Comparison of the Effectiveness of Parenting Training 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 and its effect on the mothers of these 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 do this research. Educational interventions have been approved for prevention of unwanted effects between mother and child. One of these interventions is a positive parenting program. This educational program seeks to create a useful relationship between mother and child. Another life skills training intervention enables life skills to cope.

Methods

This study was a randomized clinical trial. The research sample consisting of 46 mothers who have child 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 in mothers with children with hearing impairment has significantly reduced anxiety and depression.

Conclusions

This research showed that parenting education has increased the quality of life of mothers with children with hearing impairment and the positive effects of this education are confirmed.

Trial registration:

IRCT20201014049023N1. Registered 23 October 2020, https://www.irct.ir/trial/51623

Introduction

The global outbreak of Covid-19 has affected everybody's daily life (1). Also, many viral infections have emerged in the world, which has affected the World Health Organization and millions of people around the world (2); the rapid spread and epidemic of the coronavirus, which killed many people in two months, shows the strength of the virus (3). In addition to endangering the physical health of humans, the virus imposes irreversible psychological effects on human societies and causes anxiety, especially in affected countries (4). Separation from loved ones, feelings of uncertainty, fear about getting sick, restricted freedom, and feeling bored are some of the effects of home quarantine that can have significant effects in some cases. People in quarantine are afraid of the consequences of this infectious disease. They experience boredom, loneliness, and anger (5). In addition, due to home quarantine, it is not possible to attend community services and enjoy psychological support and rehabilitation (6). In the meantime, home quarantine and the closure of educational institutions are affecting children's lifestyle patterns due to less physical activity, more TV watching, and changes in bedtime. Such negative health effects are exacerbated when children are deprived of activities outside the home and interaction with their peers during an outbreak (7). Therefore, due to social distancing to help eliminate this disease, the authorities put virtual education on the agenda as the main challenge and concern. International institutions and organizations such as the World Health Organization and UNICEF have also been forced to develop curricula and educational guidelines for these crises (8).

Hearing impairment is one of the most common sensory disorders in children. Hearing impairment reduces hearing and thus impairs the development of speech and language skills (9–12). Therefore, a child's hearing impairment puts a lot of stress on parents (13–15). More than 95% of hearing-impaired children are born to hearing parents (1). In such cases, the expectations that hearing parents have of a hearing-impaired child are often similar to those of a hearing-impaired child. However, there is no harmony between the expectations of hearing parents, especially the mother, and the reactions of a hearing-impaired child. This disrupts the parents' relationship with the deaf child (16).

Among the family members, the mother is the first person with whom the child has a relationship and is considered the centre of health or illness (17). 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 (18). Therefore, if these unpleasant consequences are not resolved logically, it will cause irreparable damage to the psyche of the mother and family (19, 20).

In this regard, the results of studies show the important role of parents in reducing and preventing child behavioural problems and in developing interventions in this field (14, 15, 21). In general, the parenting style of parents is one of the most important factors affecting the psychosocial development of children (22). The Triple P – Positive Parenting Program was established at the University of Queensland, Australia as a family behavioural intervention aiming at altering children's behavioural problems and improving family environments that maintain and reinforce the child behavioural problems (23). In designing this program, social learning methods such as parent-child interaction models, family-child behaviour therapy, applied behaviour analysis, parenting development research, and child psychological pathology as well as social information data processing models

and social and public health perspectives have been used (24). This program, which is considered the most comprehensive support program in the field of parenting, 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 behavioural, developmental, and emotional problems in children (25).

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 behavioural abilities of children. Previous research has shown that a positive parenting program reduces parental stress through parenting skills (26). It also reduces disorders such as depression, anger, anxiety, and high levels of stress in parents (27).

In the study of Ashori and Ghaforian, which examined the effect of positive parenting education on the relationship profile of mothers and hearing-impaired children, it is shown that parenting education leads to improving the profile of parents with deaf children (21).

In another study, 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 the somatic symptoms, anxiety, and interpersonal relationships (18).

