



Original Article

Effectiveness of Parent Training Compared with Life Skills Training on the Mental Health of Mothers of Children with Hearing Loss: A Randomized Clinical Trial

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ABSTRACT

Background: Hearing loss is one of the most common sensory disorders. The consequences of hearing loss in children and its effect on the mothers of affected children on the one hand and the emphasis of previous research on the effectiveness of educational interventions along with the lack of comparative studies on the other hand prompted us to conduct this research. The purpose of this study was to compare the effectiveness of parenting education and life skills training on the mental health of mothers with hearing-impaired children in the Covid-19 crisis and quarantine virtually.

Methods: This study was a randomized clinical trial. The research sample consisting of 46 mothers who have children with hearing loss were divided into two groups: a positive parenting training group and a group that was trained in a life skills program. The workshops of both groups were accomplished online due to the limitations caused by the Covid-19 pandemic. Data collection tools were three questionnaires of parenting, life skills, and general health that were completed in both pre-test and post-test stages. For data analysis, SPSS software version 26 was used.

Results: The results indicate that parenting education significantly reduced anxiety and depression in mothers with children with hearing impairment.

Conclusion: This research showed that parenting education increases the quality of life of mothers with children with hearing impairment and confirmed the positive effects of such education.

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Introduction

Hearing impairment is one of the most common sensory disorders in children [1, 2]. Hearing impairment reduces hearing and thus impairs the development of speech

and language skills [3-6]. Therefore, a child's hearing impairment puts a lot of stress on parents [7-9]. More than 95% of hearing-impaired children are born to hearing parents [10]. In such cases, the expectations hearing parents have of a hearing-impaired child are often similar to those they have of a hearing-impaired child. However, there is no harmony between the expectations of hearing parents, especially the mother, and the reactions of a

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hearing-impaired child [11-13]. This disrupts the parents' relationship with the deaf child [14].

Among the family members, the mother is the first person with whom the child has a relationship and is considered the center of health or illness [15]. Thus, the birth of a hearing-impaired child presents the family with challenges that may cause them distress, despair, depression, anger, helplessness, guilt, shame, and humiliation [16]. If these unpleasant consequences are not resolved logically, the psyche of the mother and family will suffer irreparable damage [17].

Studies have revealed the important role of parents in reducing, preventing, and developing interventions for child behavioral problems [8, 9, 18]. In general, the parenting style of parents is one of the most important factors affecting the psychosocial development of children [19]. The Triple P – Positive Parenting Program was established at the University of Queensland, Australia as a family behavioral intervention aiming to alter children's behavioral problems and improve family environments that maintain and reinforce child behavioral problems [20]. Social learning methods such as parent-child interaction models, family-child behavior therapy, applied behavior analysis, parenting development research, and child psychological pathology as well as social information data processing models and social and public health perspectives were used in the design of this program [21]. Considered the most comprehensive support program in the field of parenting, the Triple P – Positive Parenting Program is a preventive parenting method with a family support strategy that has several levels of intervention with varying degrees of intensity. All levels are used to prevent behavioral, developmental, and emotional problems in children [22].

A positive parenting program promotes a variety of aspects, including (1) parenting skills, knowledge, confidence, and resourcefulness; (2) a more nurturing, safer, more attractive, and nonviolent environment for children, and (3) more social, emotional, linguistic, intellectual, and behavioral abilities of children. Previous research has shown that a positive parenting program reduces parental stress through instilling parenting skills [23]. It also reduces disorders such as depression, anger, anxiety, and high levels of stress in parents [24].

Ashori and Ghafourian examined the effect of positive parenting education on the relationship profile of mothers and hearing-impaired children. Their results showed that parenting education improved the profile of parents with deaf children [18].

Movallali et al. examined the effectiveness of parenting on the mental health of families with children with hearing impairments. They concluded that educating parents on parenting styles significantly reduced somatic symptoms, anxiety, and interpersonal relationships [16].

