



Original Article

The effectiveness of schema therapy on distress tolerance and resilience of mothers with mentally retarded students

Tahereh Rahat Dahmardeh¹; *Mahmoud Shirazi²; Ali Arab³

¹Department of Psychology, Zahedan Branch, Islamic Azad University, Zahedan, Iran.

²Associate Professor, Faculty of Educational and Psychology, Department of Psychology, University of Sistan and Baluchestan, Zahedan, Iran.

³Assistant Professor, Faculty of Educational and Psychology, Department of Psychology, University of Sistan and Baluchestan, Zahedan, Iran.

Abstract

Introduction: The existence of a mentally retarded child in a family leaves negative and irreversible effects on parents, particularly mothers. The purpose of the study was to examine the effectiveness of schema therapy on distress tolerance and resilience of mothers with mentally retarded students.

Materials and Methods: In this research, 30 mothers of mentally retarded students, studying in exceptional students in districts 1 and 2 of Zahedan, Iran in 2020, were chosen using the convenient sampling. Then, they were assigned randomly to two control and experimental (schema therapy-based) groups. In the next step, all participants filled out Distress Tolerance Questionnaire and CD Resilience Scale (Connor-Davidson), and the experimental group received eight 2-hour sessions of schema therapy-based training. The Control group received no intervention during the study. The collected data were analyzed through SPSS22 software by using descriptive indicators, univariate and multivariate ANCOVA.

Results: The results showed the significant effect ($P < 0.05$) of schema therapy on distress tolerance and resilience so that this therapy could expand distress tolerance and resilience of mothers.

Conclusion: According to the obtained results, schema therapy can be recommended as an efficient method to increase distress tolerance and resilience in mothers who have mentally retarded students.

Keywords: Distress tolerance, Mentally retarded, Mothers, Resilience, Schema therapy

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Introduction

Mental retardation is a disorder manifested in childhood and characterized by under-average intellectual functioning (IQ under 70) (1). Mental retardation is defined as a disability or deficit in intellectual functioning, adaptive behavior, and practical, social, and conceptual skills that occur before the age of 18 (2). In This case, mothers are

more vulnerable than other family members are (3). The most important reason is that mothers spend longer time with children as they are present in the home and family more than fathers are (4). Anxiety and mental pressure imposed on mothers of disabled children cause many problems in the parenting role (5). Moradikia et al. (6) found that 76.7% of mentally disabled

*Corresponding Author:

Faculty of Educational and Psychology, Department of Psychology, University of Sistan and Baluchestan, Zahedan, Iran.

mahmoud_shi@yahoo.com

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children's mothers had severe mental problems, and 61.7% suffered from intensive social problems, while 55% and 38.3% of fathers experienced moderate mental issues mild social problems, respectively (7).

Reduced distress tolerance level is one of the essential psychological symptoms seen in families having disabled children and manifested in the ability to analyze psychological situations (8). According to systemic theories of the family, the behavior of each family member influences the behavior of others (9). Distress tolerance is a person's resistance to negative mental situations and experiences. Because mothers of mentally retarded children experience stressful events and continual anxiety situations, resilience can serve as a factor or construct adapting them with such situations (10). Resilience is an attribute that helps individuals to cope with traumas and achieve adaptation and growth (11).

Schema therapy has been effective for mothers of exceptional children with mental retardation (12). Schema therapy is a new and integrated treatment that provides a systematic program for evaluating and modifying early maladaptive schemas, and it is based on classical cognitive-behavioral therapy (13).