Everyone faces problems and obstacles in the course of life that may change his/her quality of life, but the way he/she deals with problems is very different. Some people lack the necessary abilities and skills in facing life problems, and this makes them vulnerable to depression. Having resources and skills helps people cope with their problems in the best possible way (28). Life skills are psychosocial abilities for adaptive and effective behaviour that enable individuals to cope effectively with the needs and challenges of everyday life. The life skills training program is based on the components of life skills of the World Health Organization, including ten skills; decision-making ability, problem-solving ability, creative thinking ability, critical thinking ability, effective communication ability, interpersonal relationship ability, self-awareness ability, empathy ability, ability to deal with emotions, and ability to deal with stress (29). These skills help people in times of intense stress develop the abilities, information, attitudes, and skills necessary for 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 more correctly. This increases adaptation and consequently acceptance of conditions, thus reducing stress. Therefore, these trainings cause appropriate changes in attitudes and values, strengthen behaviours appropriate to health problems and barriers, promote mental health, and enable people to face the life's problems. Consistent with these findings, research also shows that life skills training is a useful intervention and an effective way to improve the self-efficacy for childcare (30–32).

The study of Kakavandi et al. was conducted to evaluate the effect of life skills training on the quality of life of mothers with hearing-impaired children. The results showed that life skills training caused a significant improvement. The scores include somatic health, mental health, social relationships, and quality of life (33).

Khooshab et al. conducted a clinical trial on 52 mothers with blind children. This study was a non-blinded randomized controlled trial. The results of this study showed that a life skills training program can significantly reduce 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 the mothers of blind children (34).

Therefore, according to the above points, the purpose of this study was 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 virtually.

Methods

The present study was a randomized clinical trial (RCT), with two groups of parallel and 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 (code: IR.SUMS.MED.REC.1399.369). Also, while pointing out the confidentiality of the participants' information, they have given written consent to participate in the research.

The study population was all the mothers with hearing-impaired children under training at the Family Rehabilitation Center in Soroush, Shiraz.

Criteria for inclusion of mothers in the study were: 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 about confounding variables about each participant was collected through performing interviews, referring to the child's file, and completing 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 and divided into two groups (group A including 29 subjects and group B including 28 participants) using a table of random numbers.

Then, the relevant data were 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 was observed at the baseline between the two groups. Therefore, the two groups had the same conditions at the baseline concerning the confounding variables.

Also, to collect data related to the study-related variables, including the mother's general health status, authoritative parenting style, careless parenting style, authoritarian parenting style, and life skills, first the authors sent the relevant questionnaires to be completed by the mother. Then the data were analysed by a psychologist. In this regard, the mother's general health status was determined using the GHQ questionnaire, the mother's parenting style was determined using the PSDQ questionnaire, and life skills were determined using the life skills questionnaire. Then, the relevant data were 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 at the baseline between the two groups. Therefore, the two groups were in the same status at the baseline concerning the dependent variables. (Tables 1, 2)

In the next step, the type of intervention in each group was determined randomly, which was the intervention assigned to group A being through parenting education and the intervention assigned to group B being through life skills training. Using the Kiddie Schedule for Affective Disorders and Schizophrenia-Present version (KSADS-P) in a psychiatric interview by the centre'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 through a short questionnaire of Robinson, Parenting Styles and Dimensions Questionnaire – short form (PSDQ), which was validated in the Iranian population and its reliability and validity were confirmed. The data obtained from this questionnaire were entered into SPSS software. This questionnaire consists of 32 items that cover questions related to all three styles of authoritarian, authoritative, and permissive parenting (12 questions regarding the authoritative style, 15 questions regarding the authoritarian style, and 5 questions regarding the permissive style). For each question, 5 options are designed (1. Never, 2. Sometimes, 3. Almost half of the time, 4. Many times, 5. Always); for each option, a score equal to its number is considered. For analysis of the data of this the questionnaire, at first, the questions were separated according to parenting style; after calculating the score for each style, they were entered into a comparative analysis.

Life Skills Questionnaire

The life skills of mothers participating in the group were assessed through the life skills questionnaire of Saatchi et al. Its validity and reliability were confirmed, and the data of this questionnaire were 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 general health questionnaire. The validity and reliability of this questionnaire has already been confirmed in Iran, and the relevant data were 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.

Due to the implementation of this project during the Covid-19 pandemic and as a result of the impossibility of holding a face-to-face workshop, the training course was held in the form of a virtual workshop online via WhatsApp due to its no-cost, availability, ease of use, and popularity among mothers.

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

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

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

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

Parenting training workshop

Parenting education was done through the Triple P - Positive Parenting Program, in which parents were introduced to parenting techniques, designed by professors at the University of Queensland in Australia, 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 held based on the life skills components of the World Health Organization, including ten skills: decision-making ability, problem-solving ability, creative thinking ability, critical thinking ability, effective communication ability, interpersonal relationship ability, self-awareness ability, empathy ability, the ability to cope with emotions, and stresses.