Everyone faces problems and obstacles in the course of life that may change their quality of life, but the ways of dealing with problems are very different. Some people lack the necessary abilities and skills to face life problems, which makes them vulnerable to depression. Having resources and skills helps people cope with their problems in the best possible way [25]. Life skills are

psychosocial abilities for adaptive and effective behaviors that enable individuals to cope effectively with the needs and challenges of everyday life. The life-enhancement program is based on the components of life skills of the World Health Organization, including ten skills: decision-making, problem-solving, creative thinking, critical thinking, effective communication, interpersonal relationship, self-awareness, empathy abilities, the ability to deal with emotions, and the ability to deal with stress [26]. These skills help people develop the abilities, information, attitudes, and skills necessary for times of intense stress to have a successful, healthy, and stress-free life. Life skills training helps people, especially mothers with deaf children, know more about themselves and the situation as well as their strengths and weaknesses, thereby helping them better accept the facts and deal with them correctly. This increases adaptation and, consequently, acceptance of conditions, thus reducing stress. Such training encourages appropriate changes in attitudes and values, strengthens behaviors appropriate to health problems and barriers, promotes mental health, and enables people to face life's problems. Consistent with these findings, research has also shown that life skill training is a useful intervention and an effective way to improve one's self-efficacy for childcare [27].

Kakavandi et al. evaluated the effect of life skills training on the quality of life of mothers with hearing-impaired children and reported that such training caused a significant improvement in the scores of somatic health, mental health, social relationships, and quality of life [28].

Khooshab et al. conducted a non-blinded randomized controlled clinical trial on 52 mothers with blind children. Their results showed that a life skills training program significantly reduced maternal stress in the intervention group. Therefore, a life skills program can be used as an efficient, cost-effective, and simple technique to control the stress of mothers of blind children [29].

Considering the above points, the current study purposed to compare the effectiveness of parenting education and life skills training for the mental health of mothers with hearing-impaired children in the Covid-19 crisis and quarantine.

Methods

The present study was a randomized clinical trial (RCT) with two parallel groups and a two-stage design (pre-test and post-test). The research protocol was approved by the Ethics Committee of Shiraz University of Medical Sciences, Shiraz, Iran (IR.SUMS.MED.REC.1399.369). Participants were assured of the confidentiality of their information and gave written consent to participate in the research. The study population was all mothers of hearing-impaired children under training at the Soroush Rehabilitation Center in Shiraz, Iran. Criteria for inclusion comprised: Persian language, a child with hearing loss in the age range of 3 to 7 years, and no psychiatric disorder requiring medication. Conventional simple sampling was performed through the available samples. A total of 57 eligible individuals were included in the study.

First, the necessary information on confounding variables about each participant was collected through interviews, the child’s file, and a questionnaire. These variables were mother’s age, mother’s level of education, father’s level of education, father’s role, socioeconomic level of the family, family type, city of residence, number of children, child’s age, child’s gender, order of birth, comorbid disorders, severity of hearing loss, and type of hearing aid (Tables 1, 2).

Participants were randomly assigned into two groups using a table of random numbers. Group A consisted of 29 subjects, and group B comprised 28 participants. Then, the relevant data was entered into SPSS software, and the means of confounding variables were compared using the independent t-test at a significance level of 0.05. According to Table 1, no significant difference between the two groups was observed at baseline. In other words, the two groups had the same conditions at baseline concerning the confounding variables.

Data relevant to the study-related variables, including the mother’s general health status, authoritative parenting style, careless parenting style, authoritarian parenting style, and life skills, was gathered through relevant questionnaires sent by the authors to be completed by the mother and then analyzed by a psychologist. The mother’s general health status was determined using the general health questionnaire (GHQ) questionnaire, the mother’s parenting style was determined using the Parenting

Styles and Dimensions Questionnaire –short form (PSDQ) questionnaire, and life skills were determined using the life skills questionnaire. The relevant data was entered into SPSS software, and the means of dependent variables were compared using the independent t-test at a significance level of 0.05. No significant difference was observed between the two groups at baseline. In other words, the two groups had the same status at baseline concerning the dependent variables (Tables 1, 2).

In the next step, the type of intervention for each group was determined randomly; group A was given parenting education, and group B received life skills training. Using the Kiddie Schedule for Affective Disorders and Schizophrenia-Present version (KSADS-P) in a psychiatric interview conducted by the center’s clinical psychologist, mothers with children with possible disorders were excluded. The validity and reliability of this tool have been reported to be acceptable in Iran.

