# The Effectiveness of Emotional Intelligence Training on the Mental Health of Male Deaf Students

**Masoume POURMOHAMADREZA-TAJRISHI [1], *Mohammad ASHORI [2], Seyede Somaye JALILABKENAR [3]**

1. Pediatric Neurorehabilitation Research Center, Dept. of Psychology and Exceptional Children Education, University of Social Welfare and Rehabilitation Sciences, Tehran, Iran
2. Dept. of Psychology and Exceptional Children Education, Faculty of Psychology and Educational Sciences, University of Tehran, Tehran, Iran
3. Dept. of Psychology and Exceptional Children Education, University of Social Welfare and Rehabilitation Sciences, Tehran, Iran

*Corresponding Author: Email: ashorimohamad@yahoo.com

## Abstract

**Background:** Deafness is a common neural-sensory impairment which leads to lower life quality, withdrawal, social activities reduction, and rejection feeling. So, it is important to plan suitable training programs for mental health promotion of deaf children. Emotional intelligence training is one of these programs. The present study was aimed to determine the effectiveness of emotional intelligence training on the mental health of deaf students.

**Methods:** In this semi-experimental study with pretest and posttest design, General Health Questionnaire (GHQ) was completed in 40 randomly selected boy deaf students with mean age of (12.48) years old before and after the intervention. The aim of the questionnaire was obtaining information of somatic symptoms, anxiety, social dysfunction, and depression as well as general health. The students were assigned in experimental and control group randomly and in equal. Experimental group participated in 12 sessions (each session lasts for 50 minutes; twice a week) and were trained by emotional intelligence program, but control group did not. Multivariate analysis of covariance (MANCOVA) was used for analyzing the data.

**Results:** There was a significant difference ($P<0.001$) between experimental and control group according to somatic symptoms, anxiety, social dysfunction, depression and general health as a whole after participation in intervention sessions.

**Conclusion:** There was a significant decrease in somatic symptoms, anxiety, social dysfunction, depression and increase in general health of experimental group. Our findings showed that emotional intelligence training program led to promote of general health of boy deaf students.

**Keywords:** Deaf students, Emotional intelligence, Mental health

## Introduction

Deaf person is unable to hear and even understand a loud voice. The hearing threshold of his better ear is 90 decibel (dB) or more and he can hear with or without using hearing aid (1). Hearing impairment is the most frequent sensory deficiency in communities, which affects more than 250 million people in the world (2). Hearing loss affects nearly 15-26% of the world's population, with the highest prevalence in low-income countries (3-4). Deaf people are very heterogeneous populations relating to cognitive, social, and emotional development (1). Hearing impairment coin-

cides with inability to communicate, delay in language acquisition, educational disadvantage, social isolation, withdrawal, rejection, depression and anxiety. This factors lead to decrease of mental as well as general health (5). Different countries have provided diverse educational and rehabilitation services (6), although it seems insufficient (7). Therefore, it is important to plan educational programs to increase the mental health of deaf students. Mental health is an important issue which can spark many debates (8). Health means not only lack of illness or disability but also it includes physical and mental situations or social welfare. Mental health is also a state of well-being that person identifies their abilities, can cope with ordinary life stress, work fruitful and productive, and play his role in the environment (9**)**. As far as, deaf children have limitations in their linguistic skills, they are facing with social and psychological problems. They cannot set up his own relationships with other people, as well as their peers in various situations. These situations will follow with negative subsequences for their health. So, paying attention to the mental health of deaf children is one of the main goals of teaching programs for them (10). Obviously, providing rehabilitation services for deaf people, such as emotional intelligence training is essential for promotion of their mental health (10-11). Unlike the cognitive intelligence, emotional intelligence is not a fixed ability and can be promoted through special training.

Massive researches have been done about the effect of emotional intelligence training on mental health of children in different age and groups. It is reported that there is a significant and positive relationship between emotional intelligence and academic achievement as well as reduction of behavior problems (12). Results of the meta-analyses showed that there is a significant relationship between emotional intelligence and mental health. Also, higher emotional intelligence leads to better mental health (13). Many studies have indicated that emotional intelligence training is effective on mental health, depression, anxiety, somatic symptoms and social dysfunction of students (14-17).

