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Original Article

Effectiveness of Emotion Regulation Therapy on Suicide Ideation in Mothers of Children with Intellectual Disabilities during the COVID-19 Outbreak

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Abstract

Background and Aim:COVID-19 has led to many psychological problems in the world. Mothers of children with intellectual disabilities may experience psychological problems, including suicidal ideation in the outbreak of COVID-19.This study aimed to evaluate the effectiveness of emotion regulation therapy (ERT) on suicide ideation among mothers of children with intellectual disabilities.

Materials and Methods: The research method was quasi-experimental with experimental and control groups. The statistical population of this study consisted of all mothers of children with severe and profound intellectual disabilities in Razan city. 24 mothers with scores higher than the cut-off point (≥6) for the Beck Suicide Ideation Scale selected by convenience sampling method and were randomly assigned in the experimental and control groups. The ERT was applied for the experimental group in 8 sessions, and the control group did not receive any training during the sessions. Analysis of covariance with repeated measures were used to analyze the data.

Results: The results showed that ERT was effective in reducing suicide ideation in caregiver mothers of children with intellectual disabilities ($p<0.05$).

Conclusion: According to the results, the ERT is useful for reducing the suicide ideation in mothers of children with intellectual disabilities. ERT causes mothers to pay attention to their cognitive appraisal after awareness and acceptance of their negative emotions, and suicide ideation will decrease in them.

Keywords: Mothers, Emotion regulation, Intellectual disability, Suicide ideation

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Introduction

Caring for people with disabilities leads to high levels of stress, burnout, and psychological disorders (1-2). Mothers of children with disabilities report more stress and psychological problems than mothers with typical children (3-4). Thus, mothers of children with severe and profound intellectual disabilities may experience psychological problems during the COVID-19 outbreak.

Coronavirus (COVID-19) was first reported in Wuhan, China in December 2019 that severely affects the respiratory system. (5). The spread of COVID-19 in the world has become a major concern (6). COVID-19 has infected and killed millions of people worldwide (7). This disease has caused many psychological problems in society (8-9). In the COVID-19 outbreak, it has been shown that caregivers of children with intellectual disabilities experience psychological problems (10-11).

Suicide is one of the major health problems and challenges in the world (12). Suicide ideation is one of the psychological problems that mothers of children with intellectual disabilities may experience during the COVID-19 outbreak. Studies have shown that suicide ideation and suicide rates have increased in adults during the COVID-19 outbreak (13-14). A review study has shown that caregivers experience suicide ideation (15). Among mothers of children with intellectual disabilities, suicide ideation has not been studied in the COVID-19 outbreak. But research has shown that suicide ideation has increased in mothers of children under 18-years old during the COVID-19 outbreak (16-17). Pre-COVID-19 research has shown that suicide ideation is more prevalent in mothers of children with disabilities than in other mothers (18). Also, mothers of children with autism spectrum disorders report higher rates of suicide ideation than mothers with typical children (19-20). The closure of schools and the reduction of care-related services for children with disabilities during the COVID-19 outbreak has faced their families with problems such as limited clinical services, rehabilitation services and the provision of medical equipment (21). Therefore, mothers of children with severe and profound intellectual disabilities need psychological training that was not considered by researchers in the outbreak of COVID-19.

One of the psychological therapies is the emotion regulation therapy (ERT). ERT is one of the third wave of cognitive behavioral therapies (22-23). Emotion regulation is the process of regulating the use, experience and express of the emotions. ERT leads to dynamic, long-term, and rapid changes in expression as well as changes in the consequences of emotions (24). In studies before COVID-19, the effect of ERT on the psychological well-being of mothers of children with disabilities has been confirmed (11, 25-26). No research has been done on the effectiveness ERT on suicide ideation of mothers of children with intellectual disabilities in the COVID-19 outbreak. However, pre- COVID-19 research has confirmed the effectiveness of ERT on suicide ideation of mothers of children with intellectual disabilities (27). Also, research has confirmed the effectiveness of ERT on suicide ideation in different samples with the sample of the present study (28). In addition, previous research has confirmed the relationship between emotion regulation and suicide ideation (29-31).

