



The Effectiveness of Role-Playing Training on Emotional Self-disclosure and Sense of Coherence in Students with Hearing Loss

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Abstract

Background: Hearing loss can lead to various complications, including difficulties in language and speech development, as well as cognitive, psychological, social, occupational, educational, and learning impairments.

Objectives: This study aimed to determine the effectiveness of role-playing training on emotional self-disclosure (ESDS) and sense of coherence in students with hearing loss.

Methods: The study was a quasi-experimental design with a pretest-posttest approach and a control group. The statistical population included all students with hearing loss in the first and second high schools for the exceptional in Ahvaz City in 2023. A sample of 30 individuals was selected using the convenience sampling method and randomly assigned to either the experimental or control group (15 participants each). Students completed the Emotional Self-disclosure Scale and Sense of Coherence Questionnaire in both pretest and posttest phases. The experimental group received role-playing training in ten 90-minute sessions. Data were analyzed using analysis of covariance.

Results: Role-playing training had a significant positive effect on both emotional self-disclosure and sense of coherence in students with hearing loss ($P = 0.001$). The post-test results showed that the experimental group scored significantly higher than the control group in emotional self-disclosure (147.73 ± 15.11 vs. 102.60 ± 16.18) and sense of coherence (97.40 ± 13.86 vs. 67.80 ± 8.14) ($P = 0.001$).

Conclusions: Role-playing training can be a valuable intervention for enhancing the emotional well-being of students with hearing loss. This study contributes to the growing body of knowledge on interventions aimed at improving emotional well-being in students with hearing loss. Role-playing training emerges as a promising approach with the potential for implementation in educational and therapeutic settings.

Keywords: Role-playing, Emotions, Self-disclosure, Sense of Coherence, Deaf Students

1. Background

The education of deaf and hard-of-hearing students has undergone a paradigm shift, with a growing emphasis not only on improving academic achievement but also on fostering emotional well-being and a sense of coherence (1). This holistic approach acknowledges the significant challenges students with hearing loss face due to cultural and linguistic barriers (2). Specialists working with individuals with hearing loss must be mindful of these differences and adapt their assessment and intervention strategies accordingly. Research suggests that individuals with hearing loss

experience higher rates of mental health concerns compared to the general population, highlighting the critical need to address emotional well-being (3). Furthermore, a strong sense of coherence, which refers to an individual's perception of their life as meaningful, manageable, and understandable, is crucial for navigating the challenges associated with hearing loss. These emotional and cognitive factors significantly affect deaf and hard-of-hearing students' performance across various life domains, including academic achievement, social interactions, and overall well-being (4, 5).

Hearing loss demonstrably impacts various aspects of hard-of-hearing students' lives, including their emotional self-disclosure (ESDS) (6). Emotional self-disclosure, defined as the process of revealing personal information through self-disclosing messages (7), serves as a critical mechanism for emotional regulation and well-being through the expression of emotions. Limited language abilities due to hearing loss present significant challenges for hard-of-hearing individuals. These challenges include difficulties in developing effective communication strategies, understanding the thoughts and feelings of others, and regulating and expressing their emotions, particularly in seeking attention and affection (8). These limitations in language abilities not only predispose children to depression, anxiety, anger, and negative emotions (9) but also hinder their emotional self-disclosure. Emotional regulation skills refer to an individual's ability to recognize, express, and control their emotions in various situations (10). Emotions are an integral part of human life, and it is difficult to imagine a life without them. The characteristics and changes of emotions, as well as emotional communication, understanding, and interpretation of others' emotions, play a crucial role in personality development and organization, moral development, social relationships, identity formation, and self-concept (11). Emotional regulation skills significantly impact various aspects of an individual's life, including interpersonal interactions, mental health, and physical well-being (12). According to Harvey and Boynton (13), emotional self-disclosure can lead to increased tension, regression, and suppression as defense mechanisms, as well as a tendency to view others as a threat. They (13) highlighted the positive effect of emotional self-disclosure on feelings of guilt, shame, and other issues that hard-of-hearing children often face.