Literature review showed that emotional intelligence has great effect on memory health, perception of experience, judgment, decision making and mental development (18). On the other hand, deafness can affect on the components of emotional intelligence such as, self-awareness, self-management, social awareness and relationship management. Low emotional intelligence associates positively with weak self-concept, isolation, despair, depression and anxiety (19). It seems that the mental health of deaf students can be affected by emotional intelligence. However, few studies have focused on deaf population. Therefore, it is essential to provide comprehensive educational and rehabilitation programs for deaf students to promote their mental health. Consequently, they are able to cope with serious problems in their daily life.

The present study was aimed to assess the effect of emotional intelligence training on mental health of deaf students in Tehran Province and looked the answers for this question: Does emotional intelligence training promote the mental health and its components of deaf students?

## Materials and Methods

This was a semi-experimental study with pretest and posttest design covering a sample of 40 deaf boy students representative of Tehran Province aged 12 to 14 years old (mean=12.48 and standard deviation=1.81). The study was formally approved by Exceptional Education Organization ethics in Iran. After supplying written informed by parents of students, 40 deaf students educating in specific schools (middle school; 2nd grade) were selected randomly by cluster sampling method from two provinces and two schools. To measure students' intelligence, all participants answered to Wechsler Intelligence Scale for Children-revised (WISC-R). The WISC-R is composed of 12 subscales and provides three intelligent quotient (IQ) scores: verbal, nonverbal and total IQ. To assess verbal IQ, the scores of subtests: information, similarities, arithmetic, vocabulary, comprehension, and digit span were summed up. For assessing nonverbal

IQ, the scores of subtests: performance, picture completion, picture arrangement, block design, object assembly, coding, and mazes were calculated. Total IQ was calculated by the summation of verbal and nonverbal IQs. The reliability and validity of WISC-R was measured and reported 0.73 for its reliability and correlation quotients for verbal, nonverbal and total IQs were 0.84, 0.74, and 0.85 respectively (20). To assess subjects' health, General Health Questionnaire (GHQ-28; Goldberg & Hiller) was used. The GHQ consists of 4 subscales (somatic symptoms, anxiety, depression, and social dysfunction) and each subscale has 7 items.

The questionnaire was scored based on Likert from zero (for more than ever) to 3 (much worse than ever). Twenty-three point or higher (cut point) is an index for lack of mental health. Goldberg reported reliability and validity of the questionnaire 0.89 and 0.83 (21). In Iran, the reliability of GHQ-28 has reported 0.91 for mental health and 0.84, 0.78, 0.79, and 0.81 for somatic symptoms, anxiety, social dysfunction, and depression in respect (22). Also, it was reported 0.88 for its reliability and 0.55 for the subscales' validity (23). After answering to WISC-R, the boys who got 90-110 scores in WISC-R (mean=98.36 and standard deviation= 2.44) selected and answered to GHQ-28. Then, all participants were divided to experimental and control groups randomly (20 students in each group). Experimental group participated in 12 intervention sessions (twice a week; each lasting for 50 minutes) and trained by emotional intelligence program, while control group did not. All participants completed GHQ-28 after the sessions. The data were analyzed by multivariate analysis of variance.

The emotional intelligence training program which was used in the present study was provided by Hoveizavi and Enayati (24). The content of training sessions were as follows: (Table 1).

**Table 1:** The content of emotional intelligence program sessions

| Sessions | Context of each session |
| --- | --- |
| 1 | Introduction and recognizing of emotions |
| 2 | Awareness of own emotions |
| 3 | Identify and awareness about emotions' causes |
| 4 | Understanding the consequences of emotion and decision making |
| 5 | explaining the methods of emotions' management |
| 6 | Managing own emotions and self-assertiveness |
| 7 | Control and regulation of other's emotions |
| 8 | Management other emotions and problem solving |
| 9 | Empathy and how to deal with other's emotions |
| 10 | Training about interpersonal relationships and coping with stress |
| 11 | Social awareness and own contribution for change |
| 12 | Summing up of the previous sessions and give recommendations |

## Results

There was difference between experimental and control groups according to mental health and its components (Table 2). The representative indices in Table 2, showed that the mean of mental health and its components have reduced in posttest situation in comparison with pretest.

