The effectiveness of the resiliency training on the perceived stress and coping strategies of the mothers of the children with autism

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Summary

Aims: This study is conducted in order to evaluate the effectiveness of the resiliency training on the perceived stress and coping strategies of the mothers of the children with autism.

Materials and Methods: This study is quasi-experimental with the pretest-posttest design and the control group. The population of this study is consisted of all of the mothers of the autistic children who are aged between 3 to 10 years old and received services at the Tehran Autism Center in 2018. The study sample is consisted of 30 mothers who were selected by the convenient sampling method, and were randomly assigned into the study (15 people) and control (15 people) groups. The Coping with Stressful Conditions Scale of Endler and Parker (1990) and the Perceived Stress Scale of Cohen et al. (1983) were used in order to collect the data. The Resiliency training was given to the study group in nine sessions, and each session lasted for one hour. The SPSS-22 statistical software was used for the data analysis.

Results: The results of this study showed that the intervention (the resiliency training) improved the problemfocused coping strategies in the study group (P <0.05). It also reduced the perceived stress, and the emotionfocused, and avoidance coping strategies (P <0.05). However, there was no significant difference between the pre-test and post-test in the control group.

Discussion and Conclusion: Totally, it can be concluded that the resiliency training plays an effective role in the management of the stress in the mothers of the autistic children.

resiliency training, perceived stress, coping strategies

INTRODUCTION

The Autism spectrum disorders refer to all of the disorders in the pervasive developmental category that encompass a wide range of the functional severity and deficiency. The children with autism have difficulty with verbal and nonverbal communications, social behaviors and playing games, and they have stereotyped and repetitive behaviors [1]. This disorder is one of the most difficult and unknown childhood disorders. It is likely that multiple biological causes, along with the influence of psychosocial factors, lead to a wide range of the abnormal behaviors in the people with autism. The current statistics show the prevalence of 0.5 to 1 percent of this population in each society. Autism is found to be equal in both genders, but it is 3 to 4 times more common in boys than in girls [2]. The features of this disorder, as well as the late

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and difficult diagnosis in some cases, the lack of definitive and effective therapies and the unsuitable prognosis, can impose severe psychological stress on the children's family and parents [3]. Studies show that the parents of the children with autism spectrum disorders, due to having a disabled child, are more likely to be subjected to the psychological stress and anxiety than the parents of the children with other psychological disorders [4]. The mothers of the sick children are more likely to have the behavioral problems than the fathers, and they have the high perceived stress [5]. The perceived stress is a set of emotions or thoughts that a person has at a given time in order to experience the different kinds of stress [6]. The presence of a disabled child threatens the mother's compatibility and physical and mental wellbeing and often has a negative impact on her [7]. In fact, the destructive and abnormal behaviors of the children are considered as the main source of the stress for the parents of the autistic children, especially the mother [8]. Studies have also shown that the mothers of the children with autism are more likely to experience stress and anxiety than the mothers of the children with other chronic diseases [9]. Studies have shown that in addition to the stressful status of the situations and conditions, the coping style of the person with those conditions can have a significant impact on the perceived stress [10]. The stress coping strategies are divided into the two efficient and inefficient categories. Accordingly, the effective and organized coping strategies have the long-lasting and positive consequences. Therefore, the stress is reduced by the individual's efforts, which leads to the improvement of the level of the self-esteem and skill of the person, and also ensures the person's health. At the same time, the person becomes more resistant to the stressful factors that may happen in the future [11]. Lazarus and Folkman (1987) believe that if people find the stressful situations to be manageable, they will use the problem-focused coping strategy and thus they will have a better mental health, otherwise they will turn to the stress-focused coping strategy and their mental health will be seriously endangered. Coping with the stress requires informedbased effort. The informed-based stress management should not be confused with the defensive mechanisms. Even the coping strategies should

not be considered as the same as the concept of compatibility. Compatibility has a more generalized and broader meaning and it encompasses the different ways of dealing with the problem. The comparison of the coping strategies in different situations is not impossible, but it is very difficult [12]. The stress coping strategies are a gradual process. A person may choose one type of the coping strategy depending on the situation which is happened, and the same person may choose another coping strategy in another situation. In fact, the environmental situations and factors influence the type of the coping strategy that people choose [13].