Parenting Styles and Dimensions Questionnaire–Short Form

The parenting style of the participants in both groups was quantitatively determined using the Robinson PSDQ, which has been validated in the Iranian population, and its reliability and validity were confirmed. The data obtained from this questionnaire was entered into SPSS software. This questionnaire consists of 32 questions covering the three styles of authoritarian, authoritative,

Table 1: Comparison of the scores of the qualitative variables within the subgroups at baseline

Variables	Subgroups	Parenting		Life skills		P value
		Frequency	Percentage	Frequency	Percentage	
Mother’s level of education	Under diploma	3	12.25	3	13.6	1
	Diploma	9	36.75	8	36.4	
	Post-diploma certificate	12	50	11	50	
Father’s level of education	Under diploma	1	4.2	6	27.3	0.027
	Diploma	8	33.3	10	45.5	
	Post-diploma certificate	15	62.5	6	27.3	
Socioeconomic level of the family	Poor	3	12.5	3	13.6	1
	Moderate	19	79.2	17	77.3	
	Good	2	8.3	2	9.1	
Child’s gender	Boy	11	45.8	9	40.9	0.774
	Girl	13	54.2	13	59.1	
Number of children	One	11	45.8	13	59.1	0.696
	Two	10	41.7	7	31.8	
	Three	3	12.5	2	9.1	
Order of birth	First	12	50	14	63.6	0.648
	Second	10	41.7	7	31.8	
	Third	2	8.3	1	4.5	
Comorbid disorders	Yes	6	25	4	18.2	0.725
	No	18	75	18	81.8	
Severity of hearing loss	Mild	4	16.7	2	9.1	0.57
	Moderate	2	8.3	4	18.2	
	Severe	18	75	16	72.7	
Type of hearing aid	HAs	6	25	6	27.3	1
	CI	18	75	16	72.7	
Family type	Nuclear	20	83.8	20	90.9	0.667
	Non-nuclear	4	16.7	2	9.1	
City of residence	Shiraz	13	54.2	8	36.4	0.253
	Other city	11	45.8	14	63.6	
Father’s role	Positive	19	70.2	15	68.2	0.605
	Null	5	20.8	6	27.3	
	Negative	0	0	1	4.5	

Table 2: Comparison of the scores of the quantitative variables within the subgroups at baseline

Variables	Parenting		Life skills		P value
	Mean	SD	Mean	SD	
Mother's age	33.63	5.57	30.77	4.95	0.073
Child's age	52.25	14.29	50.95	15.71	0.772

and permissive parenting (12, 15, and 5 questions, respectively). Each question is scored based on 5 options (never=1, sometimes=2, almost half of the time=3, many times=4, always=5); for each option, a score equal to its number is considered. To analyze the resulting data, the questions were first separated according to parenting style; after the score for each style was calculated, the scores were entered into a comparative analysis.

Life Skills Questionnaire

The life skills of participating mothers were assessed through the life skills questionnaire of Saatchi et al. Its validity and reliability were confirmed, and the data from this questionnaire was entered into the relevant software. This questionnaire contains 40 items that are scored based on a five-point Likert scale (very low, low, to some extent, high, very high). They are listed in options 1 to 5, respectively, each of which having a numerical value equivalent to its option. As a result, test scores range from 40 to 200.

General Health Questionnaire-28

The level of mental health of the participants in both groups was measured through a GHQ. The validity and reliability of this questionnaire has already been confirmed in Iran, and the relevant data was entered into the software. This questionnaire consists of 28 items for each of the four options. The options have a numerical value of 0 to 3. A lower score indicates a better level of mental health. The scores on this questionnaire also range from 0 to 84.

Because this project was implemented during the Covid-19 pandemic and thus holding a face-to-face workshop was impossible, the training course was held as a virtual workshop via "WhatsApp" due to its no-cost, availability, ease of use, and popularity among mothers.

Training in both groups was conducted by a female psychologist with a master's degree.

The intervention comprised ten 120-minute workshops held twice a week.

The structure of each session on the appointed day and time was to first review the participants' assignments from the previous session, extract practice exercises, provide feedback, introduce the content of the current session, teach the new topic, practice, and determine the practice of the next session.

To improve the training process, if any ambiguity or question arose for any of the members on days other than those on which the main meetings were held, the issue was raised in the group, and an answer was provided with the participation of others.

Parenting Training Workshop

Parenting education was conducted with the Triple P - Positive Parenting Program, in which parents

were introduced to parenting techniques designed by professors at the University of Queensland in Australia and based on a memorandum of understanding between the Cognitive Sciences Research Institute (Iran), the Iranian Child and Adolescent Psychiatric Association, and Triple P International, which is in charge of distributing this program. The license was issued to implement the program in Iran.