Schemas are formed in early life, affecting a person's whole life (14). Schema therapy is effective in the psychological welfare of deaf children's mothers (15), depression symptoms, and resilience (16), increasing satisfaction and quality of life (17). Seyf Hosseini, Asadi et al. (18) showed that schema therapy training and mindfulness-based stress reduction programs on resilience had significant changes in the experimental groups within the research process. Moreover, Yavari et al. found a significant relationship between schemas, including rejection and abandonment, impaired limits, other-directedness, and life expectancy of mentally retarded children's mothers (14). Various therapies have been used to improve different components of mental health of mentally retarded children's mothers, including cognitive-behavioral methods (19), mindfulness (20), patience training (21), forgiveness therapy (22), group movie therapy (23), self-awareness and assertiveness skills (24), hope therapy (25), and multi-skill training (26). Consolers of mental retardation mainly pay attention to issues that

families, in general, of these exceptional individuals face and mothers, in particular, who are the primary caregivers exposed to the tension (27). The present paper can pave the way for further studies to treat the mental harms of exceptional children's mothers because of the more prevalence of mental retardation and its mental pressure on the parents, especially mothers, than other disabilities. Accordingly, the extant study aims to examine the role and effectiveness of schema therapy on distress tolerance and resilience of mentally retarded students' mothers.

Materials and Methods

The statistical population comprised students studying in exceptional schools in districts 1 and 2 of Zahedan City, Iran 2020. The sample size included 30 mothers of mentally retarded children; the subjects were selected non-randomly based on the inclusion criteria and randomly assigned to two groups (n=15). The sample size was calculated based on the literature review and opinion of statistic experts (28). The selected mothers in the experimental group received eight schema therapy-training sessions. However, the topic was submitted to the ethics committee and university research deputy. The necessary permissions were taken before the intervention. The subjects were chosen based on the inclusion criteria.

It must be noted that all ethical considerations were explained, and participants took part in the intervention with full awareness and satisfaction. In this case, some information was given about the therapy type, their attendance in sessions, number, and duration of sessions. Mentally retarded students with mental injuries were diagnosed by pediatric neurologists and psychiatrists based on the IQ assessment scales given to students before entering school. Finally, two educational and clinical psychologists did interventions and schema therapy training. Furthermore, a pretest was performed for both groups, including the Distress Tolerance Scale (Gaher and Simons) and the CD Resilience Scale (Connor-Davidson).

In the next step, the experimental group received schema therapy. Post-test was done for both groups at the end of intervention sessions. Inclusion criteria were as follows: being female,

having a mentally retarded child, the age range of 20-40 years, being able to read and write, informed consent, and desire to participate in research. The exclusion criteria were more than two sessions of absence, receiving other psychological interventions, substance abuse, and taking psychiatric medications.

Research instrument

A) Connor and Davidson Resilience Scale: Resilience herein means the score obtained from the resilience scale (Connor and Davidson, 2003) developed to measure individuals' ability to cope with pressure and threat. Samani, Jokar, and Sahragard (2007) carried out a study that calculated Cronbach's alpha of this scale was equal to 0.87. (29). The reliability coefficient of the scale equaled 0.89 using Cronbach's alpha coefficient, and the validity of the scale equaled between 0.41 and 0.64 based on the correlation between each item and the overall score of coefficients.

B) Distress Tolerance Scale: This is a self-report scale measuring emotional distress tolerance designed by Simons and Gaher. This scale comprises 15 items and four subscales, including emotional distress tolerance, absorbed into negative emotions, mental appraisal of distress, and regulation of efforts to relieve distress. The items are scored based on the Likert scale. This scale was first used by Alavi et al. (2011) in Ferdowsi University and Mashhad University of Medical Sciences. They found high internal consistency reliability for the whole subscales (710%) and average reliability for subscales, which equaled 54%, 42%, 56%, and 58% for tolerance, absorption, appraisal, and regulation of increased tolerance, respectively (30). Moreover, Reyhani et al. (2014) calculated alpha coefficients of 72%, 82%, 78%, and 70% for tolerance, absorption, appraisal, and regulation, respectively. They also reported an overall reliability score of 82% for the whole distress tolerance scale (31).