At the end of the intervention, questionnaires on parenting style, life skills, and general health were completed again by participants in both groups. After analysing the relevant data by a psychologist, these data were 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, 8 participants withdrew from the study, 4 of them due to their illness or that of a family member, 2 people due to the death of a family member due to Covid-19, and 2 people left the project due to cancellation. After completing the course, 3 participants were excluded due to uncompleted questionnaires, and after analyzing the data, 2 participants were excluded due to incorrect scores.

Results

In this study, first the confounding parameters were examined and compared between the two groups, based on the data on the 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. There was no significant difference in the age of mothers in the two groups of life skills and parenting, and only the results of comparing the level of education of fathers were significantly different: the fathers of the parenting group had a higher level of education than that of the life skills group (Tables 1, 2).

Table 4 shows the standard deviation from the mean. According to Table 5, in within-group comparison, in the group of mothers who had a score higher than 23 in general health before training, after parenting education there was a significant improvement in the depression score ($P < 0.05$). Also, in the group of mothers whose general health score was higher than 23 before training, after life skills training a significant change was observed in mental health score ($P < 0.05$), which was due to the change and improvement in the social factor subgroup ($P < 0.05$). As can be seen in Table 5, in the parenting group whose general health score was higher than 23, the change in the general health score of mothers after parenting education was significant ($P < 0.05$). This significance was due to the improvement of mothers' condition in somatic health variables ($P < 0.05$), anxiety ($P < 0.05$), and depression ($P < 0.05$).

In the life skills group whose general health score was higher than 23, the mothers' general health score was better and therefore significant ($P < 0.05$). This significance was due to the improvement in the score of the social factor subgroup ($P < 0.01$). In other cases, as shown in Tables 4 and 6, no change was made.

Discussion

The present study is innovative in terms of group matching and considering various confounding factors in this group of studies on mothers with children with hearing impairment. Due to the online implementation of training workshops and simultaneously with the prevalence of Covid-19 and its high peak in the world as well as in our country, which has increased the level of stress and anxiety of mothers and children, it is probable that these unique and unprecedented conditions have had an effect on the results obtained in this research.

The results obtained in this research have shown that in the group of mothers with children with hearing impairment who were exposed to life skills education compared to mothers who received parenting education, there was a significant improvement in mental health in the social factor ($P < 0.01$), which had a significant effect ($P < 0.05$) on the overall mental health.

After parenting education in mothers whose general health scores were below 23 (meaning better in their general health), there has been 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 had a significant effect in the somatic factor ($P < 0.05$), anxiety factor ($P < 0.05$) and depression factor ($P < 0.05$), and finally the general score of general health ($P < 0.05$) had a significant effect.

Therefore, these results indicate that the effect of parenting education in mothers with children with hearing impairment has been significant, and these results indicate that parenting education in mothers with children with hearing impairment has significantly reduced anxiety and depression in these mothers. Thus the positive effects of this education are confirmed in this study.

The study conducted by Ashori and Ghafourian on positive parenting education on the relationship between the mothers and deaf children concluded that positive parenting education significantly reduced somatic symptoms and anxiety, and their interpersonal and psychological relationships also improved (21). Therefore, the results of our study are consistent with this study.

The research carried out by 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 mothers' education based on the positive parenting model had an effect on reducing their deaf child's behavioral disorders and could be used as an effective interventional method (35). So, our research was to confirm the results of this study.

In another study conducted by Abbaszadeh et al. on the effectiveness of parenting education on mental health and the parent-child relationship in mothers of deaf children, the effect of early intervention to improve maternal mental health was investigated and confirmed(36) .

Movalalli et al. carried out a study on the effectiveness of parenting 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 positive parenting training should be promoted (18).

In this regard, the present research showed that parenting education increased the quality of life and reduced the level of anxiety and depression of mothers with children with hearing impairment, which in itself improved the general health of mothers and increased the level of general health. Children with hearing impairment are likely to improve the level of verbal development and have reduced behavioural disorders through the mentioned education.

Declarations

Ethics approval and consent to participate

Informed consent was obtained from each patient participating in the study, and the research protocol was approved by the Ethics Committee of Shiraz University of Medical Sciences, Shiraz, Iran.

Consent for publication

Not applicable

Availability of data and materials

Not applicable

Competing interests

The authors have no competing interests to report.

