

The effectiveness of the parenting program based on the lived experiences of mothers with hearing impaired children on emotion regulation

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Abstract

Introduction: Considering the many problems faced by mothers of children with hearing impairment and their vulnerability and emotional disorders, the need for research on the factors influencing the emotional regulation of this group of mothers in order to formulate effective intervention solutions seems necessary. The distinctive feature of this research is that it was conducted based on the main concerns of the audience of the program, i.e. mothers of deaf children, which can be understood and explain the experiences of mothers of deaf children.

Research method: The current research method was mixed (qualitative and quantitative). The qualitative method was a phenomenological method that analyzed the lived experiences of mothers. The current research was quantitative in terms of purpose, practical in terms of the way of collecting information, a quasi-experimental experiment, with a pre-test-post-test design with a control group. The statistical population of the research in the qualitative part included all mothers with children with hearing loss in the cities of Sari and Miandorud. In the qualitative part, the purposeful sampling method was used until data saturation. The sampling method in the quantitative part was such that the number of 30 mothers with deaf children available, whose children studied in special education schools, were selected and then divided into two experimental groups (number of 15 people) and control group (15 people) were randomly divided. The research tool in the quantitative part was the emotion regulation questionnaire of Gratz and Romer (2004). The face and content validity of the said questionnaire was confirmed after the approval of ten professors in the field of psychology and measurement, and its reliability was calculated using the Cronbach's alpha method of 0.93. For data analysis SPSS 26 software was used.

Findings: In the qualitative part, after an unstructured interview of mothers with children with hearing loss about their experiences in parenting their children, the corresponding protocol was formed and developed. According to the statistical results, there is a significant difference between the two experimental groups and the control group in the emotion regulation variable (sig=0.000, F=849/541).

Conclusion: The method of parenting program training interventions based on the lived experiences of mothers with children with hearing impairment has an effect on emotion regulation.

Keywords: emotion regulation, hearing impaired children, lived experiences

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Introduction:

Child deafness is one of the most common disabilities at birth (1). Hearing loss is the fourth cause of disability in the world. The reports of the World Health Organization show that more than 5% of the world's population suffered from hearing loss and deafness in 2020 (2). It is estimated that by the year 2050, this number will increase to about 900 million people, which is a very large number. In the last few years, we have had a nearly 25% increase in deafness cases in the world, so that since 2013, it has increased from about 360 million people to 466 million people worldwide. In Iran, about 5.3% of the population suffers from deafness and hearing loss. Almost out of every 1000 births, 2.7% of babies are hearing impaired, which is about 3500 babies per year. The number is close to 300 hearing impaired babies per month and 10 babies per day (3).

Having a child with special needs may bring many psychological, economic and social problems and pressures for families, and if neglected, it leads to high levels of psychological distress (4, 5). Parents of children with disabilities face problems such as coordinating their usual duties with their child's treatment plans, additional physical pressures, and emotional adaptation to their child's different situation, and the expectations they have from their children as parents (6). This situation provides conditions for increasing challenges and problems in the family (7); So that the diagnosis of a child's deafness is a serious problem and a critical incident for parents (8); It is often an unpleasant and stressful experience, and for many of them, it brings feelings similar to a hot sight (9).

The physical and mental needs of these children and the time and energy needed to take care of them are unique challenges for mothers (10). When a mother encounters a disabled child, her dreams and expectations of having a healthy child are shattered, which leads to depression and mental and emotional problems in the mother. It is obvious that a mother who has mental and emotional problems and is depressed cannot behave properly with her disabled child (11). The evidence shows that the child's disability leads to a painful process and conflict for the mother, so that she feels guilty because of the birth of a disabled child (12, 13). These mothers may experience a lot of stress and worry even years after the diagnosis of their child's hearing loss (14).

According to the results of the research, one of the problems and injuries of mothers of children with hearing loss is emotion management and regulation. Researches have proven that these mothers suffer from damage in emotion regulation (15). According to Rutherford et al. (2015), parents are in challenging situations every day. In order to properly deal with these events, especially when they face their child's distress, they need to reduce their emotions (16).

