



Effect of stress inoculation training on coping styles and psychological well-being status of mothers with mental retard children

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Abstract

Mental retardation is one of the most significant problems of human society among children and adolescents. It puts families, especially mothers, under a lot of stress and threatens their mental health. The initial purpose of this study was to determine the effect of stress inoculation training on coping styles and psychological well-being status in women who have children with mental retardation. In this quasi-experimental study, 30 participants were randomly were selected by simple sampling method that were assigned into the experimental and control groups. The statistical population comprised the mothers who have children with mental retardation at the training center. Ryff scales of psychological well-being and coping inventory for stressful situations and psychological well-being scale were implemented before and after the stress inoculation training (presented only for the experimental group in eight sessions). The results of the statistical analysis showed that the training increased the problem-oriented coping style and decreased the avoidant and emotional coping styles. Thus, the results demonstrated that stress inoculation training was effective in stress coping and improving psychological well-being in mothers. According to the obtained finding, psychological well-being scores in the experimental group were remarkably different from those in the control group. Based on these results, it is recommended for the experts in the field to use stress inoculation training to decrease stress and enhance psychological well-being of mothers.

Keywords: Children, Psychological, Stress, Inoculation

Introduction

Mental retardation (MR) in children is one of the most important acute problems in human communities. The previous studies have illustrated that increasing stress can be seen in mothers with mentally disabled children. The increasing stress in families can cause absence

of healthiness due to growth retardation, and need for particular and specific facilities including physical and treatment cares and training necessities. The family problems such as frustration, unfulfilled wishes and dreams, tolerating the others' speaking about

it, feeling of shame and hiding the child, the limitations in the activities and financial problems are other sources of stress on the family with mentally retarded children, which especially affect the mothers [1]. The role of mothers is of great importance because they are in contact with their children all of the time. Moreover, compared to fathers, they are more familiar with the physical and mental status of their children. Therefore, there is the possibility that Mothers are more exposed to stress and reduced mental well-being. They usually face with various behavioral disorders that include their primary problem is in the care of their children. It is a necessity to take proactive measures and behavioral treatment in this regard.

The family is one of the fundamental pillars of institutions of any society. Any disorder in family members can disrupt the whole family activities, and it can cause new problems in the family. There are many problems in such families, including the intensification of retardation and various challenges in the children that deprive them of having a healthy environment for achieving an optimum growth and finally create a vicious cycle in the family environment. The mothers due to unreasonable pressure caused by high anxiety and stress may feel that they have to spend their all life on taking care of their sick children. In the meanwhile, they may be suffering from neglect or even illness in physical, mental, or social aspects [2-4].

Stress is one of the most important issues in psychological and mental health care fields. It has been proven that the stress is the causing of many pains, discomforts, and diseases [5]. Stress is defined as a negative emotional experience that is accompanied by biochemical, psychological and behavioral changes. The either of these changes is intended to change the stressful event or its effects. In another form, stress can be considered as a physiological response [6,7]. Lazarus believes that the stress reactions not only involve physiological changes, but it is also found in Movement-Behavioral disorders (such as hand tremors,

speech disorders), emotional distress, and cognitive malfunctions [5]. The way that a person copes with stress noticeably affects his or her adaptation and mental health. This topic is considered under stress coping styles in everyday life of people. Numerous definitions have been proposed regarding the concept of stress coping styles. However, the overall meaning of the stress refers to “the way the individual approaches the stressful situation and incident, dominates the situation, and reduces or eliminates the damages and harms occurring as a result of the stressful situation [8,9]. According to what has been stated by Endler & Parker, there are three Emotion-oriented, Problem-oriented, and Avoidant-oriented stress coping strategies [8]. In problem-oriented stress coping strategy, one concentrates on the problem that creates stress and then tries to react and perform activities optimally in line with the elimination or reduction of the experienced stress. Problem-oriented behaviors regarding these stress coping strategies include searching for information on the location and problem-solving skills. This method of coping with stress is the most adaptable method for stress management. In contrast, in the emotion-oriented strategy, the individual focuses on changing one’s emotional reaction by self-control. Also, the person tries to reduce the intensity of the unpleasant feelings and negative emotions associated with the stressful situation. An emotion-oriented behavior can include crying, getting angry and getting upset, dreaming, and mental preoccupation. The avoidant -oriented stress coping strategy refers to choosing your behavior based on trying to avoid dealing with a stressor and the individual stays away from stressful situations. Avoidant -oriented stress coping behaviors may involve turning to a new activity and being engaged in it or resorting to a social event and other individuals [9-11]. The studies have shown that the type of the stress coping strategies selected by a person affects individual’s mental health and