On the other hand, a notable weakness observed in individuals with hearing loss is their lack of a sense of coherence. Sense of coherence was introduced by Antonovsky (14), who defined it as a personal orientation to life and the belief in having sufficient resources to cope with stressful situations, including work-related stress. It consists of three components: Comprehensibility, manageability, and meaningfulness. Comprehensibility refers to the feeling of certainty that nothing negative or surprising has happened and that life can proceed as expected and reasonably (15). The manageability component reflects the feeling of having the resources needed to solve problems and cope with stressors, and finally, meaningfulness refers to the extent to which an individual finds life valuable and

experiences this feeling not only cognitively but also emotionally (16, 17).

In this context, role-playing is a skill-based educational program that helps students with hearing loss become familiar with new social environments and learn the necessary skills to deal with various issues appropriately in a fun and stress-free environment by placing them in situations they will encounter in real life (18). In its simplest form, role-playing involves addressing issues practically. In this process, the problem is identified, activities are carried out, and both practical and mental activities are discussed. To make role-playing practical, some students play the roles while others observe the situation and try to gain a proper understanding of it (19). The role-playing process reveals an appropriate example of human behavior, serving as a tool for learners to understand their own emotions, benefit from insights gained about attitudes, values, and perceptions, expand their attitudes and problem-solving skills, and examine the subject matter from different perspectives. In any case, role-playing provides learners with an experiential learning situation (20). In this regard, Afshari (19) showed that the role-playing training method is effective in improving academic self-efficacy, social adaptation, and academic motivation in students with learning disabilities.

In general, hearing loss is associated with various impairments in emotional, social, and cognitive development. While existing evidence demonstrates a significant impact on social, emotional, and cognitive functioning, a critical research gap exists. Studies have shown that students with hearing loss experience behavioral and emotional problems at nearly double the rate of their hearing peers (21). Despite the undeniable importance and documented effectiveness of role-playing training in promoting social skills development, emotional regulation, and overall well-being in various populations, no research has investigated its impact on the specific psychological challenges faced by students with hearing loss.

2. Objectives

Therefore, the present study aimed to address this gap by determining the effectiveness of role-playing training on emotional self-disclosure and sense of coherence in students with hearing loss.

3. Methods

The present study was a quasi-experimental study with a pre-test-post-test design and a control group. The

statistical population included all students with hearing loss in junior and senior high schools for exceptional students in Ahvaz City in 2023. The sample size was 30 students with hearing loss, aged 13 to 18 years, selected using the convenience sampling method. With their consent and approval, they were randomly assigned to two groups: Fifteen in the experimental group and 15 in the control group, after matching for age and hearing impairment. The sample size calculation was conducted using GPower software, with a target sample size of 15 participants per group to achieve an effect size of 1.24, a significance level of $\alpha = 0.05$, and a statistical power of 0.95.

The inclusion criteria were: Deaf high school students, not receiving any other intervention during the study, and having the motivation to participate in the training sessions. The exclusion criteria were: Having mental disorders, receiving other interventions during the study, and a lack of motivation to continue the sessions. After a pre-test was administered to all participants, role-playing training was implemented for the experimental group, while the control group received no treatment. Upon completion of the intervention, a post-test was administered to both groups. To comply with ethical considerations, the role-playing training was later provided in a condensed form for the control group.

3.1. Instruments

3.1.1. Emotional Self-disclosure Scale

The ESDS, developed by Snell et al. (22), was used to assess the extent to which individuals are willing to disclose their emotions. The scale consists of 40 items rated on a 5-point Likert scale, with higher scores indicating greater emotional self-disclosure. The ESDS has demonstrated strong internal consistency, with a Cronbach's alpha coefficient of 0.95 (23). Varmaghani et al. (23) further supported the scale's content validity, reporting a Content Validity Index (CVI) of 0.94 and a content validity ratio (CVR) of 0.92. In this study, Cronbach's alpha was used to determine the reliability of this instrument, which was 0.82 for emotional self-disclosure.

3.1.2. Sense of Coherence Questionnaire

The short form of the Sense of Coherence Questionnaire was developed by Antonovsky (14). This questionnaire consists of 29 items, each rated on a 5-point Likert scale, and includes three subscales: Comprehensibility, manageability, and meaningfulness.