Emotions are a fundamental phenomenon of human functioning, which has an adaptive value for increasing our pursuit of goals (17). Emotion regulation refers to the conscious or unconscious processes of monitoring, evaluating, adjusting and managing emotional experiences and expressing emotions according to the intensity, form and duration of emotions, states and physiological behaviors related to emotions (18).

Emotion regulation has a prominent role in the development and maintenance of emotional disorders (19); and it plays an important role in adapting people to stressful life events (20). Studies show that people's differences in the use of different emotion regulation styles cause different emotional, cognitive and social consequences (19).

Recent researchers have found that effective and efficient emotional regulation is very vital for mental health and difficulty in regulating emotion is related to a range of problematic behaviors and mental disorders such as substance abuse, self-harm, depression, anxiety, borderline personality disorder and Stress occurs after an accident (21, 22). The research of Malesza (2019) and Herwig et al. (2018) showed that a defect in emotion regulation can cause psychological damage such as anxiety, depression and weakness in self-efficacy (23, 24). Razzakpour and Hosseinpour (2018) also reached the conclusion in their study that there is a significant positive relationship between negative strategies of cognitive emotion regulation and emotional dyslexia (25).

Considering the many problems that mothers of children with special needs face, such as a very high workload in the family and vulnerability and emotional disorders such as anxiety and depression, the need for research in the field of influencing factors in emotional regulation of this group of mothers in order to Formulating effective intervention solutions seems necessary (26). Considering the role of emotion regulation problems in creating and maintaining emotional problems, it seems that training and application of emotion regulation skills in reducing emotional problems can help improve this area (27).

Reviewing the history of research related to hearing impairments shows that less studies have been done to identify and explain the problems faced by the parents of these children. Since no research has been conducted on the effectiveness of parenting methods of mothers with deaf children on their emotion regulation, the distinctive feature of this research is that it was conducted based on the main concerns of the audience of the program, i.e. mothers of deaf children, which can be understood and explain the experiences of mothers of deaf children. The noteworthy point is that when dealing with a hearing impaired child, transformational experiences, personal beliefs and expectations along with cultural expectations may lead to the emergence of special family conditions and unique parenting needs, which justifies the necessity of conducting the present study. Some researchers conducted in the fields related to children with special needs and effective psychological methods of emotional regulation of the mothers of these children are:

Aghaziarti et al. (1402) conducted a research titled "Effectiveness of Mindful Parenting on Cognitive and Behavioral Emotion Regulation of Mothers of Hearing Impaired Children". The statistical population included all mothers with hearing-impaired children aged 4 to 6 in Tehran in 1400, who were selected by a simple random method from deaf and hearing-impaired centers and associations. The results showed that the mindful parenting program had a significant effect on the cognitive and behavioral regulation of emotions of mothers of hearing-impaired children (28).

Safarpour and Ashuri (2022) in the research "Incredible Years Parenting Program: Behavioral Emotion Regulation and Resilience in Mothers of Deaf Children" concluded that the intervention had a positive and significant effect on emotional regulation and behavioral resilience of mothers of deaf children ($0.001 > p$). This study shows that the IY parenting program can promote behavioral emotion regulation and resilience in mothers of deaf children. Therefore, this program was applicable and acceptable for these mothers (29).

Saberi Rad et al. (2019) conducted a research titled "Effectiveness of parenting program based on Saunders model on mothers' emotion regulation and mother-child interaction with behavioral disorder", which was a quasi-experimental study with a pre-test-post-test design and a control group. The statistical population of this research was made up of mothers of children with behavioral disorders in Varamin city. The results of multivariate covariance analysis showed that parenting program training based on Saunders model has a significant effect on emotional regulation in mothers and mother-child interaction with behavioral disorder in the post-test stage (30). Shapin and de Graff (2017) in a research entitled "Effectiveness of parenting program based on the Saunders model in the Netherlands" which was systematically and meta-analyzed, concluded that this method led to the reduction of children's behavioral problems and the promotion of emotion regulation and increase the degree of intimacy of mothers becomes (31). Lohan et al. (2016) concluded that the parenting training program based on the Saunders model leads to a significant improvement in the interaction of mothers with their children as well as the general health of mothers (32).