psychological well-being [12].

Various definitions have been offered regarding the mental health these consist of an absence of physical and psychological illness, enjoying of life, creating a balance between life activities and psychological resilience, social adaptability, and the feeling of comfort, personality integrity, self-recognition, and having knowledge of the environment among other similar definitions. Mental health is one of the main issues in psychology well-being that can affect the family and society growth and maturity. There is a conceptual confusion about mental health currently. However, two general concepts can be regarded in the mental health. In The first concept, mental health is considered as the knowledge of preventing from mental diseases in three levels including preventing from the disease occurrence and fighting with the pathogenic factors in the prime level, reducing the disease prevalence through rapid anticipation and timely treatment of the diseases in the second level, and mental disease rehabilitation in the third level. In the second concept, the opinion of mental health goes beyond the absence of disease, and it approaches to the aspects of evolutionary, positive, and constructive in the human mind. Some psychologists regarding the concept of mental health focus more on the multidimensional definitions of the healthy psychological performance. For the first time in 1989, Ryff presented a multidimensional definition of the mental well-being comprising six important components of the positive psychological performance including self-acceptability, establishing positive relationships with others, self-autonomy, environmental mastery, purposeful life and personal growth [13,14]. Among the latest developments obtained in methods of psychological treatment, Cognitive - Behavioral Therapy (CBT) is a psychosocial intervention that it is the most widely used. Based on Donald Meichenbaum treatment method, stress inoculation training on coping stress emphasizes on the preventive aspect rather than treatment. Learning coping skills especially getting versatile and skillful

in negative self-talks identification in highly stressful situations has been greatly emphasized in such a method and the patients learn how to overcome their stress in the stressful situations. The principles of stress inoculation training suggest that the individual should change their beliefs and behaviors regarding the stressful behaviors and also change self-talks concerning the ways of coping with stress [15-17]. This method is based on the idea that individual experiences anxiety resulting from incompatibilities in the pressures, and he/she needs to be provided with the sources and facilities to handle the pressures. Stress inoculation training includes instructional strategies, cognitive reconstruction based on Socrates discussions, problem-solving, tranquil teaching, and the practice of the mental and behavioral imaging, self-review, self-control training, self-education, and taking measures in line with imposing changes on the periphery. The results of many studies have shown that such training measures are effective in reducing the individuals' stress and controlling negative emotions like anger [18-20].

The human being is exposed to various kinds of psychological pressures in his entire lifetime. Although stress and tension is a normal part of the life, in cases in which stress or tension is intensive or it lasts for a long period, it can severely harm the person's health. The presence of a mentally retarded child in a family imposes a highly intense stress and psychological pressure on the family members especially the mothers with respect to mental health. Therefore, considering the importance of investigating mentally retarded children's community, who are competent and capable of receiving instructions from parents and officials and being useful in society, and considering the important role of mothers in child rearing, it is necessity to evaluate the mental health status of the mothers of this group of children. According to above, the aim of the present study was to determine effect of stress inoculation training on the stress

coping styles and the psychological well-being of mothers with mentally retarded children.