The minimum and maximum scores a participant can obtain on this questionnaire range from 29 to 145. Building on prior research, Alipour and Sharif (24) reported a Cronbach's alpha of 0.96 for the Sense of Coherence Questionnaire, indicating strong internal consistency. They also established the questionnaire's content validity with a CVI of 0.92 and a CVR of 0.90 (24). In this study, Cronbach's alpha was used to determine the reliability of this instrument, which was 0.87.

3.2. Intervention

3.2.1. Role-Playing Intervention

Participants in the experimental group underwent a role-playing intervention delivered in ten 90-minute sessions. These sessions were conducted by the first author, who had completed specialized training. A detailed description of the intervention content is provided in Table 1.

3.3. Statistical Analysis

Data normality was verified using the Kolmogorov-Smirnov test. Levene's test ensured the homogeneity of variances, a key assumption for subsequent analyses. Paired-sample *t*-tests were conducted within each group to compare pre-test and post-test means. To assess group differences in post-test scores while controlling for pre-test scores as a covariate, an analysis of covariance (ANCOVA) was performed using SPSS-27 software.

4. Results

The sample consisted of 30 participants (16 females and 14 males). The average age of students with hearing loss in the role-playing training group was 16.49 years (± 2.50), while the average age of students in the control group was 16.90 years (± 2.14). The grade distribution was as follows: Ten students in the ninth grade, 8 in the tenth grade, 4 in the eleventh grade, and 8 in the twelfth grade. A comparison of demographic variables between the experimental and control groups revealed no significant differences between the two groups. Descriptive statistics (mean and standard deviation) and normality testing (Kolmogorov-Smirnov) for research variables at the pre-test and post-test stages are presented in Table 2.

Table 2 presents the pre-test and post-test scores for emotional self-disclosure and sense of coherence in both the experimental and control groups. Notably, there were no statistically significant differences between the groups at the pre-test stage (emotional self-

Table 1. A Summary of Role-Playing Training Sessions

Sessions	Content
1	Introduction and Group Formation: This session established group norms, clarified session details (number, frequency, duration), and facilitated introductions among participants.
2	Nonverbal Communication Skills: Participants explored nonverbal cues like body language and facial expressions, practicing effective communication through role-playing scenarios involving whispering, touching (handshakes, shoulder pats, etc.), and appropriate physical contact.
3	Empathy and Self-Expression: This session focused on building empathy and assertive communication. Role-playing activities centered on expressing emotions effectively, understanding others' perspectives, and practicing appropriate touching gestures.
4	Social Interactions: Participants honed their social skills through role-playing activities that involved creating a positive first impression (smiling, complimenting), initiating friendships (inviting others), expressing feelings to friends (congratulations, condolences), and introducing others.
5	Self-Advocacy and Assertiveness: This session equipped participants with self-identification and assertive communication skills. Role-playing activities focused on making requests, setting boundaries, recognizing personal rights, and effectively dealing with difficult situations.
6	Communication Styles: Participants learned to differentiate between assertive, aggressive, and passive communication styles. Role-playing scenarios helped them identify triggering situations and develop strategies for more productive communication.
7	Receiving Criticism: This session addressed coping mechanisms for receiving criticism. Participants practiced maintaining composure, avoiding defensiveness, and acknowledging mistakes in role-playing scenarios.
8	Effective Criticism and Anger Management: Participants practiced offering constructive criticism and managing anger effectively through role-playing activities.
9	Expressing Positive Emotions and Managing Humiliation: This session focused on expressing positive emotions and addressing self-defeating beliefs. Role-playing activities addressed identifying triggers for humiliation and strategies for dealing with both verbal and nonverbal negativity.
10	Summary and Evaluation: The final session reviewed key topics and provided an opportunity for participants to share their experiences and assess the intervention's effectiveness.