Research method:

The current research method was mixed (qualitative and quantitative). The qualitative method was a phenomenological method that interviewed mothers with deaf children and analyzed their lived experiences in this regard. The current research is quantitative in terms of purpose, applied, in terms of the method of collecting information and data, experimental, semi-experimental (quasi-experimental), with a pre-test-post-test design with a control group, and in terms of the nature of the data, it was a little.

The statistical population of the research in the qualitative part included all mothers with children with hearing loss in the cities of Sari and Miandorud. In the qualitative part, the purposeful sampling method was used to the extent of data saturation, thus, 15 mothers with hearing impairment were interviewed until the data was sufficient.

The sampling method in the quantitative part was such that the number of 30 mothers with deaf children available, whose children were studying in special education schools in Sari and Miandorud cities, were selected and then in two experimental groups (number of 15 people) and The control group (15 people) was randomly divided. To answer the research question, emotion regulation of experimental and control groups was measured twice. The first measurement was carried out through a pre-test before the parenting program training interventions based on the

lived experiences of mothers with hearing impaired children. The second measurement was done through the post-test after the parenting program training interventions based on the lived experiences of mothers with hearing impaired children in the experimental group. In the interval between the pre-test and post-test, based on the parenting program training intervention protocol based on the lived experiences of mothers with children with hearing impairment, the subjects of the experimental group were exposed to the experience-based parenting program training intervention program for 10 weeks, 1 session per week, for 2 hours. The lives of mothers with hearing impaired children were included. The control group did not receive any intervention.

In the qualitative part, after an unstructured interview of mothers with children with hearing loss about their experiences in parenting their children, the corresponding protocol was formed and developed.

Table 1. Implementation protocol for training mothers with children with hearing loss

Session1	Acquainting mothers with the methods of solving the feeling of loneliness in a deaf child	Trying to make the child hope to communicate, creating opportunities for the child to express his opinions
Session 2	Familiarization with communication strategies with a deaf child	Using body language and the language of the heart, methods of paying attention to the child, strategies to prevent the feeling of rejection in the child, teaching skills to the deaf child, trying to make the child hope to communicate, creating opportunities for the child to express his opinions, playing with the deaf child. , the way of writing to make a deaf child understand
Session 3	Acquainting mothers with ways to relieve feelings of helplessness	Learning how to behave with a deaf child, strategies to increase resilience in mothers, getting to know the real world of a deaf child, adjusting the level of expectations towards a deaf child, empowering a deaf child by providing learning opportunities, coping with the problems of a deaf child, accepting a deaf child, Taking advantage of the experiences of mothers with deaf children
Session 4	Acquaintance with emotion control methods	Not screaming and yelling at the deaf child, not crying, not fighting with the spouse

Session 5	Acquaintance with ways to relieve fatigue	Going down the street with a deaf child, making things easier for the child
Session 6	Familiarizing mothers with how to care for a deaf child	Placing a bottle of water and some biscuits with a cake next to the child's bed, preparing a hearing aid for a deaf child, under the care of a doctor and checking her hearing aid.
Session 7	Acceptance of the child's deafness problem	Understanding the problems of a deaf child, coping with the challenges of a deaf child, normalizing the behavior of a deaf child, not putting psychological pressure on the child,
Session 8	Taking advantage of the experiences of mothers with deaf children	Increasing awareness about deaf children, talking to mothers with deaf children
Session 9	Resolving the feeling of frustration in communication for a deaf child	Giving the child the opportunity to understand what they mean, being careless about them and their needs, giving them hope, and providing the basis for giving them hope in life.
Session 10	A lot of interaction with the deaf child	Loving the deaf child, giving a lot of attention to the child, preventing the child from creating feelings, having a lot of interaction and communication with the child

The research tool in the quantitative part was the emotion regulation questionnaire of Gratz and Romer (2004). This scale is a 36-item multidimensional self-report questionnaire that, in addition to evaluating emotional regulation, evaluates the difficulty in emotion regulation. This questionnaire had 6 dimensions (not accepting emotional responses, problems engaging in purposeful behavior, impulse control problems, lack of emotional awareness, limited access to emotion regulation strategies, lack of emotional clarity) (33).