Life Skills Training Workshop

The life skills training program was based on the life skills components of the World Health Organization and comprised ten skills: decision-making, problem-solving, creative thinking, critical thinking, effective communication, interpersonal relationship, self-awareness, empathy abilities, the ability to cope with emotions, and the ability to deal with stress.

At the end of the intervention, questionnaires on parenting style, life skills, and general health were completed again by participants in both groups. After a psychologist analyzed the results, the relevant data was entered into SPSS software, and the means of dependent variables were compared by independent t-test at a significance level of 0.05.

Exclusion from the Study

During the course of the training, 8 participants withdrew from the study: 4 due to their illness or that of a family member, 2 due to the death of a family member due to Covid-19, and 2 left the project due to cancellation. After concluding the course, 3 participants were excluded due to incomplete questionnaires, and after the data was analyzed, 2 other participants were excluded due to incorrect scores.

Results

In this study, the confounding parameters of the two groups were first examined and then compared, based on the data regarding mother's age, mother's level of education, father's level of education, father's role, socioeconomic level, family type, city of residence, number of children, child's age, child's gender, order of birth, accompanying disorders of the child, hearing loss, and type of hearing aid. No significant difference was found between the two groups in the age of mothers; only the comparison of fathers' levels of education showed a significant difference. Fathers in the parenting group had a higher level of education than those in the life skills group (Tables 1, 2).

Table 3 shows the standard deviation from the mean. As seen in Table 3, within-group comparison revealed that mothers in the parenting education group who scored higher than 23 in general health before training showed significant improvement in depression scores after

Table 3: Comparison of scores of variables within subgroups pre- and post-intervention

Group	Subgroups	N	Phase	GHQ total score		Physical factor score		Anxiety factor score		Social factor score		Depression factor score	
				Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
GHQ total score <23	Parenting	15	Pre	14.67	4.894	4.2667	2.96327	3.6667	1.58865	6.1333	1.59762	0.4667	0.63994
	Life skills	15	Pre	15.73	5.007	3.6000	1.91982	4.4667	3.24844	6.4667	1.45733	1.2000	1.42428
	Parenting	15	Post	17.60	6.162	4.8667	3.31375	4.0000	2.17124	6.4667	1.50555	1.2667	1.62422
	Life skills	15	Post	11.47	4.357	3.6000	2.41424	3.1333	2.55976	3.9333	1.57963	0.8000	0.77460
GHQ total score >23	Parenting	8	Pre	35.00	4.408	10.0000	1.77281	11.8750	3.83359	7.8750	1.64208	5.2500	2.54951
	Life skills	6	Pre	34.17	10.008	8.6667	4.41210	9.8333	3.65605	9.0000	4.33590	6.6667	2.06559
	Parenting	8	Post	20.38	12.200	4.8750	2.64237	7.2500	5.82482	5.3750	3.24863	3.2500	2.96407
	Life skills	6	Post	24.00	15.479	6.3333	6.15359	7.1667	3.65605	6.1667	4.79236	3.3333	2.87518

GHQ: General health questionnaire

Table 4: Comparison of mothers' scores in GHQ and its factors pre- and post-intervention within subgroups

Group	Subgroups	N	Phase	GHQ total score		Physical factor score		Anxiety factor score		Social factor score		Depression factor score	
				Z	P value	Z	P value	Z	P value	Z	P value	Z	P value
GHQ total score >23	Parenting	15	Pre	-1.595 ^a	0.111	-0.717 ^a	0.473	-0.197 ^a	0.843	-0.862 ^a	0.389	-1.997 ^a	0.046
			Post										
GHQ total score >23	Life skills	15	Pre	-3.180 ^b	0.001	-0.070 ^b	0.473	-1.727 ^b	0.084	0.004	0.004	-1.292 ^b	0.196
			Post										
GHQ total score <23	Parenting	8	Pre	-2.383 ^b	0.017	-2.388 ^b	0.017	-2.035 ^b	0.042	-1.472 ^b	0.141	-2.546 ^b	0.011
			Post										
GHQ total score <23	Life skills	6	Pre	-1.490 ^b	0.136	-0.943 ^b	0.345	-1.581 ^b	114	-1.897 ^b	0.058	-1.490 ^b	0.136
			Post										