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Authors' contributions

Sara Dehbozorgi, Somaye Yazdani, Mohammad Majid Oryadi-Zanjani, Maryam Vahab, and Mohamad Nikandish conceived and planned the experiments. Somaye Yazdani carried out the experiments. Sara Dehbozorgi, Somaye Yazdani, Mohammad Majid Oryadi-Zanjani, and Maryam Vahab contributed to sample preparation. Sara Dehbozorgi, Somaye Yazdani, Mohammad Majid Oryadi-Zanjani, Maryam Vahab, and Mohamad Nikandish contributed to the interpretation of the results. Mohammad Majid Oryadi-Zanjani and Sara Dehbozorgi took the lead in writing the manuscript. All authors provided critical feedback and helped shape the research, analysis and manuscript.

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Tables

Table 1
Comparison of the scores of the quantitative variables within the subgroups in baseline

Variables	Parenting		Life skills		P-value
	Mean	S.D	Mean	S.D	
Mother_age	33.63	5.57	30.77	4.95	0.073
Child_age	52.25	14.29	50.95	15.71	0.772

Table 2
Comparison of the scores of the qualitative variables within the subgroups in baseline

Variables	subgroups	Parenting		Life skills		P-value
		Frequency	Percent	Frequency	Percent	
Academic_mother	Under diploma	3	12.25	3	13.6	1
	Diploma	9	36.75	8	36.4	
	Post diploma	12	50	11	50	
Academic_father	Under diploma	1	4.2	6	27.3	0.027
	Diploma	8	33.3	10	45.5	
	Post diploma	15	62.5	6	27.3	
SES	Poor	3	12.5	3	13.6	1
	Moderate	19	79.2	17	77.3	
	Good	2	8.3	2	9.1	
Child_sex	Boy	11	45.8	9	40.9	0.774
	girl	13	54.2	13	59.1	
Children_number	One	11	45.8	13	59.1	0.696
	Two	10	41.7	7	31.8	
	Tree	3	12.5	2	9.1	
Children_order	First	12	50	14	63.6	0.648
	Second	10	41.7	7	31.8	
	Third	2	8.3	1	4.5	
Comorbidity	Yes	6	25	4	18.2	0725
	No	18	75	18	81.8	
HL_severity	Mild	4	16.7	2	9.1	0.57
	Moderate	2	8.3	4	18.2	
	Severe	18	75	16	72.7	
HA_CI	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	
Living_lacation	Shiraz	13	54.2	8	36.4	0.253
	Other city	11	45.8	14	63.6	
Father_role	Positive	19	70.2	15	68.2	0.605
	Null	5	20.8	6	27.3	
	Negative	0	0	1	4.5	

Table 3
Comparison of the scores of the variables within the subgroups pre intervention

Group	Subgroups	N	Phase	GHQ total score		Physical factor score		Anxiety factor score		Social factor score		Depression factor score	
				Mean	S.D	Mean	S.D	Mean	S.D	Mean	S.D	Mean	S.D
<23	Parenting	15	Pre	14.67	4.894	4.2667	2.96327	3.6667	1.58865	6.1333	1.59762	.4667	.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
>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

Table 4
Comparison of the scores of GHQ and its factors post-intervention within the subgroups

Group	Subgroups	N	Phase	GHQ total score		Physical factor score		Anxiety factor score		Social factor score		Depression factor score	
				Mean	S.D	Mean	S.D	Mean	S.D	Mean	S.D	Mean	S.D
<23	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	.8000	.77460
>23	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

Table 5
Comparison of the mothers' scores in GHQ and its factors pre- and post-intervention within 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
<23	Parenting	15	Pre	-1.595[a]	-1.595[a]	-.717[a]	.473	-.197[a]	.843	-.862[a]	.389	-1.997[a]	.046
			Post										
	Life skills	15	Pre	-3.180[b]	.001	-.070[b]	.473	-1.727[b]	.084	.004	.004	-1.292[b]	.196
			Post										
>23	Parenting	8	Pre	-2.383[b]	.017	-2.388[b]	.017	-2.035[b]	.042	-1.472[b]	.141	-2.546[b]	.011
			Post										
	Life skills	6	Pre	-1.490[b]	.136	-.943[b]	.345	-1.581[b]	114	-1.897[b]	.058	-1.490[b]	.136
			Post										

Table 6
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
<23	Parenting	15	Post	-2.682	.007	-.900	.368	-1.387	.166	-3.523	.000	-.527	.598
	Life skills	15											
>23	Parenting	8	Post	-.582	.561	.000	1.000	-.524	.600	-.065	.948	-.131	.896
	Life skills	6											