Table 2. Mean, SD, and Kolmogorov-Smirnov Test for Emotional Self-disclosure and Sense of Coherence^a

Groups and Variables	Pre-test	Post-test	P (within-Group)	Kolmogorov-Smirnov Test	
				Z	P
Emotional self-disclosure					
Experimental	94.80 ± 17.47	147.73 ± 15.11	0.001	0.23	0.200
Control	102.80 ± 11.60	102.60 ± 16.18	0.969	0.19	0.241
P (between-group)	0.151	0.001	-	-	-
Sense of coherence					
Experimental	69.07 ± 11.52	97.40 ± 13.86	0.001	0.15	0.200
Control	70.20 ± 15.05	67.80 ± 8.14	0.591	0.09	0.257
P (between-group)	0.819	0.001	-	-	-

^a Values are expressed as mean ± SD.

disclosure: Experimental group - 94.80 ± 17.47, control group - 102.80 ± 11.60; sense of coherence: Experimental group - 69.07 ± 11.52, control group - 70.20 ± 15.05). This equivalence at baseline enhances the validity of the subsequent analyses of the post-test scores. The post-test results revealed a divergence between the groups. In emotional self-disclosure, the experimental group showed a substantial increase (147.73 ± 15.11), while the control group exhibited minimal change (102.60 ± 16.18). A similar trend was observed for the sense of coherence, with the experimental group achieving a significantly higher post-test score (97.40 ± 13.86) compared to the control group, which showed a slight decrease (67.80 ± 8.14). These findings suggest that the intervention in the experimental group effectively promoted improvements in both emotional self-disclosure and sense of coherence compared to the control group.

Before conducting the analysis of covariance, the underlying assumptions of the test were examined. The Kolmogorov-Smirnov test confirmed the normality of data distribution, a key prerequisite for the analysis of covariance. The results of Levene's test indicated that the assumption of homogeneity of variances was met for both emotional self-disclosure ($F = 0.027$, $P = 0.871$) and sense of coherence ($F = 0.197$, $P = 0.660$). Subsequently, analysis of covariance was employed to compare the experimental and control groups based on post-test scores, while controlling for the effect of pre-test scores (Table 3). This analysis aimed to determine the impact of the role-playing intervention on emotional self-disclosure and sense of coherence in students with hearing loss.

As presented in Table 3, the calculated effect sizes revealed that 92.0% of the total variance in emotional self-disclosure and 97.0% of the variance in the sense of

Table 3. Results of Analysis of Covariance on Post-test Scores of Emotional Self-disclosure, Positive Emotion, and Sense of Coherence

Variables	SS	df	MS	F	P	η^2
Emotional self-disclosure	2929.18	1	2929.18	303.94	0.001	0.92
Sense of coherence	10295.79	1	10295.79	949.21	0.001	0.97

coherence between the experimental and control groups was attributed to the effect of role-playing training. A statistically significant difference was observed between the mean pre-test and post-test scores for emotional self-disclosure after controlling for the effect of the pre-test ($F = 303.94$, $P < 0.001$, $\text{Eta} = 0.92$). This finding suggests that role-playing training was effective in enhancing emotional self-disclosure among students with hearing loss. Similarly, a statistically significant difference emerged between the mean pre-test and post-test scores for sense of coherence after controlling for the effect of the pre-test ($F = 949.21$, $P < 0.001$, $\text{Eta} = 0.97$). This indicates that role-playing training was effective in improving the sense of coherence among students with hearing loss (Table 3).

5. Discussion

The present study aimed to investigate the effectiveness of role-playing training on emotional self-disclosure and sense of coherence in students with hearing loss. The findings revealed a significant positive impact of role-playing training on both emotional self-disclosure and sense of coherence. The first finding indicated that role-playing training effectively enhanced emotional self-disclosure among students with hearing loss. This finding aligns with Afshari's (19) prior research, which demonstrated that the role-playing method can significantly enhance students' academic motivation and social adjustment.

To explain this finding, one can refer to the model proposed by Castedo et al. (25), which suggests that assertiveness is a crucial component of social competence. Students with hearing loss may struggle with emotional self-disclosure due to a lack of assertiveness, often prioritizing the rights of others over their own (26). Role-playing training can address this issue by empowering students with hearing loss to assert their rights and providing them with opportunities to practice defending their rights in various scenarios. Through role-playing activities, students can acquire the necessary skills and expand their behavioral repertoire to respond adaptively in different situations (e.g., employing diverse problem-solving strategies, adopting different communication

styles, considering others' perspectives, and replacing aggression with rational discourse) (19).