GHQ: General health questionnaire

Table 5: Comparison of the mothers' scores in GHQ and its factors pre- and post-intervention between the subgroups

Group	Subgroups	N	Phase	GHQ total score		Physical factor score		Anxiety factor score		Social factor score		Depression factor score	
				Z	P value	Z	P value	Z	P value	Z	P value	Z	P value
GHQ total score >23	Parenting	15	Post	-2.682	.007	-0.900	0.368	-1.387	0.166	-3.523	0.000	-0.527	0.598
	Life skills	15											
GHQ total score <23	Parenting	8	Post	-0.582	.561	0.000	1.000	-0.524	0.600	-0.065	0.948	-0.131	0.896
	Life skills	6											

GHQ: General health questionnaire

training (P<0.05). Moreover, mothers in the life skills training group whose general health score was higher than 23 before training showed a significant change in mental health scores after life skills training (P<0.05), which can be explained by the improvement in the social factor subgroup (P<0.05).

As can be seen in Table 4, mothers in the parenting group whose general health score was higher than 23 exhibited a significant change in the general health score after parenting education (P<0.05). This significance is attributable to the improvement in mothers' conditions in somatic health variables (P<0.05), anxiety (P<0.05), and depression (P<0.05). As further shown in this table, mothers in the life skills group whose general health score was higher than 23 showed no change after training.

Intergroup comparison (between the two groups of parenting and life skills) revealed results after the post-test in favor of the group of mothers who received life skills training (Table 5).

In the life skills group, mothers whose general health score was higher than 23 had better and, therefore, significant scores (P<0.05). This significance is

attributable to the improvement in the social factor subgroup scores (P<0.01). In other cases, as shown in Tables 3 and 5, no change was observed.

Discussion

The present study is innovative in terms of group matching and considering various confounding factors in the group of studies on mothers with children with hearing impairment. Considering the online implementation of training workshops simultaneous with the peak in prevalence of Covid-19 all over the world which has increased the stress and anxiety levels of mothers and children, it is probable that these unique and unprecedented conditions have affected the results of the current research.

This study has shown that compared to mothers of children with hearing impairment who received parenting education, mothers of children with hearing impairment who were exposed to life skills education showed a significant improvement in mental health in the social factor (P<0.01), which had a significant effect (P<0.05) on overall mental health.

After parenting education, mothers whose general health scores were below 23 (meaning better in their general health) showed a significant reduction in the depression factor ($P<0.05$). In mothers who received a general health score above 23 (which means a poorer state of health), parenting education compared to life skills training had a significant effect in the somatic ($P<0.05$), anxiety ($P<0.05$), and depression ($P<0.05$) factors. Moreover, the score of general health ($P<0.05$) had a significant effect.

The results indicate that parenting education for mothers of children with hearing impairment has had a significant effect, as anxiety and depression were significantly reduced in these mothers. Thus the positive effects of this education are confirmed in this study.

Ashori and Ghafourian studied the effect of positive parenting education on the relationship between mothers and their deaf children and concluded that positive parenting education significantly reduced somatic symptoms and anxiety and improved their interpersonal and psychological relationships [18], which is consistent with the results of the current study.

Pakzad et al. examined the effect of mothers' education based on the positive parenting model on the symptoms of deaf students' behavioral disorders and concluded that such education reduced their deaf child's behavioral disorders, and thus, it could be used as an effective interventional method [30]. The current research confirmed the results of Pakzad et al.

Abbaszadeh et al. studied the effectiveness of parenting education on mental health and the parent-child relationship in mothers of deaf children and reported that early intervention improved maternal mental health [31].

Movalalli et al. studied the effectiveness of parenting education on the mental health of families with children with hearing impairments. The results showed that educating parents on parenting styles significantly reduced somatic symptoms as well as interpersonal and psychological anxiety. Therefore, positive parenting education is an effective program for the mental health of mothers with deaf children and should be promoted [16].

The present research showed that parenting education increased the quality of life and reduced anxiety and depression levels in mothers of children with hearing impairment, which in itself improved and increased the level of the general health of mothers. With the mentioned education of mothers, children with hearing impairment are likely to experience improved levels of verbal development and have reduced behavioral disorders.

Conclusion

The current research showed that parenting education increases the quality of life of mothers of children with hearing impairment, and the positive effects of this education have been confirmed.

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