Reynolds (2004) has found that the stress of the parents affects their coping strategies with the children's behaviors, which directly increases the children's aggressive behaviors. Given the fact that the high level of the stress in parents and the lack of the effective coping strategies have a significant impact on the children's development process, it is anticipated that the early interventions for the effective support of the children and their families will prevent the negative consequences of these disorders and lead the high energy of the families to the right direction before it becomes suppressed. One of these interventions that can alleviate mothers' stress and help them to control it is the resiliency training intervention [14]. According to Walsh (2015) resiliency is not just a passive resistance to damages or threatening conditions, but a resilient individual is an active participant and the constructor of his/her surroundings. Resiliency is the one's ability to establish a psychosocial and spiritual balance in facing with the risky situations, and is a kind of self-healing manner that is associated with the positive sensational, emotional, and cognitive consequences [15]. Resilient people have the ability to recover and ameliorate; they have optimism and intellectual flexibility; they are skilled in transforming the problems to an opportunity for learning and growth, they have perseverance, self-esteem, and a healthy support network; they are capable of developing the emotional and supernatural abilities, and they have independency in their opinion; also they have sense of humor, and capability of solving the problems and conflicts [16]. Although resiliency is partly a subject to the personal attributes, it is also a subject to the

environmental experiences of the people. Thus, human beings are not the absolute victims of the environment or heredity, and people's responses to stress, unpleasant events, and difficulties can be modified, so that they can overcome the environmental problems and negative effects [17]. Many studies have confirmed the effectiveness of resiliency on the stress and mental pressure. Noone and Hastings (2009) in a study found that developing the resiliency through creating the psychological acceptance will reduce the work stress and increase the mental health of the employees and teachers who interact with the people with intellectual disabilities [17]. Also the research of Kaveh, Alizadeh, Delavar, Borjali (2011) with the title of the compilation of the stress resiliency improvement program and the effect of resiliency training on the quality of life components of the parents with the mild mentally retarded children, indicated that the resiliency improvement program is effective on the components of the parents' quality of life [18]. Given the increasing number of the people with autism compared to the previous years and also the need of parents, especially mothers, to have the accurate and precise scientific information about the autism disorder and stress tolerance, it is necessary to conduct scientific researches and perform more precise studies to meet their needs in the society. Therefore, using a focused training program for the mothers of the autistic children can greatly help the mothers and their families. According to these claims, it can be inferred that the mothers of the autistic children experience high mental pressure and stress. The high levels of the parents' stress make them to be more inclined to use the inflexible, intimidating and aggressive ways, and have less tendency to benefit from the offered treatments and services for the children, thus they will fail in making decisions about using the most appropriate treatment strategies for their children. This issue has negative effects on the children development process and leads to the more destructive behaviors. Therefore, it is necessary to focus on empowering and educating these mothers in order to benefit from the effective coping strategies. In order to achieve this target, this study is conducted to evaluate the effectiveness of the resiliency training on the perceived stress and coping strategies of the mothers of the children with autism.

METHODOLOGY

This study is quasi-experimental with the pretestposttest design and the control group. The population of this study is consisted of all of the mothers of the autistic children who are aged between 3 to 10 years old and received services at the Tehran Autism Center in 2018. The study sample is consisted of 30 mothers who were selected by the convenient sampling method, and were randomly assigned into the study (15 people) and control (15 people) groups. After that the application was submitted to the Autism Center, the researcher installed posters in the welfare and treatment centers. The volunteer individuals that were prepared to participate in the training were divided into the two study and control groups, that each of them included 15 people, and the subjects were divided into two groups with the simple random sampling method.

RESEARCH TOOLS

Endler and Parker (1990) Coping Inventory for Stressful Situations: This test was developed by Endler and Parker in order to evaluate the coping strategies in the stressful situations. The test is useful as a form for the adults and adolescents, and it is consisted of 21 questions. Each question is rated based on the 5-point Likert scale, which includes never "1", rarely "2", sometimes "3", often "4", and too much "5". This tool measures the three problem-focused, emotion-focused, and avoidance coping strategies, and it has been formulated based on the constructs of the Endler and Parker's coping strategies theory, and its validity is confirmed by the content and construct methodologies. The set of the questions number 1, 4, 7, 9, 15, 18, and 21 measure the avoidance coping strategy, and the set of the questions number 2, 6, 8, 11, 13, 16, and 19 measure the problem-focused coping strategy. Also, the set of the questions number 3, 5, 10, 12, 14, 17, and 20 measure the emotion-focused coping strategy [19]. In Iran, Hosseini Dolatabadi Sadeghi, Saadat, Khodayari (2014) calculated the reliability of the problem-focused, emotion-focused and avoidance subscales on 20 students within 15 days, and the results were respectively, 0.77, 0.77, and 0.71 [20].