Table 1. The content of schema therapy sessions (Young et al.) (32)

Sessions	Content
First and second	Initial communications, reviewing the structure of sessions, introduction to general principles of schema therapy, explaining rules and regulations, introducing schema therapy model simply and clearly
Third and fourth	Teaching cognitive techniques to challenge schemas, the new definition of evidence confirming schemas, negotiation between healthy and unhealthy aspects of schema, homework
Fifth and sixth	Helping respondents to cope with schemas emotionally and presenting homework
Seventh and eighth	Teaching behavioral modeling techniques, encouraging respondents to abandon maladaptive schemas

In the next step, the data were imported to SPSS22 software and analyzed using descriptive methods (mean and standard deviation (SD)). After the normal distribution of data was examined in groups, the data were analyzed through the Kolmogorov-Smirnov test and Multivariate Analysis of Covariance (MANCOVA).

Results

The obtained results indicated that 53.36%, 73.4%, and 53.3% of subjects were in the age range of 20-25 years, 26-30 years, and 31-40 years, respectively. In terms of education degree, 66.7% had a diploma, 73.3% had an associate degree, and 60% had a BA degree. All respondents had several children; 46.7% of mothers in both control and experimental groups were employed, while 53.3% were unemployed and housekeepers.

About 50% of families had a moderate socioeconomic situation, while the rest had a low-income level. According to Table 2, there was a decline in post-test scores of emotional distress tolerance and absorbed in negative emotions of the experimental group compared to the control group. At the same time, there was an increase in post-test scores of appraisal of emotions, regulation of emotions, and distress tolerance of experimental group compared to the control group.

Table 2. Mean and standard deviation of distress tolerance in both groups

Variable	Group	N	Pre-test	Post-test
			Mean(SD)	Mean(SD)
Emotional distress tolerance	Experimental	15	11.33(2.84)	7.26(2.31)
	Control	15	8.33(3.06)	7.33(2.96)
Absorbed in negative emotions	Experimental	15	12.26(2.05)	7.46(3.29)
	Control	15	8.40(2.69)	12.46(1.55)
Appraisal	Experimental	15	15.66(3.71)	19.93(3.89)
	Control	15	16.86(3.73)	13.26(3.36)
Regulation	Experimental	15	5.26(2.49)	9.40(2.74)
	Control	15	9.40(2.19)	5.80(1.69)
Overall score of distress tolerance	Experimental	15	41.33(8.14)	48.73(8.15)
	Control	15	41.40(7.22)	38.86(5.66)

Table 3. One-way ANCOVA of mean scores of distress tolerance in the experimental and the control groups within pre-test

Variable	Sum of squares	df	Mean squares	F	P	Effect size	Test power
Emotional distress tolerance	93.63	1	93.63	13.56	0.001	0.32	0.94
Absorbed in emotional emotions	187.50	1	187.50	47.96	0.001	0.63	1
Appraisal	240.83	1	240.83	18.13	0.001	0.39	0.98
Regulation	97.20	1	97.20	18.64	0.001	0.40	0.98
Overall score of distress tolerance	307.20	1	307.20	6.60	0.01	0.19	0.69
Emotional distress tolerance	193.33	28	6.90				
Absorbed in emotional emotions	109.46	28	3.91				
Appraisal	371.86	28	13.28				
Regulation	146	28	5.21				
Overall score of distress tolerance	1302.26	28	32.60				

As reported in Table 3, there is a significant difference between mentally retarded students' mothers in the experimental and control group with pretest control in terms of scores of emotional distress tolerance ($F=13.56, P \leq 0.001$), absorbed in negative emotions ($F=47.96, P \leq 0.001$), appraisal ($F=18.13, P \leq 0.001$), regulation ($F=18.64, P \leq 0.001$), and the overall score of distress tolerance ($F=6.60, P \leq 0.01$).

