

## **Effectiveness of group training program relevant to stress management on the quality of life and its dimensions using a cognitive- behavioral approach in mothers of children with Autism**

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### **Abstract**

**Introduction:** Children with autism may experience unique adverse effects, which result in social restrictions and high stress in the parents, especially the mother. This research aims to determine the effectiveness of group training program relevant to stress management on improvement of quality of life and its dimensions (mental health, physical health, social adjustment, and environmental health) in the mothers of children diagnosed with autism in educational centers in Ahvaz.

**Materials & Methods:** This research is a quasi-experimental kind of study with both pre-test and post-test stages. The research sample consisted of 24 mothers of children with autism. The sample was selected using available sampling method. Randomly the individuals in the sample were categorized into two experimental and control groups. The research tool was Gilliam Autism Rating Scale (GARS), Demographic Check List of World Health Organization Quality of Life Questionnaire (WHOQOL-BREF). The experimental group participated in 8 sessions of group training program whose duration lasted for 2 hours. Then, they were assessed by the Quality of Life Questionnaire. Then, the data were analyzed by analysis of covariance using SPSS software version 16.

**Results:** The results indicated that group-training program relevant to stress management has positive effects on quality of life and its dimensions (including physical health, mental health and social communication) in mothers of children with autism. However, this program had no effect on improvement of environmental health, which is one dimension of quality of life.

**Conclusion:** Group-training program relevant to stress management is effective on improving the quality of life of mothers of children with autism by increasing their knowledge and controlling the stressful situations.

**Keywords:** Group training program, Stress management, Cognitive – behavioral approach, Quality of life, Mothers. Autism.

### **Introduction**

Autism is a pervasive developmental disorder. Approximately 15-10 cases per 10,000 children are diagnosed with this disorder (1). In recent years, so many researches were conducted on the detection and diagnosis of this disorder. This issue was studied from clinical view as well (2 and 3). This disorder causes a lot of stress on the family, especially the mother, due to special characteristics

relevant to diagnosis of this disorder as well as its peculiarities. This disorder causes diverse range of disorders including language, communication and social disorders. Delayed and difficult diagnosis of this disorder and emergence of symptoms after a normal course of child development, lack of definitive and effective treatment, unfavorable prognosis has also caused a lot of stress on the family, especially the mother (4). The researchers

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conducted on this issue showed that the parents, especially the mothers, experience high levels of depression consequently after the time the child is diagnosed disability (5). Angirson and Hambrick stated that depression and stress of the parents, especially the mothers, is related to coping strategies, the intensity of the children's disorder and social support (6). Social relationship of the parents with peers has decreased; as a result, their social support has decreased as well due to following reasons: stress of the parents caused by labeling the children and the family, due to disability of the children; blaming the mother for emergence of this disorder; comparing the child with this disorder with normal children (7). Mac et al suggested that the parents internalize social tags internally in the absence of support from family, friends and experts, and lack of self-control for blaming themselves. As a result, this issue causes serious damage to psychological well-being of the parents as well (8). Myers et al in a study conducted on the parents of children with autism indicated that stress, child behavior, personal dissatisfaction from working and marital relationships and separation from the community are considered as the important factors, which affect the quality of both individual and familial lives of the parents (9). According to WHO, the quality of life of the individuals is defined as the recognition the individuals gain from their position in their lives in terms of their culture, value systems in which they live, goals, expectations, standards, and priorities (10). The parents with autistic children, especially the mothers, are constrained to seek occupational and educational goals and priorities because they should spend a lot of time and energy to take

care of their autistic child. As a result, their individual expectations and standards would not be realized and this issue consequently affects their quality of life (11). The quality of life includes four domains including mental health, physical health, social health, environmental health. Each domain of quality of life affects the mothers of autistic children both by internal and external (environment) stressors. Many studies emphasized on the effect of educational interventions of group training of the parents with autistic children, which improves the quality of life of both the parents, and their children (12-14). Roberts et al in a study compared three groups of children with autism. In the first group, educational intervention and programs was only conducted on the children. In the second group, educational intervention and programs was conducted on both children and the parents. In the third group, there was no educational intervention and programs. The results of this research indicated that social and communication skills as well as the stress issue and quality of life of the parents and autistic children were better in the second group compared to the other groups (13). Flipeck and Steinberg - Epstein expressed that although the occurrence of behavioral changes in verbal and nonverbal skills, stereotyped behavior and social skills in children with autism are difficult, educational interventions has a dire effect on the quality of life of parents and their children (14). Rivien suggested cognitive - behavioral therapy for anxiety and stress management of the children with autism and their parents. He stated that this issue is an important factor in improving the mental health of children with autism and their parents (15). It also should be noted that mothers of