Cohen *et al* (1983) Perceived Stress Scale: This test was designed by Cohen et al. in order to measure the perceived stress. This test is consisted of 14 items and it is scored to be 0 to 4 based on the Likert point scale, and the sum of the scores on this test shows the level of the perceived stress in the students [21]. In Iran Asghari et al. (2013) conducted this test on 300 students, and calculated the internal consistency of this test to be 0.84 by the alpha Cronbach's method. Also the validity of this questionnaire has been confirmed by the factor, construct and content analyses [22].

Educational intervention

The resiliency training was given to the study group during nine sessions and each session lasted for one hour; also the curriculum summary [23]; is as follows:

Sessions	Purpose and Content
First session	Objective: the Pre-test provides guidelines for the members' participation and the description of the manner of doing the task
	Steps: 1 – Introducing the researcher, 2 – Introducing the members, 3 – Explaining the general outlines of the sessions to the members
Second session	Objective: To become familiar with the general framework of the discussion
	Steps: 1 – Defining the resiliency, and 2 – Introducing the resilient people's characteristic: (1 – Happiness 2 – Wisdom and insight 3 – sense of Humor 4 – sympathy 5-rational efficiency 6 – having goal in life 7 – Stability
	Solution: Identifying the unpleasant situations in life and improving the compatibility and tolerance in the personal area
Third session	Objective: To become familiar with the internal supporting factors
	Steps: 1 – The concept of optimism, 2 – Self-esteem and 3 – the Source of control
	Solution: Recognizing the talents and interests and emphasizing them and the tendency to use them
Fourth Session	Objective: To become familiar with the external supporting factors
	Steps: 1 – Social supporting system, 2 – personal responsibility and accepting the meaningful roles
	Solution: the feeling of attachment and being valuable and have the tendency to participate
Fifth Session	Objective: To become familiar with the ways of creating resiliency
	Steps: 1 – Establishing and maintaining relationships with others, 2 – giving frame to the different types of stress and 3 – Accepting the change
Sixth Session	Objective: the continuance of the ways of creating the resiliency
	Steps: 1 – having purpose and being hopeful for the future, 2 – taking action
Seventh	Objective: the continuance of the ways of creating the resiliency
Session	Steps: self-awareness, 2 – developing the self-esteem
Eighth Session	Objective: the continuance of the ways of creating the resiliency, and teaching the ways of taking care of the children
Ninth Session	Objective: putting it all together and reaching the conclusion, and giving the posttest

Table 1. The summary of the Resiliency Training Program

After reaching the basic agreement from the welfare organization of Tehran province, the sampling was conducted on the Tehran Autism Center. After giving the pretest, the training was given to the study group, and after conducting the intervention, the posttest was given to both groups, and the data were used for the analysis.

The SPSS-22 statistical software was used for the data analysis. In the main section, the inferential statistics and the Wilcoxon's sign-rank test for intragroup comparisons and Mann-Whitney's U test for intergroup comparisons used in order to study the research hypotheses.