Method

This study was a quasi-experimental research utilizing pretest-posttest design with a control group. The statistical population included 60 mothers with mentally retarded children who referring to the center training in Qaen city, 2014. Accordingly, 30 mothers with mentally retarded children were selected by random sampling. Then, they were assigned into two experimental and control groups (15 mothers as controls and 15 as experiments). In previous experimental studies, the experts and specialists in psychological fields have announced that the optimal size of the sample should be at least 15 participants per each group [21]. The inclusion criteria included being a mother with a trainable mentally retarded child in the family, willingness to participate in the study, non-consumption of the psychologically prescribed medicines particularly sedatives and anti-anxiety drugs, no history of intensive somatic diseases and difficult-to-treat diseases and psychological conditions. Furthermore, the exclusion criteria included not responding to all of the questions inserted in the questionnaire, absence in instructional sessions, the individual's withdrawal from continuing with the study, diagnosis of certain diseases and hospitalization.

To achieve the research objectives and gain access precise and accurate results were used from the tools:

1) *Coping Inventory for Stressful Situations (CISS)*: Development of the questionnaire for the assessment of the stress coping strategies in stressful situations (such as problem-oriented, emotion-oriented, and avoidant-oriented stress coping strategies) was conducted by Endler & Parker [22]. This questionnaire contains 48 items that have been designed to evaluate three subscales (16 items on the problem-oriented style, 16 on the emotion-oriented style, and 16 on the avoidance style). The answers are rated on a 5-point Likert scale from never (1) to very much (5) [23]. The studies conducted by Endler

& Parker as well as those undertaken in Iran indicate that CISS has a high capability in measuring coping styles in stressful situations. The reliability coefficients of test are reported about 92%, 90%, and 90% for problem-oriented, emotion-oriented, and avoidant-oriented stress coping strategies, respectively [15]. In Iran, Shokri et al. have reported the Cronbach's alpha coefficient of problem-oriented, emotion-oriented, and avoidant-oriented stress coping subscales as 0.75, 0.82, and 0.73, respectively [24]. According to their study, the Cronbach's alpha coefficient of this questionnaire to determine the reliability was obtained as 0.68, 0.68, and 0.66 for problem-oriented, emotion-oriented, and avoidant-oriented stress coping styles, respectively.

2) *Ryff Scales of Psychological Well-Being (RSPWB)*: The psychological well-being scale (PWB) (developed by Carol Ryff in 1989) was created at Wisconsin University. To maximize the perfect coordination and the fitness between the measurement tool and the theoretical model, Ryff developed a new one. The objective of this questionnaire was to utilize six factors extracted from the previous theories. They were inserted into the psychological well-being model proposed by Ryff. The test contains 84 questions in six factors including self-acceptance, establishing a positive relationship with others, self-autonomy, environmental mastery, targeted life, and personal growth. In this test, subjects respond to the questions on a 6-point scale scored from completely disagree to completely agree. Some of the questions are directly scored, and the others are inversely scored.

In direct scoring, the score of 1 is given to an answer of "completely disagree", 2 to some disagree, 3 to relatively disagree, 4 to some agree, 5 to relatively agree, and the score 6 to completely agree. The correlation of this scale with the index of the satisfaction of life in range of 0.26 to 0.73, Rosenberg's self-esteem scale from 0.29 to 0.62, and Zung's depression scale between -0.33 and -0.60 has been reported [25-27].

In Iran, was obtained the whole scale reliability coefficient as 0.82. Also, the values were 0.71, 0.77, 0.78, 0.77, 0.70, and 0.78 for the subscales of self-acceptance, establishment of the relationship with others, self-autonomy, environmental mastery, targeted life, and personal growth, respectively [28]. In the present study, we used Cronbach's alpha coefficient to determine the reliability which generated the coefficients of 0.81, 0.67, 0.88, 0.65, 0.78, and 0.65 for the subscales of positive relationship with others, self-autonomy, environmental mastery, personal growth, targeted life, and self-acceptance, respectively.

After developing the questionnaire, researcher received cooperation letter of the management of Qaen education organization for Shaghayegh school. Then, the study procedure was explained and the invitation letters were distributed in order to voluntary participation in the instructional sessions. Finally, the voluntaries were informed about the time and place of the sessions by the school's manager.