In other words, the mean value of emotional distress tolerance, absorption in negative emotions, emotions appraisal, emotion

regulation, and the overall score of distress tolerance among mentally retarded students' mothers in the experimental group compared to the mean value of the control group indicated that schema therapy could reduce emotional distress tolerance and absorption in negative emotions and increased emotions appraisal, emotion regulation, and the overall score of distress tolerance of experimental group. The difference rates of variables equaled 0.32, 0.63, 0.39, 0.40, and 0.19, respectively for variables mentioned above. Accordingly, 0.32, 0.36, 0.39, 0.40, and

0.19% of individual differences in posttest scores of emotional distress tolerance, absorption in negative emotions, emotions appraisal, emotion

regulation, and the overall score of distress tolerance were explained by the schema-therapy training.

Table 4. Mean and standard deviation of resilience scores in both groups

Variable	Group	N	Pre-test	Post-test
			Mean (SD)	Mean (SD)
Personal competence	Experimental	15	18.00(2.32)	24.46(1.84)
	Control	15	24.40(3.24)	21.93(3.47)
Trust in one's instincts (tolerance of negative affect)	Experimental	15	18.53(2.74)	24.33(2.25)
	Control	15	22.66(3.57)	18.33(3.22)
Positive acceptance of change and secure relationships	Experimental	15	13.73(2.63)	18.73(2.52)
	Control	15	15.93(2.96)	12.20(2.78)
Control	Experimental	15	5.33(1.71)	9.60(2.06)
	Control	15	10.80(1.93)	7.86(2.13)
Spiritual influences	Experimental	15	2.26(0.70)	5.26(1.16)
	Control	15	5.40(1.05)	3.33(1.17)
Overall score of resilience	Experimental	15	63.13(5.89)	66.60(4.10)
	Control	15	80.20(7.50)	73.53(11.69)

According to Table 4, there was an increase in posttest scores of personal competence, trust in one's instincts (tolerance of negative affect), positive acceptance of change and secure relationships, control, spiritual influences, and

overall resilience in the experimental compared to control group. Box's M test was used to determine Equivalence of Variance-Covariance Matrices.

Table 5. Results of dimensions of resilience in the experimental and control groups after receiving schema therapy

Variable	Group 1 (I)	Group 2 (J)	Mean difference	Standard error	Post-test
Personal competence	Experimental	Control	2.53	1.01	0.001
	Control	Experimental	-2.53	1.01	0.001
Trust in one's instincts (tolerance of negative affect)	Experimental	Control	6	1.01	0.001
	Control	Experimental	-6	1.01	0.001
Positive acceptance of change and secure relationships	Experimental	Control	6.53	0.96	0.001
	Control	Experimental	-6.53	0.96	0.001
Control	Experimental	Control	1.73	0.76	0.03
	Control	Experimental	-1.73	0.76	0.03
Spiritual influences	Experimental	Control	1.93	0.42	0.001
	Control	Experimental	-1.93	0.42	0.001
Overall score of resilience	Experimental	Control	10.46	3.10	0.001
	Control	Experimental	-10.46	3.10	0.001

Table 6. Results of dimensions of distress tolerance in the experimental and control groups after receiving schema therapy

Variable	Group 1 (I)	Group 2 (J)	Mean difference	Standard error	Post-test
Emotional distress tolerance	Experimental	Control	-3.53	0.95	0.001
	Control	Experimental	3.53	0.95	0.001
Absorbed in emotional emotions	Experimental	Control	-5	0.72	0.001
	Control	Experimental	5	0.72	0.001
Appraisal	Experimental	Control	5.66	1.33	0.001
	Control	Experimental	-5.66	1.33	0.001
Regulation	Experimental	Control	3.60	0.83	0.001
	Control	Experimental	-3.60	0.83	0.001
Overall score of distress tolerance	Experimental	Control	6.40	2.49	0.01
	Control	Experimental	-6.40	2.49	0.01

According to results reported in Table 5, comparative values of all groups were significant at the confidence levels of 0.99 and 0.95. In general, the mean difference between resilience dimensions in two groups of dialectical behavior therapy training and schema therapy indicated the significant difference between posttest effects of dialectical behavior therapy and schema therapy on resilience.