Findings

At the beginning of the study, 15 people were considered for each group, and all of them have participated in the study during the research. The age mean of the mothers of the study group was 35.40 with the standard deviation of 4.65. Also, the age mean of the mothers of the control group was 37.20 with standard the deviation of 4.09. The result of the Mann-Whitney's U test has shown that the study and control groups do not have any difference in terms of the age (P=0.250, Z=-1.18, Mann-Whitney U =84). Also, the age mean of the children of the study group was 6.80 with the standard deviation of 1.65, and the age mean of the children of the control group was 6.73 with the standard deviation of 1.57, and the result of the Mann-Whitney's U has shown that the study and control groups do not have any difference in terms of the age mean of the children (P=0.806, Z=-0.254, Mann-Whitney U =106.500). Also, the mean of the marriage duration of the study group was 9.78 with the standard deviation of 2.47, and the mean of the marriage duration of the control group was 10.53 with the standard deviation of 2.79, and the result of the Mann-Whitney's U has shown that the study and control groups do not have any difference in terms of the marriage duration (P=0.744, Z=-0.355, Mann-Whitney U = 104). In fact, the variables of the age of the mothers and children and the marriage duration are not a manipulative variable, and they do not need to be controlled. The results of the Fisher's exact test showed that the participants of the control and study groups were categorized in the 4 educational levels of elementary school (up to the sixth grade), middle school (up to the ninth grade), high school (up to the twelfth grade), and B.A degree; the results of the test showed that the groups are not different in terms of the distribution of the educational level (*P*=0.823, χ^2 =0.908). In other words, there is no significant difference in both groups in terms of the distribution of the educational level. The mean, standard deviation and mean rank of the scores of the perceived stress and coping strategies scale based on the study and control groups are shown in the Table 2.

Table 2. The mean, standard deviation (SD) and mean rank of the perceived stress and coping strategies scale of the experimental and control groups in the pretest and posttest stages

Variable		Groups The time of the test		Mean	DS	Mean rank
Perceived stress		experimental	Pre-test	34.26	4.23	15.10
			Post-test	26.93	4.25	9.30
		Control	Pre-test	35.66	3.10	15.90
			Post-test	34.86	4.03	21.70
	Problem-focused	experimental	Pre-test	21.80	3.98	14.90
Coping			Post-test	31.93	2.12	16.10
strategies		Control	Pre-test	22.26	4.54	22.57
			Post-test	23.93	3.30	18.43
	Emotion-focused	experimental	Pre-test	20.73	4.97	15.07
			Post-test	13.26	3.89	8.33
		Control	Pre-test	21.20	4.67	15.93
			Post-test	23.86	3.62	22.67
	Avoidance	experimental	Pre-test	18.80	3.78	15.70
			Post-test	16.26	3.21	11.17
		Control	Pre-test	18.80	3.32	15.30
			Post-test	19.53	2.89	19.83

Due to the small sample size, non-parametric statistical tests are performed. We used the Wilcoxon's sign-rank test for intra group comparisons and Mann-Whitney's U test for intergroup

comparisons.

variable	The time of the test	Mann-Whitney U	Z	Р
Stress	Pre-test	106.500	252	.801
	Post-test	19.500	-3.872	.0001
Problem-focused	Pre-test	103.500	377	.706
	Post-test	6.500	-4.418	.0001
Emotion-focused	Pre-test	106.000	271	.787
	Post-test	5.000	-4.471	.0001
Avoidance	Pre-test	109.500	126	.900
	Post-test	47.500	126	.007

Table 3. The results of the Mann-Whitney's U test for intergroup comparisons

The results of Mann-Whitney's U test showed that there was no significant difference between the groups in the pre-test stage, but in the posttest stage there was a significant difference between the groups in stress and coping strategies variables (P < 0.05). Wilcoxon's sign-rank test was used to investigate intra group changes, and the results are presented in Table 4.

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Table 4	The results	of the	VVIICOXOD'S	sign-rank	test for int	ra droup	comparisons
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groups experimental Z		Stress Problem-focused Emo		Emotion-focused	Avoidance
		-3.411	-3.410	-3.411	-2.242
	Р	.001	.001	.001	.025
Control	Z	350	-1.007	-1.877	629
	Р	.726	.314	.060	.529

The results of Wilcoxon's sign-rank test in Table 4 indicate that there is a significant difference between the assessment steps in the experimental group in the pre-test and post-test stages (P <0.05), but there is no significant difference in the control group.

DISCUSSION

This study is conducted in order to evaluate the effectiveness of the resiliency training on the perceived stress and coping strategies of the mothers of the children with autism. The intervention reduced stress in the experimental group. This result is consistent with the studies of Naeemi and Tajeri [24], Moghtader et al. [25]; Hoseinin Ghomi and Salimi bojestani [23]; and Dipaz et al. [26]; also in the investigation of the history there was not any study to be con-

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tradicted with this study; in other words the research history supports the psychological interventions specially the interventions based on the resiliency in order to reduce the stress of the mothers of the children with autism. Although stress is considered as one of the most important factors of the advent and creation of the diseases and death of the people, the important point is related to the connection, and the manner of the response or reaction to it, which can play an important role in the person's compatibility. The resilient people usually come back to their normal status after creating positive emotions in confronting with the stressful factors. The resilient people pass the stressful conditions without the reduction of their mental health and experiencing a mental disease; also it seems that in some cases they become improved and successful because of their unpleasant experiences [27].