In the first session, all participants completed Coping Inventory for Stressful Situations and psychological well-being scale, before taking any interventional program. Then, mothers were divided into two control and experimental groups. In the control group, no intervention was presented. This study was conducted on mothers and the probability of the relation of sample mothers with a lack of knowledge from each other was low. However, in order to ensure further, the Shaghayegh instructional center authorities were asked to conduct no meeting with mothers during the stress inoculation training. After the pretest, eight instruction sessions were hold for the mothers in the experimental group. One month later, the posttest was carried out in another session in which the questionnaires were completed to determine the effect of the stress inoculation training on the mothers. The follow-up stage was performed after three months. The objectives were presented in eight two-hour sessions on stress inoculation training as follows:

Table 1 Objectives, contents, and training materials presented during the sessions of stress inoculation training

Sessions	Objectives, Contents, and Training materials presented during the sessions
First	Getting familiar with the instructional sessions objectives, getting acquainted with the principles and the objectives of the stress inoculation plan, the role of families in developing and preserving the family members health
Second	Stress nature, stress definition and mental health and mental retardation and the objectives of treating the mothers' stress and the factors causing disorders in families with mentally retarded children
Third	Stress signs and symptoms, types of stress, knowing stress rate and intensity in various life situations
Fourth	Teaching the necessary skills in managing stress such as self-awareness and effective relations
Fifth	Evaluating the role of positive and negative thoughts and beliefs in the emergence of mental pressure
Sixth	The role of the thoughts and cognitions in the expression of stress and diminishing the mental health, investigation of factors that are effective on the differences in the stress occurrences with varying rates in different individuals
Seventh	Stress coping styles
Eighth	Methods of recovering after a period of stress

To analyze the data after conducting the tests, statistical tests) including paired-t, independent t-tests, and covariance analysis) were used in SPSS-19 software. Before using these tests, Kolmogorov-Smirnov test was carried out in each group and the results indicated the normal distribution of data ($p > 0.05$). Additionally, before the test of multivariate covariance analysis, the homogeneity of variance assumption was examined that its results have been shown in the

covariance analysis section. In this work, $p \leq 0.05$ was chosen as the significance level.

Results

The results of differential paired t-test are presented in Table 2 regarding (problem-oriented, emotion-oriented, and avoidant-oriented) stress coping strategies of mothers as a sample of study before and after taking interventional measures in both groups (control and experimental).

Table 2 Comparison of mean coping styles of mothers before and after the intervention in both experimental and control groups and in the posttest and follow-up in the experimental group

Coping Style	Group	Pretest		Posttest		Paired t-tests	Posttest-Follow up		Paired t-tests
		Mean	SD	Mean	SD		Mean	SD	
Problem-Oriented	Experiment	47.77	13.15	56.50	8.48	p=0.008	0.000	0.26	T=1.000
	Control	48.69	13	47.30	8.31	p=0.55			Df=29
	Independent t-tests	p=0.79		p=0.001					p=1.000
Emotion-Oriented	Experiment	48.24	10.82	43.67	9.51	*p=0.0001	0.1000	0.40	T=1.36
	Control	49.63	11.19	48.27	8.59	*p=0.56			Df=29
	Independent t-tests	p= 0.63		p=0.05					p=0.18
Avoidant-oriented	Experiment	49.13	10.60	43.10	8.05	p=0.0001	0.13	0.43	T= 1.68
	Control	49.27	9.44	47.47	5.70	p=0.44			Df=29
	Independent t-tests	p= 0.95		p= 0.02					p=0.10

Table 2 indicates that stress inoculation training enhanced the problem-oriented stress coping strategy and reduced avoidant-oriented and emotion-oriented coping strategies in the mothers with mentally retarded children. The findings of this table confirmed the first study hypothesis that stress inoculation training is effective in coping with stress by giving $p < 0.01$. Also, it is shown that there were no difference between the scores of problem-oriented, emotion-oriented, and avoidant -oriented stress coping styles by giving ($p = 1.000$, $t = 1.000$), ($p = 0.18$, $t = 1.36$),

and ($p = 0.10$, $t = 1.68$), respectively. After implementing inoculation training in the experimental groups in two stages of posttest and follow-up by using correlated t-test, mothers showed no significant difference. This indicates that the effect of training on mothers' stress coping styles has been continuously effective. In the Table 3, the comparison of mean scores of mothers' psychological well-being before and after the intervention in the experimental and control groups have been presented by using differential paired t-test.