It is required to test the assumptions of analysis of covariance (ANCOVA) for determining the effectiveness of emotional intelligence training on mental health of deaf students. So, the normality of variables and the sameness of variances were tested. The Kolmogorov-Smirnov test showed that all variables were normal and Leven test was not significant (*P*=0.789). In order to compare the mental health of experimental and control groups in posttest, ANCOVA was used. Its results have reported in Table 3.

**Table 2:** Descriptive indices of mental health for experimental and control groups in pretest and posttest situations

| Variable | Situation | Experimental group | | Control group | |
|---|---|---|---|---|---|
| | | Mean | Std deviation | Mean | Std deviation |
| Somatic symptoms | Pretest | 10.15 | 0.81 | 10.20 | 0.77 |
| | Posttest | 6.55 | 1.00 | 10.20 | 0.89 |
| Anxiety | Pretest | 13.60 | 1.47 | 13.25 | 1.29 |
| | Posttest | 9.80 | 1.44 | 13.25 | 1.41 |
| | Pretest | 12.80 | 1.15 | 12.50 | 1.10 |
| Social dysfunction | | | | | |
| | Posttest | 9.05 | 1.32 | 12.75 | 0.91 |
| Depression | Pretest | 15.55 | 1.19 | 16.00 | 0.97 |
| | Posttest | 13.10 | 1.25 | 15.90 | 1.07 |
| Mental health | Pretest | 51.95 | 1.90 | 51.95 | 1.70 |
| | Posttest | 38.30 | 2.15 | 52.20 | 1.94 |

**Table 3:** The results of ANCOVA for comparing mental health of experimental and control groups

| Source of change | SS | df | MS | F | Sig | $\eta^2$ |
|---|---|---|---|---|---|---|
| Pretest | 77.905 | 1 | 77.905 | 37.191 | <0.001 | .501 |
| Group | 1932.100 | 1 | 1932.100 | 889.275 | <0.005 | .960 |
| Error | 79.495 | 37 | 2.149 | | | |
| Total | 2091.500 | 39 | | | | |

As indicated in Table 3, there is a significant difference ($P<0.001$) between experimental and control groups according to mental health. Also, according to $\eta^2$, 96% of variation of mental health can be explained by participating in emotional intelligence training sessions.

In order to determining the effectiveness of emotional intelligence training on the components of mental health in deaf students, multivariate analysis of covariance (MANCOVA) was used. At first, overall Wilk's Lambda was significant ($P<0.001$), which was indicating that overall predictors can differentiate between two groups. The results of MANCOVA were showed in Table 4 for comparing the components of mental health in experimental and control group.

**Table 4:** Results of MANCOVA for comparing the components of mental health in two groups

| Source of change | Depended variable | SS | MS | F | Sig | $\eta^2$ |
|---|---|---|---|---|---|---|
| Pretest | Somatic symptoms | 18.678 | 18.678 | 45.574 | <.001 | .573 |
| | Anxiety | 53.078 | 53.078 | 123.836 | <.001 | .785 |
| | Social dysfunction | 23.023 | 23.023 | 41.575 | <.001 | .550 |
| | Depression | 31.014 | 31.014 | 66.259 | <.001 | .661 |
| Group | Somatic symptoms | 121.386 | 121.386 | 296.183 | <.001 | .897 |
| | Anxiety | 128.978 | 128.978 | 300.917 | <.001 | .898 |
| | Social dysfunction | 142.705 | 142.705 | 257.696 | <.001 | .883 |
| | Depression | 49.335 | 49.335 | 105.400 | <.001 | .756 |

The results of MANCOVA showed that emotional intelligence training had positive and significant (*P*<0.001) effect on somatic symptoms, anxiety, social dysfunction, and depression of experimental group. Also, according to eta quotient (**η**2) 0.89%, 0.89%, 0.88%, and 0.76% of variation in somatic symptoms, anxiety, social dysfunction, and depression respectively can be explained by participating to emotional intelligence training sessions. Accordingly, as far as deaf students are participating to intervention sessions, their somatic symptoms, anxiety, social dysfunction, and depression will decrease and their mental health will increase.