It seems that the resiliency training improves the psychological flexibility of the people. This characteristic increases people's compatibility with the unpleasant conditions. The people with high resiliency confront with the stressful incidents with more optimism, self-expression, and self-confidence. Therefore, they consider these incidents to be manageable. The optimistic attitude makes the information procedure to be more effective, and the person applies a more active coping strategy, and also the ability to deal with the unpleasant conditions will be empowered. The resilient people are flexible and resourceful, they adapt themselves to the environmental changes, and they can recover so fast after the obviation of the stressful factors [28]. Inzlicht, Aronson, Good & McKay (2010), who agreed with these findings, found that as a result of the resiliency process the unpleasant incidents leave fewer effects, and the high resiliency leads to the mental health [29]. In explaining these findings, reaserher believe that the resilient people have the feeling of self-confidence and efficiency that allow them to pass the life challenges with success. These people have a less feeling of failure and loneliness, and they have the ability to consider an issue as a problem to be explored, changed, tolerated, and solved in other ways; this matter and also their ability to tolerate the problems result in their positive perspective and optimism towards life. Optimism is one of the characteristics of the resilient people. Various studies have shown that the people with high resiliency maintain their psychological health in the stressful conditions and unpleasant situations, and they have psychological compatibility [30]. Carle & Chassion (2015) in their research have shown that the high levels of resiliency help the person to use the positive emotions and sensations in order to pass the unpleasant incidents and return to the normal status [31].

The results of this study showed that the resiliency training improves the problem-focused coping strategies, and reduces the emotion-focused and avoidance strategies in the experimental group. This result is consistent with the research results of Kabudi et al. [32], Babai et al [33], Park, and Han [34] and Lee, Vargo, & Seville [35]. Also in the investigation of the history there was not any study to be contradicted with this study; in other words the research history supports the psychological interventions specially the interventions based on the resiliency in order to reduce the stress of the mothers of the children with autism. In the explanation of this finding it can be said that the resiliency with the increase of the positive emotions and the reduction of the negative emotions makes it easier to confront with the unpleasant conditions of life, and increases the ability to overcome the problems, which can reduce the stress. Also the researches have shown that the ability of resiliency can help the people to experience more positive emotions [34]. The experience of positive emotions can help the mothers to have more positive interactions with their children, and as a result use the efficient and problemfocused coping strategies. Receiving the social support and consultation from others are some of the examples of the efficient and problemfocused coping strategies. The resiliency training, which includes the ways of attracting the social support, makes it possible to control the environment and have effective relationship with others, which leads the resilient people to receive more social support in the unpleasant conditions of life; therefore their stress pressure will be reduced. Receiving help and support from the other members of the family in order to take care of an autistic child and interact with him/her, gives more time to the mothers to pay attention to their own problems and therefore gives more peace to them; this will greatly help them in the reduction of their parental stress. One of the reasons of the effectiveness of resiliency on the reduction of the stress is the creation of the adaptation strategies and better defensive mechanisms in the people. The people with high resiliency confront with stressful incidents with more optimism, self-expression, and self-confidence. Therefore, they consider these incidents to be manageable. The optimistic attitude makes the information procedure to be more effective, and the person applies a more active coping strategy, and also the ability to deal with unpleasant conditions will be empowered; so the stress will be reduced. According to Woods the ability to solve the problems and the skills of solving the conflicts are mentioned as the prominent characteristics of the resilient people [36].

Mothers of these children are always worried about the future of their children and that is why they experience high levels of stress. When the mother of an autistic child learns how to organize her parental tasks and think about the future of her child with more optimism, her parental stress will be reduced. Generally, the resiliency acts like a resistant internal factor, and it helps the people to mitigate their stress with the improvement of the problem-solving ability and the person's motivation to cope with the problems [32]. In fact, the ability, which is caused by resiliency, gives the possibility to the resilient people to manage the difficult and stressful conditions of life, and also it provides the possibility of the development and positive stability for the people; as a result, it reduces the use of inefficient (emotion-focused and avoidance) coping strategies.