Table 3 The Comparison of mean scores of psychological well-being of mothers in the pretest and posttest in the two groups and at posttest-follow-up in the experimental group

Group	Pretest		Posttest		Paired t-tests	Posttest- Follow up		Paired t-tests
	Mean	SD	Mean	SD		Mean	SD	
Experiment	331.38	27.80	344.77	21.62	p=0.005	0.05-	0.23	T=1.11
Control	307.21	33.02	271.39	21.35	p=0.0001			Df=29
Independent t-tests	p=0.08		p=0.0001					p=0.28

The results of Table 3 also illustrate that stress inoculation training has been effective in enhancing psychological well-being of the mothers with mentally retarded children ($p < 0.01$). Therefore, the second hypothesis indicating that the stress inoculation training is effective in the enhancement of the psychological well-being of the mothers with mentally retarded children is confirmed ($p < 0.01$). However, data of this table show that mean and standard deviation of the

mothers' psychological well-being scores in two groups in the post-test and follow-up stages are not significantly different by using paired-t statistical tests ($p = 0.28$, $t = -1.11$). It suggests the positive effect of stress inoculation training in the increase of mothers' psychological well-being status in the time interval between the posttest and follow-up. The effects of the stress inoculation training on the six components of psychological well-being in the mothers with

mentally retarded children have been given in Table 4 under the title of peripheral findings. To accurate assessment of this issue, multivariate covariance analysis was used, while slopes homogeneity assumption was examined before doing this analysis. Results showed that such assumption can be completely held true for all of the components except self-acceptance component ($p>0.05$). The relevant data suggest that there is no significant difference between slopes in functional levels regarding

the components of establishing positive relationship with others ($p=0.43$, $F=0.87$), self-autonomy ($p=0.43$, $F=0.33$), environmental mastery ($p=0.45$, $F=0.82$), personal growth ($p=0.07$, $F=2.88$), and targeted life ($p=0.13$, $F=2.14$). The results of the differential paired t-tests for the components such as self-acceptance demonstrated that the stress inoculation training positively affects this component among the mothers with mentally retarded children.

Table 4 Results of covariance analysis posttest scores after controlling for pretest scores in the components of positive relationships with others, autonomy, environmental mastery, personal growth and purpose in life among participants

Components	Source of Changes	Total of squares	Degree of freedom	Mean squared	F	P
Positive relationships with others	Pretest	8.78	1	8.78	0.19	0.67
	Group	3294.13	1	3294.13	70.52	0.001
	Error	2242.23	48	46.71		
Autonomy	Pretest	5.44	1	5.44	0.12	0.73
	Group	73.37	1	73.37	1.60	0.21
	Error	2198.48	48	45.80		
Environmental mastery	Pretest	0.003	1	0.003	0.0001	0.99
	Group	5873.79	1	5873.79	123.21	0.001
	Error	2288.29	48	47.67		
Personal growth	Pretest	115.71	1	115.71	3.92	0.05
	Group	1290.44	1	1290.44	43.68	0.001
	Error	1418.17	48	29.54		
Purpose in life	Group	4091.52	1	4091.52	138.60	0.001
	Error	1416.96	48	29.52		

The results given in Table 4 display that there is a significant difference between the posttest scores obtained for the components including establishing a positive relationship with others, environmental mastery, personal growth, and targeted life in the experimental group and those in the control group (by moderating the pretest effect).

Thus, it was found that stress inoculation training has a positive effect on the components such as positive relationships with others, environmental mastery, personal growth and targeted life among mothers with mentally retarded children. However, a significant difference was not found between the experimental and control groups in the self-autonomy component (by moderating the pretest effect). Therefore, stress inoculation training had no impact on the self-autonomy

of mothers with educable mentally retarded children.