autistic children might participate in group-training sessions relevant to cognitive - behavioral stress management. In these sessions, an intimate and professional atmosphere is created in which a variety of relaxation, visualization techniques as well as other techniques for reducing anxiety are taught to the parents using normal cognitive - behavioral approaches such as cognitive restructuring, coping effectiveness training, assertiveness training and anger management. The stress management program is designed in order to deal with issues such as loss of personal control, coping demands, social isolation, anxiety and depression. All these issues are evident in the individuals who face chronic and severe mental and physical diseases (16). This research aims to study the effectiveness of group-training program relevant to stress management on quality of life and its dimensions (mental health, physical health, social adjustment, and environmental health) using cognitive-behavioral approach in the mothers of children diagnosed with autism.

### **Materials and Methods**

This study was a quasi-experimental kind of study with pre-test and post-test stages. In this study, a control group was added as well in order to compare the results obtained from analysis of variables of the research in both control and treatment groups. The statistical population of this study included the mothers of autistic children who enrolled in educational institutions in Ahwaz. In order to select the sample, an available sampling method was used by which 24 mothers of children with autism were selected. These selected individuals volunteered to participate in the

study proving that they were eligible for the study according to the criteria of the study. Randomly the individuals of the sample were divided into equal numbers in two experimental group (under stress management therapy) and control group. The criteria of the study on which the eligibility of the individuals to be included in the study was determined included following criteria: maximum age of the eligible individuals should be 40 years old while minimum age of them should be 25 years old; the eligible individuals should at least have cycle degree (due to active and participatory nature of stress management training program, it is essential for the individuals to be educated so that they may be motivated and have the ability to identify the thoughts and emotions and understand the applied approach as well); no history of psychiatric disorders in the psychiatric wards; no history of taking any certain medication; obtaining a score within 80 and 120 regarding Gilliam Autism Scale score (in order to match the severity of autism in the children); the age range of the children should be between 7 and 11 years old; average economic status (for creating a same level of welfare, which may directly or indirectly influence the quality of life of the mother). Demographic measures included the mother's age, education, medication, the children's age and the level of income of the family.

The Quality of Life Questionnaire (WHOQOL-BREF) was designed by World Health Organization as a multidimensional and multilingual tool in order to assess the quality of life, which can be used in various cultures. It contains 26 questions. Each question is assessed by a 5-point Likert scale. The first two questions do not assess any of the domains

and only assess the health status and quality of life in general. In this questionnaire, the four dimensions of physical health, psychological health, social relationships and environmental health are measured by 24 items. Each dimension includes respectively 7, 6, 3, 8 questions. After performing the necessary calculations, a score within 4 and 20 may be obtained. The score 4 shows the worst state of the domain under study while the score 20 indicates the best status of the domain under study. This score can be converted to a score whose range is from 0 to 100 (17). The results of the study conducted by Nejat et al showed acceptable reliability and validity of structural factors of this tool in both healthy and patient group (18).

Gilliam Autism Rating Scale is used to assess and measure the severity of autism of the children. This test is a valid test, which was developed by Gilliam in 1995. It is suitable for the individuals aged from 3 years old to 22 years old. This can be filled out by parents at home and by professionals at school. It includes 4 subscales and each subscale contains 14 items. The first subscale is stereotyped behavior, which consists of 1 to 14 items. The second subscale is establishing communication, which includes 15 to 28 items. The third subscale is social interactions, which includes 29 to 42 items. The fourth subscale is developmental disorders, which includes 43 to 56 items (18).

In the study conducted by Schopler et al, the reliability of this test was obtained as 0.94 using Cronbach's alpha coefficient (19). In the study conducted by Ahmadi et al, the Karez questionnaire was used in order to evaluate the structural validity of the questionnaire. The correlation coefficients of these two