## Discussion

Findings showed that the emotional intelligence training program had a positive effect on the promotion of mental health and decrease of somatic symptoms, anxiety, social dysfunction and depression in deaf students. The findings coincide with many studies (14-17). Also, some studies showed that there was a positive and significant relationship between emotional intelligence and decrease of behavioral problems (12) and aggression (25).

It is known that emotional intelligence is a complex construct which composed of emotional, personal and social abilities. It is included self-assessment of emotions perception of own and others, ability of establish and maintain intimate relationships with others, ability to express and manage emotions, self-control, and effective problem solving. These factors are affecting on the ability of an individual to cope with the environmental pressures and demands (14). On the other hand, deaf students do not develop as same as normal peers because of their communicative and psychological problems. As far as emotional intelligence can be learned, deaf students can learn it and promote their mental health.

Emotional intelligence training has reduced the anxiety and depression of deaf students. It is identified that emotional intelligence contributes on management and control of individual's emotions,

consequently set up interpersonal relationship (10). People with high emotional intelligence cope with problems in a reasonable way and they use different resources to identify stressful situations (26). As a sequence, they do not engage in insufficient cycle of negative thoughts which result in depression (16). It is probable that emotional intelligence is a crucial factor to regulate and control emotions as well as forming interpersonal relationships. It seems that emotional intelligence contributes on anxiety control (10).

Another finding indicated that emotional intelligence training affects social dysfunction in a positive way. As far as, the students identify verbal and nonverbal components of contact, they can promote their adequate social performance. An individual with low emotional intelligence, rarely detect incorrect beliefs and cannot apply for others' aid, accept his weaknesses, establish or continue a positive interaction, and show his feelings, this deficient cycle would lead to negative attitude toward other people, subsequently social dysfunction (16).

The rather small sample size should be considered when drawing conclusions from the present study. The lack of intervention program specified for deaf students, absence of tools for assessing mental health of them, and no opportunity for follow-up study were the most limitations of present study. It is recommended that paying attention to deafness of students' parents, personality characteristics, age, gender and deafness level of the students can provide more detailed results which are beneficial for promotion of mental health in deaf students. Also, it is better to plan the programs such as emotional intelligence training for deaf students in order to reduce or prevent from their problems related to mental health in adulthood.

## Conclusion

Emotional intelligence training has positive effect on mental health of deaf students. Regarding to psychological problems related to mental health of deaf students, it is valuable to develop and plan

programs which are aimed on emotional intelligence training. If the teachers and instructors are aware of mental health problems in deaf students, they can consider their special needs for helping them to cope with daily difficulties. Undoubtedly, students' ability for coping with problems can promote their mental health. Therefore, it is necessary to inform parents and teachers of the important role of emotional intelligence on promoting mental health of children with special needs.

## Ethical consideration

Ethical issues (including plagiarism, informed consent, misconduct, data fabrication and/ or falsification, double publication and / or submission, redundancy, etc.) have been completely observed by the authors.