Discussion

The aim of the current study was to assess effect of stress inoculation training on coping styles and psychological well-being status of mothers with mentally retarded children. The first hypothesis was that stress inoculation training is effective on the stress coping styles of mothers with educable mentally retarded children. The results of the present study indicated that the control and experimental groups were not different in their choice of stress coping style before inoculation training; but after the training, the participants in the experimental group by acquiring knowledge on the stress coping styles promoted their levels of problem-oriented stress coping strategies and

reduced the other two stress coping strategies (Avoidant and emotion-oriented strategies). The difference between control and experimental groups was statistically significant. The results obtained at follow-up stage had the same trend. The obtained findings in the current study were consistent with some previous studies in the area [16, 18, 29, 30-32, 43]. It seems that mothers who passed training on coping skills have been able to deal with stress instead of feeling helpless or blaming their own and others for the problems, think about positive and constructive actions in coping with stress. This training, rather than those strategies such as hand doing nothing and negative internal dialogue that usually increases their anxiety, worry, and distress, may help them increase their capabilities and use problem-oriented strategies to solve their problems.

The findings of the present study proved the second hypothesis that the stress inoculation training is effective in the psychological well-being of mothers with educable mentally retarded children. The results of the present study indicated that the individuals in the control and experimental groups were not much different much in their psychological well-being status before getting exposed to stress inoculation training but after training, it was found that the psychological well-being scores increased in the experimental group. These results are consistent with the findings obtained in various studies [33-36]. To interpret the finding of the present study, it seems that stress inoculation training is able to reduce stress in mothers and significantly increase positive performance of psychological, or in other words, psychological well-being that in turn can increase the components such as self-acceptance, positive relationships with others, environmental mastery, personal growth and having purposeful life; these mothers may have been able to control and reduce negative thoughts creating stress, and increase positive attention to themselves; this training can help them acquire a realistic recognition of their own abilities, provide them with the context of incidence (self-actualization) and targeted planning in life (Purpose in life), enable them to strive for success and further progress in life,

and create positive attitude towards themselves (self-acceptance). Under such circumstances, the individuals' capabilities will be increased in selecting or creating appropriate environments fitting their needs and mental characteristics (environmental mastery) and the individual finds higher levels of inner peace, and he/she will find more opportunity to create positive relation with others (positive relationships with others) by increased energy and motivation and positive emotions. In the current study, it was found that stress inoculation training has no effect on the mothers' self-autonomy, possibly indicating that this component had no significant changes during training courses. The mothers' feeling of conformity and social scales may have acted more robustly with respect to their internal scales and beliefs in spite of the training courses received.

Conclusion

The results of the present study indicated that the mothers exposing to stress inoculation training were able to think positively and constructively in coping with stress rather than feeling frustration or reprimanding their own and the others in the face of problems. In light of these training courses, they have been probably able to enhance their capabilities and use problem-oriented strategies to eliminate their problems instead of doing nothing or engaging in negative self-talks, followed usually by anxiety, distress, and concern. Although researchers of this study have made their effort to carry out the current study with maximum precision as possible in performing the analysis, the current study still seems to have some limitations. This study conducted on few numbers of the mothers with mentally retarded children in the city of Qaen. The participation of female subjects and limited information resources were other limitations. According to the restrictions mentioned, some suggestions are presented for future research. We hope that these recommendations are considered by experts in the area of mental health. It is recommended to conduct similar studies by selecting larger population (at the

province and county levels) and the interference of different factors such as gender is examined. Therefore, it is suggested to use other methods to collect data. Conducting similar studies on subjects with different economic and social status and comparing the results of the studies are also useful. In order to prevent stress, it is proposed to use stress inoculation training methods alone or along with similar psychological consultations. Furthermore, it is recommended to emphasize the characteristics of individual resistance against stress (feelings of stress control, commitment, responsibility and challenging) in stress inoculation training sessions.

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Contribution

Study design: JT, ZM.

Data collection and analysis: JT, ZM, SS

Manuscript preparation: SS, JT, ZM

Conflict of Interest

"The authors declared that they have no competing interests".

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