According to results reported in Table 6, comparative values of all groups were significant at the confidence levels of 0.99 and 0.95. The mean difference between distress tolerance dimensions in two groups of control and schema therapy indicated the significant difference between posttest effects of schema therapy and control on distress tolerance.

Discussion

The results indicated the significant effect of schema therapy on distress tolerance and resilience of mentally retarded students' mothers. Findings showed a reduction in posttest scores of emotional distress tolerance and absorbed in negative emotions of the experimental group compared to the control group.

There was also an increase in posttest scores of emotions appraisal, emotion regulation, and overall distress tolerance of the experimental group compared to the control group. Hence, schema therapy could effectively increase distress tolerance. This result was consistent with findings obtained by Ebrahimi (33), Yavari (14), Asadi (18), Kapi, and Canisteo (34).

In this case, Rahbar et al. carried out a study entitled "the effectiveness of schema therapy on psychological resilience and social empowerment in students with depression symptoms" on 28 students.

They concluded that schema therapy could reduce depression symptoms of students and as a technique could be effective in improving the resilience and social interactions of these students (35). Mubarak et al. conducted a study entitled "sources of stress among children with intellectual disabilities: a preliminary investigation in Saudi Arabia," and results indicated higher perceived stress levels in Saudi mothers compared to fathers regarding the overall parent-child relationship, the child's characteristics, and the parent's characteristics

(36). It can be explained that schema therapy can reduce chronic interpersonal problems, emotional instability, and distress by applying cognition therapy (37). Schema therapy has been formed, emphasizing maladaptive coping styles and childhood schemas and their effectiveness in processing and facing life events within the treatment instead of inefficient coping styles.

In this case, schema therapy provides the person with an opportunity to forget avoidance and negative appraisal, replacing them with adaptive coping styles (38). The adaptive strategies improve people's mental capacity and problem-solving power, which in turn lead to improved distress tolerance.

Moreover, findings of the extant study indicated an increase in posttest scores of personal competence, trust in one's instincts (tolerance of negative), positive acceptance of change and secure relationships, control, spiritual influences, and overall resilience in the experimental group compared to control group. Accordingly, schema therapy could increase distress tolerance. This result was in line with findings obtained by Hatami (39), Yavari (14), and Mohammadi (40).

Mohammadi et al. conducted a study entitled "the effectiveness of emotional schema therapy on distress tolerance of divorced women" on 24 divorced women living in Mashhad, Iran. The results showed the high effect of this therapy on these women (40). In another study, Bidari et al. carried out 30 patients with a borderline personality disorder. They found the effectiveness of schema therapy on cognitive strategies of emotion, distress bearing, and alexithymia in patients who have borderline personality disorder (41).

It can be explained about the effect of schema therapy on resilience that children's disease influences beliefs, thoughts, and feelings of mothers and other people living with them. Accordingly, they may experience negative feelings, such as confusion, bitterness, denial, depression and despair, and many other negative emotions that negatively affect their resilience and stubbornness and reduce their resilience (42).

Moreover, resilience helps individuals cope with irreversible traumas of life-based on supportive relationships between parents, peers, and others based on cultural and traditional

beliefs. Increased resilience of mothers can change an essential part of their lives so that mothers with high resilience can cope with life issues. Schema therapy can influence resilience and distress tolerance, protecting one against mood dysfunction caused by stress, rumination, and stress attacks (43).

Relevant studies have introduced different factors that create resilience. On the other hand, assessments have shown the association between emotional schemas and resilience. Identifying negative emotional schemas, their adjustment, and replacing positive schemas can strengthen resilience (44).

Furthermore, the extant study faced some constraints, including random sampling, attending regular meetings during the COVID-19 pandemic, and lack of cooperation of some subjects.

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Conclusion

It is necessary to implement timely psychological interventions, such as schema therapy for targeted groups regarding the nature of disabilities, particularly mental retardation and its high prevalence in society. Schema therapy applies informed empirical strategies and helps mothers to control their affections in a better way.

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