The face and content validity of the said questionnaire was confirmed after the approval of ten professors in the field of psychology and measurement, and its reliability was calculated using the Cronbach's alpha method of 0.93. For data analysis, in addition to descriptive statistics, Mbox test, Levon test, one-way analysis of variance (ANOVA) and multivariate covariance analysis (MANCOVA) were used. SPSS 26 software was used to answer the research question.

Findings:

Table 2 presents the descriptive statistics of the research variables, separately for the experimental and control groups and in each of the pre-test and post-test stages.

Table 2. Descriptive statistics indices of the research variables by groups in the pre-test and post-test stages

Variable	Group	Test	Mean	The standard deviation	Number
Excitement regulation	Control	Pre-test	1.40	0.507	15
		Post-test	1.33	0.488	15
		total	1.37	0.490	30
	Experiment	Pre-test	1.13	0.352	15
		Post-test	4.67	0.816	15
		Total	2.90	1.900	30
	total	Pre-test	1.27	0.4500	30
		Post-test	3.00	1.819	30
		Total	2.13	1.578	60

As can be seen in Table 2, the average of the experimental and control groups in both variables is almost the same in the pre-test stage, but in the post-test stage, the average of the experimental group has increased in the emotion regulation variable. While in the control group, minor changes are observed in the pre-test and post-test stages.

Mbox test was used to check the assumption of homogeneity of the variance matrix and covariance of the dependent variables in the experimental and control groups. Table 3 shows the results of the Mbox test to check the equality of the covariance matrix of the dependent variables between the experimental group and the control group.

Table 3. Examining the assumption of homogeneity of variance matrix and variances

Group	Mbox statistics	F	Degree of freedom 1	Degree of freedom2	The significance level
Experimental group	24.031	2.497	9	35937/955	0.08

According to Table 3, the rate of committing errors, that is, the level of significance is greater than 0.05. Therefore, the null hypothesis is accepted and the equality of the observed covariance

matrices of the research variable (emotion regulation) among the experimental and control groups is confirmed.

Another presupposition of using covariance analysis test is the sameness of variance. Based on this, Levon's test was used to check the uniformity of variance distribution of the research data. In Table 4, the results of Levon's test are given.

Table 4. Lon's test about the equality of error variances of research variables

Variables	F	Df1	Df2	The significance level
Excitement regulation	2.226	3	56	0.091

Considering the information in the above table and considering that the significance level values are greater than 0.05, it is concluded that the research data have the same variance. Based on this, the analysis of covariance test can be used. Considering the presuppositions of the Multivariate Covariance Analysis (MANCVA) test, now the hypothesis test, the research question is presented.

As mentioned, multivariate analysis of covariance (MANCOVA) test was used to check the effectiveness of parenting program training interventions based on the lived experiences of mothers with hearing impaired children on emotion regulation. The results of this test are presented in Table 5.

Table 5. The results of the multivariate covariance analysis (MANOVA) test to determine the difference in the dependent variable

Multivariate test	Value	F	The degree of freedom of the hypothesis	Error degree of freedom	The of significance level	Effect size
Wilks Lambda	0.952	545.095	2	55	0.000	0.952

Based on the results of Wilks' lambda multivariate test in Table 5, there is a significant difference between the two experimental and control groups in the dependent variable (emotion regulation). The value of F in Wilks's lambda test is 545.095 and its significance level is less than 0.001. In fact, the results of Wilks's lambda test show that there is a significant difference between the two experimental and control groups, at least in the research variable (emotion regulation). Based on this, one-way analysis of variance (ANOVA) was used to determine which of the dependent variables had a significant difference. The results of this test are reported in Table 6.