## Acknowledgement

## References

1. Fellinger J, Holzinger D, Pollard R (2012). Mental health of deaf people. *The Lancet*, 379 (9820): 1037-44.
2. Fellinger J, Holzinger D, Sattel H, Laucht M, Goldberg D (2009). Correlates of mental health disorders among children with hearing impairments. *Journal of Development Medical Children Neural*, 5: 635-41.
3. Agrawal Y, Platz EA, Niparko JK (2008). Prevalence of hearing loss and differences by demographic characteristics among US adults: data from the National Health and Nutrition Examination Survey. *Arch Intern Med,* 168: 1522-30.
4. Beria JU, Raymann BC, Gigante LP (2007). Hearing impairment and socioeconomic factors: a population-based survey of an urban locality in southern Brazil. *Review Panama Salud Publication,* 21: 381-87.
5. Arlinger S (2003). Negative consequences of uncorrected hearing loss, a review. *Int J Audiol*, 42(2): 17-20.
6. Hauser PC, Hearn A, McKee M, Steider A (2010). Thew D. Deaf epistemology: deaf hood and deafness. *Am Ann Deaf,* 154: 486-96.
7. Feldman DM, Gum A (2007). Multigenerational perceptions of mental health services among deaf adults in Florida. *Am Ann Deaf,* 152: 391-97.
8. Ding W, Lehrer SF, Rosenquist JN, Audrain-McGovern J (2009). The impact of poor health on academic performance: New evidence using genetic markers. *Journal of Health Economics*, 28(3), 578-97.
9. World Health Organization (2005). *Promoting mental health.* A report of the world health organization, Department of mental health and substance abuse in collaboration with the Victorian health promoting foundation and the University of Melbourne Geneva, Switzerland.
10. Bar-on R (2006). The Bar-on model of emotional-social intelligence (ESI). *J Psychother,* 18: 13-25.
11. Yip J, Martin RA (2005). Sense of humor, emotional intelligence, and social competence. *J Res Pers,* 40: 1202-08.
12. Hanafi M, Yasin M, Bari S, Salubin R (2012). Emotional intelligence among deaf and hard hearing children. *J Soc Sci,* 7: 679-82.
13. Schutte NS, Malouff JM, Thorsteinsson EB, Bhullar N, Rooke SE (2007). A meta-analytic investigation of the relationship between emotional intelligence and health. *Personality and Individual Differences,* 42: 921-33.
14. Mayer JD, Salovey P, Caruso DR (2004). A further consideration of issues of emotional intelligence. *Journal of Psychological Inquiry,* 15(3): 249-55.
15. Saarni C (1998). *Developing emotional competence.* 1st ed. New York, Guilford press.
16. Beirami M (2008). Investigate the effectiveness of emotional intelligence training on self-assertiveness, self-efficacy and mental health of

students. *Tabriz University Quarterly of Psychology*, 3(11): 25-42.

17. Ma'asoomeh Esmaeeli, Hassan Ahadi, Ali Delavar, Abdollah Sahfei-abadi (2007). Effects of Emotional Intelligence Factors Training on Enhancing Mental Health. *Iranian Journal of Psychiatry and Clinical Psychology,* 13(2): 158-165.

18. Kaschub M (2002). Defining emotional intelligence in music education. *Arts Education Policy Review,* 103(5): 9-15.

19. Ashori M, Jalil-Abkenar SS, Hasanzadeh S, Pourmohamadreza-Tajrishi M (2013). Effectiveness of life skill instruction on the mental health of hearing loss students. *Journal of Rehabilitation,* 13(4): 48-57.

20. Razavieh A, Shahim S (2008). *Standardization of Wechsler intelligence scale revised for children in Iran.* 4th ed. Shiraz, Iran: Shiraz University Publication.

21. Goldberg DP, Gater R, Sartorius N, Ustun TB, Piccinelli M, Gureje O, et al. (1997). The validity of two versions of the GHQ in the WHO study of mental illness in general health care. *Psychol Med,* 27(1): 191-97.

22. Palahang H (1996). Investigate the epidemiology of mental disorders in Kashan City. *Journal of Though and Behavior*, 2(4): 19-27.

23. Abolghasemi A, Javanmirry L (2012). The role of social desirability, mental health and self-efficacy in predicting academic achievement of female students. *Journal of School Psychology,* 1(2): 6-20.

24. Hoveizavi Z, Enayati M (2010). Investigate the effectiveness of emotional intelligence training on using the methods in confronting with stress in high school female students in Ahvaz City. *Journal of New Finding in Psychology*, 5(14): 95-109.

25. Saadi Z, Mehrabizade M, Najjarian B, Ahadi H, Asgari P (2010). Investigate the effectiveness of emotional intelligence training on decreasing aggression and increasing socio-individual adjustment in high school female students in Ahvaz City. *Journal of New Finding in Psychology*, 12: 137-49.

26. Austin EJ, Farrelly D, Black K, Moore H (2007). Emotional intelligence, machiavellianism, and emotional manipulation. *Journal of Personality and Individual Differences,* 43: 173-79.

Available at:   http://ijph.tums.ac.ir