Role-playing sessions offer students with hearing loss a valuable opportunity not only to discuss their emotions in a safe, simulated environment but also to learn appropriate social interactions and coping mechanisms for navigating stressful situations and problem-solving. By assuming different roles, they gain valuable insights into the perspectives of others, prompting reflection on social issues and fostering the development of conflict resolution skills (20). Through interpersonal interactions with the therapist, students experience a range of positive outcomes: Acceptance, release, alleviation of distress, redirection of impulses, and ultimately, corrective emotional experiences. In a safe space with an experienced therapist, children can express their pent-up emotions, engaging in emotional disclosure, which serves as a powerful tool in addressing a wide range of behavioral disorders. Importantly, through these interactions, children learn that different coping strategies are effective in different situations, each serving unique purposes in achieving their goals. Ultimately, role-playing helps them develop the ability to express their own emotions and understand the emotions of others (18).

A significant finding of the study was the effectiveness of role-playing training in enhancing the sense of coherence among students with hearing loss. Sense of coherence, conceptualized as an individual's ability to manage psychological stressors and tolerate high levels of stress, was a key focus of the research. Individuals with a high sense of coherence experience shorter periods of harmful stress associated with negative experiences compared to those with a low sense of coherence. While sense of coherence is crucial for individual growth and health maintenance, it cannot solely explain overall well-being (27). There appear to be individual variations in the sense of coherence that are linked to both physical and mental health. Therefore, sense of coherence can be viewed as a distinct way of thinking, being, and acting with inner certainty and clarity, enabling individuals to identify, utilize, and draw upon their available resources (28).

Antonovsky (14), in discussing the consequences of sense of coherence, asserts that it serves as a generalized

resistance resource that modulates the impact of stress on health. This modulation occurs by providing individuals with beneficial and effective coping strategies for dealing with stressors, enabling them to demonstrate greater resilience against the effects of life's stresses (18). Since students with hearing loss often exhibit low levels of sense of coherence, role-playing training can be employed to enhance this sense. In role-playing, individuals establish emotional connections with the performance and actors, engage with the excitement of the play, and feel immersed in the scene. As this method engages all of the individual's senses, learning is accelerated, thereby increasing their motivation for achieving a sense of coherence. These activities also motivate students to engage in deep learning, resulting in a meaningful understanding of course materials and content.

It is important to acknowledge the limitations of this study. Firstly, as the research was conducted with students with hearing loss, caution should be exercised when generalizing the findings to children with other sensory and motor impairments. Secondly, gender differences were not examined in this study. Additionally, the use of a self-report instrument may have introduced potential biases into the results.

5.1. Conclusions

Students with hearing loss who participated in the role-playing training program showed significant improvements in both emotional self-disclosure and sense of coherence. These findings suggest that role-playing training may be a valuable tool for promoting emotional well-being and fostering a stronger sense of coherence in deaf student populations. In conclusion, this study's results highlight the potential of role-playing training as an effective intervention for enhancing emotional well-being and sense of coherence in students with hearing loss.

Future research can build upon these findings to inform the development of evidence-based practices to support the emotional and psychological needs of students with hearing loss. Specifically, future research could explore the underlying mechanisms contributing to the positive outcomes observed in this study. Additionally, investigating the long-term effects of role-playing training on emotional self-disclosure and sense of coherence would be beneficial. Examining the effectiveness of this intervention among students with hearing loss of varying ages and communication methods could also provide valuable insights for educators and practitioners working with deaf populations.

Footnotes

Authors' Contribution: H. S.: Study concept and design, acquisition of data, analysis and interpretation of data, and statistical analysis; S. V.: Administrative, technical, and material support, study supervision; M. A.: Critical revision of the manuscript for important intellectual content.

Conflict of Interests Statement: There are no conflicts of interest.

Data Availability: The dataset presented in the study is available on request from the corresponding author during submission or after publication. The data are not publicly available due to the agreement of all authors.

Ethical Approval: The study was approved by the Ethical Committee of Islamic Azad University (IR.IAU.SARI.REC.1402.270).

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