Table 6. The results of one-way analysis of variance tests to determine the difference in dependent variables

Variable	The source of effect	Between-group mean squares	Degrees of freedom	Mean squared error	F	The significance level	Effect size
Excitement regulation	Group	237.067	1	237.067	849.541	0.000	0.938

Based on the results listed in Table 6, it can be concluded that there is a significant difference between the two experimental groups and the control group in the emotion regulation variable (sig=0.000, F=849/541). Therefore, the method of parenting program training interventions based on the lived experiences of mothers with children with hearing impairment has an effect on emotion regulation.

Discussion and conclusion:

The birth and presence of a hearing-impaired child provides unique and different challenges for the family, which will lead to emotional issues such as disappointment, sadness, depression, disbelief, anger, helplessness, guilt, shame, and humiliation, and such people Families show different behaviors such as aggression, withdrawal, exclusion and social avoidance (34, 35, 36, 37). Studies have shown that a child's hearing loss can cause defects in family dynamics (38), and stress and anxiety in parents (39, 40). The research results show that the parents of exceptional children have more psychological problems and challenges than the parents of normal children, and also the amount of psychological problems of mothers is more compared to fathers. With regard to the above, the purpose of this study was to explain the effectiveness of the parenting program based on the lived experiences of mothers with hearing impaired children on their emotional regulation. Excitement has an effect.

Although this research was innovative in terms of content and method in order to explain the effectiveness of the parenting program based on the lived experiences of mothers, it can be acknowledged that the findings of the research are similar to the findings of Aghaziarti et al. (1402), Safarpour and Ashuri (2022).), Saberi-Rad et al. (2019) and Shapin and de Graff (2017) were consistent. This research also proved that teaching parenting methods by improving the interaction of mothers with their children improves the level of their emotional regulation.

Basically, the physical abnormality of children and the birth of a child with sensory damage affects the functioning of the family and the quality of life of all family members is affected by this. Parents of hearing-impaired children must obtain the necessary information and knowledge about their child's problems and challenges in order to properly and efficiently fulfill their responsibilities and, on the other hand, overcome the negative emotions caused by the presence of a hearing-impaired child. Therefore, holding family education classes and correct parenting methods can increase parents' knowledge and acceptance of the phenomenon of hearing loss and the behavioral characteristics of these children and improve family functioning and ultimately increase the quality of life in these families.

Recommendation:

In view of the above, it is suggested to perform hearing screening in kindergartens and schools to help hearing-impaired children and their families. Raising a hearing-impaired child is not necessarily equal to seeking isolation, and guidance and education of families is very important. One of the most important actions in this field is obtaining information and experiences of parents and exchanging information and knowledge between parents to benefit from each other's experiences.

Research limitations

The present study was conducted in the community of mothers with hearing impaired children in Sari and Miandorud cities. Also, the lived experiences of these mothers were used to develop the parenting method, so generalizing the results to other cities should be done with caution. Also, the instrument for measuring emotion regulation was the self-reported questionnaire of Gratz and Romes (2004) and no other methods were used.

Application of research

According to the results of the research and the impact of the parenting program on the emotional regulation of mothers, it is suggested that parenting sessions based on the lived experiences of mothers with children with hearing impairment and other developmental disabilities be developed and implemented. This method can be effective in psychological-social rehabilitation and management of their emotions while creating a deep understanding of the real concerns and issues of mothers.

Ethical considerations

In order to comply with the ethics of the research, the participants were first informed and reassured that the conducted interviews were voluntary and anonymous. Also, in the analysis of the questionnaires, honesty and scientific trustworthiness, informed consent to participate in the research and anonymity of the subjects were observed.

Conflict of interest: There is no conflict of interest in this article.

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