questionnaires were obtained as 0.08. The reliability of this scale was estimated as 0.89 using Cronbach's Alpha coefficient (20). The training sessions consist of 8 sessions. These sessions were held once a week for 2 months in the training centers whose duration lasted for 90 minutes. In beginning of the training courses, the mothers were asked to fill out the quality of life questionnaire (pre-test). At the same time, members of the control group filled out the questionnaires as well. Then, the members of both groups were asked to fill out the questionnaire again two months after the sessions were held (post-test). Group sessions were held with presence of a clinical psychologist trained in this field. The content of the training sessions were as follows: 1 - Introduction Session and familiarity with stress management program; 2 - Teach relaxation, control breathing and diaphragmatic breathing; 3 - Visualization of pleasant scenes; 4 - The Mantra meditation techniques and self-assessment of anger; 5- Expressive-oriented relationship with others and receiving positive feedback; 6- Identifying negative thoughts about the vision of community on having a child with autism; 7 - Practicing identification of negative emotions and controlling them with relaxation techniques; 8-The termination session of termination and performing weekly tasks and individually continuing the program (16). Then, the collected data of the research were analyzed using descriptive statistics (frequency, mean, standard deviation) and inferential statistics (analysis of covariance) and SPSS software version 16.

### **Ethical Considerations**

Participants enrolled in the study with full consent. They could freely choose to not

participate in the study at every stage of the research. The principle of secrecy was considered thoroughly for every individual who enrolled in the study. The individuals participating in the study were assured that their personal data would be protected and no financial or physical loss would endanger them.

### **Results**

The age range of the mothers was from 26 years old to 40 years old. The mean and standard deviation of this variable was  $28.95 \pm 5.21$ . The age range of the children was from 7 years old to 10 years old. The mean and standard deviation of this variable was  $9.21 \pm 1.92$ . The level of education of the mothers was cycle degree and diploma degree. The highest frequency of this variable was 8 for cycle degree and 12 for diploma degree. The intensity of autism disorder of the children (with the mean and the standard deviation as  $101.10 \pm 15.19$ ) was considered as the demographic characteristic of the sample. The results of ANOVA analysis of the variance of statistical hypotheses showed that both the hypothesis of equality of variances (using Levine's test) and the hypothesis of normality (using Shiperovick test) are accepted ( $p \leq 0.05$ ). Considering the fact that the individuals in both experimental and control groups are equal to 12 ( $n=12$ ). Then, the analysis of covariance can be conducted. The mean and standard deviation of the quality of life and its four domains (including mental health, physical health, social adaptability and environmental health) in both pretest and posttest

stages in both control and experimental groups are presented in Table 1.

The results of covariance analysis and the effectiveness of group training program relevant to stress management on quality of life at post-test stage are shown in Table 2. There was a significant difference between the subjects of both control and experimental groups regarding the quality of life variable in  $p \leq 0.095$  level of significant. Therefore, group-training program relevant to stress management had a significant effect on the quality of life of mothers of children with autism. The effect size was 13% and the test power was 0.38.

The results of covariance analysis and the effect of group-training program relevant to stress management on the domains of quality of life (mental health, physical health, social adaptability, and environmental health) at posttest stage are presented in Table 3. There were significant differences between the subjects of both experimental and control groups in terms of mental health, physical health and social adaptability variables in the following significant levels ( $p \leq 0.22$ ), ( $p \leq 0.072$ ) and ( $p \leq 0.329$ ). Thus, group-training program relevant to stress management is effective on increasing mental health, physical health and social adaptability of mothers of children with autism. The effect sizes were 7%, 15% and 4%, respectively. The test powers were respectively 0.225, 0.439 and 0.159. On the other hand, there is no significant difference between experimental and control groups in terms of environmental health in  $p \leq 0.538$  level of significance. Therefore, group training of stress management has no effect on enhancing the environmental health in mothers of children with autism. The effect size was 1% and power of the test was 0.290.

**Table 1: The mean and standard deviation of quality of life and its four domains including mental health, physical health, social adaptability and environmental health at both pretest and posttest stages in both experimental and control groups**

Variable	Group	Pretest		Posttest	
		Mean	Standard deviation	Mean	Standard deviation
Quality of life	Experiment	45.91	4.54	47.58	4.1
	Control	45.58	2.96	44.58	3.57
Mental health	Experiment	11.25	1.65	12.166	1.64
	Control	11.33	1.55	11	1.57
Physical health	Experiment	12.58	1.2	12.57	1.21
	Control	12.08	1.37	11.83	1.64
Social adaptability	Experiment	10.41	0.99	10.08	1.08
	Control	10.50	1.24	10.25	1.42
Environmental health	Experiment	11.66	1.07	12.58	1.24
	Control	11.66	1.23	11.5	1.38

**Table 2: The results of analysis of covariance and the effect of group-training program relevant to stress management on the quality of life at posttest stage**

