise of control*. W. H. Freeman.
- Canary, D. J., & Stafford, L. (1992). Relational maintenance strategies and equity in marriage. *Communication Monographs*, 59, 243–267.
- Clark, N. M., Becker, M. B., Janz, N. K., Lorig, K., Rakowski, W., & Anderson, L. (1991). Self-management of chronic disease by older adults: A review and questions for research. *Journal of Aging and Health*, 3(1), 3-27.
- Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (2nd ed.). Lawrence Erlbaum Associates.
- Dainton, M., & Stafford, L. (1993). Routine maintenance behaviors: A comparison of relationship type, partner similarity and sex differences. *Journal of Social and Personal Relationships*, 10, 255-271.
- Delich, N. A., & Roberts, S. D. (2017). Empowering students through the application of self-efficacy theory in school social work: An intervention model. *International Journal of School Social Work*, 1(4), 1-19.
- Delich, N. A., & Roberts, S. D. (July, 2018). *Self-efficacy training on quality of life for adults with hearing loss and their communication partners*. Poster session presented at the Joint World Conference on Social Work, Education and Social Development Conference, Dublin, Ireland.
- Delich, N. A., & Roberts, S. D. (2019). An interprofessional collaborative approach to the development of a content valid interview questionnaire for hard of hearing adults and their communication partners. *Journal of the American Deafness and Rehabilitation Association*, 53(1), 3-21.
- Folstein, M. F., Folstein, S. E., & McHugh, P. R. (1975). “Mini-mental state”: A practical method for grading the cognitive state of patients for the clinician. *Journal of Psychiatric Research*, 12, 189–198.
- Gallant, M. (2003). The influence of social support on chronic illness self-management: A review and directions for research. *Health Education and Behavior*, 30, 170-191.

- Green, B. N., & Johnson, C. D. (2015). Interprofessional collaboration in research, education, and clinical practice: Working together for a better future. *Journal of Chiropractic Education, 29*(1), 1-10.
- Gregory, M. (2011). Self-efficacy and successful hearing rehabilitation. *Hearing Review, 18*(8), 28-32.
- Hardick, E. J., Oyer, H. J., & Irion, P. E. (1970). Lipreading performance as related to measurements of vision. *Journal of Speech and Hearing Research, 13*, 92–100.
- Hogan, A. (2001). *Hearing rehabilitation for deafened adults: A psychosocial approach*. Whurr.
- Howell, D. C. (2002). *Statistical methods for psychology* (5th ed.). Duxbury.
- Jennings, M. B., Cheesman, M. F., & Laplante-Lévesque, A. (2014). Psychometric properties of the Self-Efficacy for Situational Communication Management Questionnaire (SESMQ). *Ear and Hearing, 35*(2), 221-229.
- Kaplan, H., Bally, S., & Garretson, C. (1985). *Speechreading: A way to improve understanding*. Gallaudet University Press.
- Maddux, J. E., & Gosselin, J. T. (2003). Self-efficacy. In M. R. Leary & J. P. Tangney (Eds.), *Handbook of self and identity* (pp. 218-238). Guilford.
- Maddux, J. E., & Lewis, J. (1995). Self-efficacy and adjustment: Basic principles and issues. In J. E. Maddux (Ed.), *Self-efficacy, adaptation, adjustment: Theory, research, and application* (pp. 37-68). Plenum Press.
- Preminger, J. E. (2003). Should significant others be encouraged to join adult group audiologic rehabilitation classes? *Journal of the American Academy of Audiology, 14*, 545–555.
- Preminger, J. (2011). Group audiologic rehabilitation for adults and their communication partners. *The ASHA Leader, 16*(8) 14-17.
- Preminger, J., & Nesbitt, N. (2014). Group audiologic rehabilitation for adults: Justification and implementation. In J. J. Montano & J. B. Spitzer (Eds.), *Adult audiologic rehabilitation* (2<sup>nd</sup> ed., pp. 307–328). Plural Publishing.
- Preminger, J., and Lind, C. (2012). Assisting communication partners in the setting of treatment goals: The development of the Goal Sharing for Partners. *Seminars in Hearing, 33*(1), 53-64.
- Rodin, J. (1986). Aging and health: Effects of the sense of control. *Science, 233*, 1271–1276.

- Roberts, S. D., & Delich, N. A. (2020). Isolation to communication: Connecting adults with hearing loss and their communication partners. *Journal of the American Deafness and Rehabilitation Association*, 53(2), 88-106.
- Roberts, S. D., & Delich, N. A. (March, 2019). *Application of self-efficacy training in group audiologic rehabilitation: An interprofessional collaborative model*. Poster session presented at the California Speech-Language-Hearing Association Annual Conference, Pasadena, CA.
- Ryan, C. L., & Bauman, K. (2016). *Educational attainment in the United States: 2015 population characteristics*.  
<https://www.census.gov/content/dam/Census/library/publications/2016/demo/p20-578.pdf>
- Stafford, L. (1994). Tracing the threads of spider webs. In D. J. Canary, & L. Stafford (Eds.), *Communication and relational maintenance* (pp. 297–306). Academic Press.
- Stafford, L., & Canary, D. J. (2006). Equity and interdependence as predictors of relational maintenance strategies. *Journal of Family Communication*, 6, 227-254.
- Smith, S. L. (2014). Self-efficacy theory in audiologic rehabilitation. In J. J. Montano & J. B. Spitzer (Eds.), *Adult audiologic rehabilitation* (2<sup>nd</sup> ed., pp. 219–232). Plural Publishing.
- Smith, S. L., & Fagelson, M. (2011). Development of the self-efficacy for tinnitus management questionnaire. *Journal of the American Academy of Audiology*, 22(7), 424-440.
- Smith, S. L., Pichora-Fuller, M. K., Watts, K. L., & La More, C. (2011). Development of the Listening Self-Efficacy Questionnaire. *International Journal of Audiology*, 50, 417-425.
- Smith, S. L., & West, R. L. (2006). The application of self-efficacy principles to audiologic rehabilitation: A tutorial. *American Journal of Audiology*, 15, 46–56.
- Tabachnick, B. G., & Fidell, L. S. (2012). *Using multivariate statistics* (6<sup>th</sup> ed.). Allyn & Bacon.
- Tye-Murray, N. (1997). *Communication training for older teenagers and adults*. Pro-Ed.
- Tye-Murray, N. (2015). *Foundations of aural rehabilitation: Children, adults, and their family members* (4th ed.). Delmar Cengage Learning.
- Weinstein, B. (2014). Audiologic rehabilitation with older adults: Research needs. In J. J. Montano & J. B. Spitzer (Eds.), *Adult audiologic rehabilitation* (2<sup>nd</sup> ed., pp. 535–551). Plural Publishing.
- West, R. L., & Smith, S. L. (2007). Development of a hearing aid self-efficacy questionnaire. *International Journal of Audiology*, 46, 759–771.