All of these abilities help the people to have an easier confrontation with the life conditions, so during the advent of the problems they can deal with them with solution and internal peace. Having the high problem-solving ability, experiencing the positive emotions, and the spirit of coping with the problems will help the mothers of the autistic children to have more positive evaluations about their life and their children. These factors lead to the preparation of a more efficient interaction between the mother and child, and the mother plays her parental role with more peace, and copes more easily with the stress that is imposed on her due to her parental role. Therefore, according to the research findings, the resiliency training can reduce the parental stress of the mothers of the autistic children, and this matter can indicate the importance of the development of the characteristics and abilities like resiliency in coping with the life pressures including the parental stress.

Every research is accompanied with a series of predictable and unpredictable limitations, and the identification of the limitations can help to comprehend the level of the generalization, and also provides the conditions for the future studies. One of the limitations of this study was the limited number of participants. The other limitations of this study included the low time distance between the pretest and posttest, the use of self-report method in order to collect the data, and also the lack of the follow-up period. Also, the participants of this study were the mothers of the autistic children, which have limited the generalization of the findings to the fathers. Besides, this study was accompanied with other limitations, including the age limitation (3-10) that was considered for the autistic children, and it has made it difficult to generalize the findings to the mothers of the autistic children that are in their adolescence period. The temporal and spatial limitations of the research conduction and the convenient sampling of the people were the other limitations of this study.

According to the limitations and findings of this study, it is recommended to use the other measurement methods such as interviews along with questionnaires in the future researches. The limited number of participants and also the lack of the follow-up of the stability of the intervention results were some of the other limitations of this study; therefore, it is recommended to use a bigger sample and conduct the follow-up studies in order to check the continuity of the therapeutic effects. It is recommended to conduct this study on the fathers of the autistic children. Also, according to the results of the study and the effectiveness of resiliency in the improvement of the coping strategies and the reduction of the stress, it is recommended to the consultants and psychologists of the welfare organizations to conduct these kinds of interventions in the groups for all of the families of the autistic children. In the future studies, the effectiveness of the resiliency training can be studied on the other psychological constructs such as the control source, reflection styles, and the problem-solution styles. At the end, it can be recommended to the organizations and specialists, who are in touch with the parents and families of the autistic children, to conduct the resiliency training for them to help these people to deal with the parental stress more easily. It is recommended to conduct the resiliency training for the other districts of the country and different groups. Since, resiliency is an acquisitive characteristic and its existence in people can play an important and positive role, and also the resiliency training greatly helps the people to reduce their stress, so the consultants and psychologists can use this method in their therapeutic interventions, and improve its richness and effectiveness with their own knowledge and experiences.

CONCLUSION

Totally, the results of this study showed that the intervention (the resiliency training) improves the problem-focused coping strategies in the study group. It also reduces the perceived stress and the emotion-based and avoidance coping strategies; while, no significant difference was made between the pretest and posttest of the control group. Resiliency has a protective role, because it reduces the stressful feature of the incidents and leads to the provision of the mental and physical health and calmness of the people, and also improves the ability to cope and deal with the problems. Besides, with applying the effective and active coping strategies, the possibility of becoming infected by the mental and physical diseases that are related to the stress and behavioral and functional weaknesses will be reduced.

One of the reasons of the effectiveness of the resiliency training on the reduction of the stress is the creation of the strategies of confrontation and better defensive mechanisms. Resiliency is related to the efficient and useful confrontation strategies. Also one of the reasons and explanations of the effectiveness of the resiliency intervention is that most of these interventions change the comprehension style of the people. On the other hand, the team training can have a positive effect on the reduction of the mental pressure, because the gathering of the people in groups and seeing that others have similar problems and using each other's experiences to cope with the problems are effective on the reduction of the stress and improvement of the self-belief. In fact having and empowering the characteristics of the resilient people such as the dependency and creativity of thought, optimism, persistence and perseverance, sense of humor, and the ability to solve the problems and conflicts can help the people specially the mothers of the autistic children, so they could use these efficient and effective coping strategies to reach the suitable status and become improved.

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