Variable	Source of changes	Degree of freedom	Sum of squares	F	Level of significance	The effect size	The test power
Quality of life	Treatment	1	7.244	3.075	0.095	0.133	0.386
	Error	20	47.115				

**Table 3: The results of analysis of covariance and the effect of group-training program relevant to stress management on domains of quality of life**

Variable	Source of changes	Degree of freedom	Sum of squares	F	Level of significance	The effect size	The test power
Mental health	Treatment	1	52.81	1.59	0.22	0.07	0.225
	Error	20	10.633				
Physical health	Treatment	1	1.509	3.599	0.072	0.153	0.439
	Error	20	8.385				
Social adaptability	Treatment	1	0.502	1	0.329	0.045	0.159
	Error	20	10.047				
Environmental health	Treatment	1	0.094	0.393	0.538	0.019	0.029
	Error	20	4.774				

## **Discussion**

The main objective of this study was to determine the effectiveness of group-training program relevant to stress management on quality of life and its dimensions (including mental health, physical health, social adaptability, environmental health) using cognitive - behavioral approach in mothers of autistic children in educational centers in the city of Ahwaz.

The results of this study showed that this kind of therapy results in increasing the quality of lives of the individuals of the experimental group compared to the control group. This paper attempted to teach the mothers of autistic children various techniques to challenge their automatic negative thoughts and attitudes about having a child with autism using group-training program. It also tried to teach the mothers certain techniques for the purpose of progressive muscle relaxation by group-training program. It also attempted to increase their awareness and knowledge about social support, make them familiar with this concept, and help them to visualize it. It should be noted that the mothers could gain these techniques from their surrounding environment as well. The mothers with autistic children can overcome their internal and external stressors using these techniques; as a result, they can increase their mental health, physical health, social and environmental adaptability. The results of this study are in line with those obtained in the studies conducted by Roberts et al and Steinberg-Epstein (13, 14).

Moreover, the effectiveness of group training-program relevant to stress management on improving the quality of life has also been shown in some other groups of

women diagnosed with breast cancer as well as men with prostate cancer (21).

Other results of this study regarding various dimensions of quality of life indicated that this intervention program enhance mental health, physical health and social adaptability of the mothers of children with autism. However, this had no effect on environmental adaptability of them. This intervention program has an important effect on improving the mental health and social adaptability of mothers of children with autism by controlling the stress of the mothers using various cognitive - behavioral strategies. It also increases their awareness of social support and creates appropriate environment for group training. These factors result in the fact that these mothers may have positive attitude and thinking about their physical health and strength. The results of this study are in line with those obtained by Raven, Mac et al (8, 15).

Lin et al stated that social support plays an important role in welfare of the mothers of children with autism spectrum disorders and family adaptation of these mothers in the two cultures of Taiwan and United States (22). Moreover, in the study conducted by Riahi et al, it was shown that supportive therapy and cognitive - behavioral stress management plays an important role on mental health of mothers of children with autism (23). Green et al stated that familiarity of the parents with using the Internet to increase the awareness of the mothers of children with autism play an important role parents' treatment for the children with autism in. It can also be considered as an effective factor in environmental adaptability by increasing awareness of the mothers; as a result, it may

improve quality of life (24). Perhaps lack of effectiveness of group training program relevant to cognitive - behavioral stress management in environmental health of the mothers of children with autism may be due to following issue: A few Iranian families have an access to transport facilities, financing, residential satisfaction, possible recreational activities, access to the required information, environmental health, access to health services, etc. As a result, stress management as an internal stress control factor in the mothers play a minor role in the control of maternal extrinsic factors (environmental health). This issue justifies lack of effectiveness of group training program relevant to stress management training on environmental health dimension quality of life. In fact, stress management program provides some strategies to improve the techniques used for coping with stress in mothers of children with autism. This has an important impact on their quality of life as well. This study studied small number of subjects. This limitation does not provide the possibility to generalize the results to community. A few numbers of researches were exclusively conducted on the quality of life of mothers of children with autism. Thus,

it is suggested that this project be implemented on a larger sample size, so that the data can be generalized to community. Moreover, the group-training program relevant to stress management should be conducted on all family members of the children with autism (the father, the siblings).

### Conclusion

The results of this study indicated that group training interventions relevant to stress management plays an important role in enhancing the quality of life and mental health, physical health and social adaptability of mothers of children with autism using cognitive - behavioral therapy. This program helps them manage this crisis and cope with the stressors resulting from this crisis. Therefore, it is recommended that this method be used in clinics by mental health professionals.

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