Mothers of children with neurodevelopmental disorders use positive emotion regulation strategies (positive reappraisal, positive refocus, refocus on planning) less than negative emotion regulation strategies (self-blame, other blame and catastrophic strategies) (32), so ERT can affect them as caregivers of their children. Therefore, the main issue of this study was the effectiveness of ERT on suicide ideation of mothers of children with intellectual disabilities. Mothers directly observe the pain and suffering of children with severe and profound disabilities, and this can lead to psychological problems in them. Therefore, psychological programsare necessary for them (33). Psychological therapies, including ERT to reduce suicide ideation in mothers caring for children with severe and profound intellectual disabilities, can draw therapists' attention to these mothers and their psychological problems. In addition, conducting this research can strengthen the research literature.

Methods

The research method was quasi-experimental with pre-test, post-test, and follow-up. The statistical population of this study consisted of all mothers of children with profound and severe intellectual disabilities in Razan city in 2020(N=232). After evaluation, 36 mothers (15.52%) had ≥6 scores (cut-off point) on the Beck Suicide Ideation Scale (34). In this study, 36 mothers were randomly assigned into an experimental and control group. Six members of the experimental group did not attend the sessions continuously and were excluded from the final analysis. Accordingly, 6 mothers were excluded from the control group. Finally, the scores of 24 people (12 in the control group and 12 in the experimental group) were analyzed. It should be noted that the two groups were matched in terms of age (almost the same age) and level of education.

Inclusion criteria were informed consent, having a child with severe and profound mental disability, mothers as caregiver, obtaining a score higher than the cut-off point in the suicide ideation Scale (≥6), not having physical and mental illness according to the report of participants, having at least high school literacy, not being hospitalized due to physical and psychological problems in the 6 months before the research, observing the health recommendations related to COVID-19. Exclusion criteria were disapproval and dissatisfaction from participating in research, lack of continuous participation in ERT sessions, lack of desire and motivation when participating in sessions.

From an ethical point of view, mothers were assured of the confidentiality of their information before conducting research. They were reassured that their participation or non-participation in research would not affect welfare services for them and their child. All mothers completed the consent form to participate in the study. Also, the ERT sessions did not pose any physical or psychological risk to the participants. It should be noted that this research has been approved by the ethics code IR.MALAYERU.REC.1399.010 in the ethics committee of Malayer University.

Materials

Beck Suicide Ideation Scale

This Scale was used to collect data in pre-test, post-test and follow-up; The scale is a 19-item self-assessment tool developed by Beck, et al., (34) to detect and measure attitudes, behaviors, and plans for suicide.The response to each item ranges from 0 to 2. The total score is calculated based on the sum of the scores, which varies from 0 to 38. Scores of 0-5 indicates no suicide ideation, 6-19 suicide ideation and 20-38 suicide preparation. Cronbach's alpha coefficient of this scale was equal to 0.89 (34). In Iran, Cronbach's alpha coefficient of this scale was equal to 0.84 (35) and 0.95 (36). Also, the relationship between this scale and the Mental Health Questionnaire has been reported to be 0.76 (36). In the present study, the Cronbach's alpha coefficient of this scale was 0.80.

Intervention

For the experimental group we used ERT that developed and designed by Ariapooran (37) based on ERT of Gratz and Gunderson (38). In previous studies, the effectiveness of ERT on psychological and physical well-being (39), emotion and mood (40) has been confirmed. ERT was performed in 8 sessions, each session lasting 1.5 hour. This group therapy was performed in accordance with the health conditions of Covid-19 and with observance of health protocols related to COVID-19, including social distance. The sessions are described in Table 1.

Data were analyzed using repeated measures analysis of covariance or mixed analysis of variance with control the effect of marriage history, number of children, and having a young child. Data analysis was performed using SPSS-24 software.

Results

Descriptive results showed that in both groups, 6 (50.0%) had high school education, 2 (16.7%) had a diploma, 1 (8.3%) had an associate and 3 (0.25%) had a bachelor's degree. In the experimental group 3 mothers(0.25%) had one child, 3 (0.25%) had two children, 2 (16.7%) had 3 children and 4 (33.3%) had 4 children. Among the control group, 3 mothers(0.25%) had one child, 6 (0.50%) had two

Table 1: Steps and content of ERT sessions (37).

Sessions	Content
First: Performing the pre-test, communicate and conceptualize	Introducing group members, conceptualizing the ERT, sessions, agreement on sessions
Second: Awareness of positive emotions	A brief overview of the previous session, teaching awareness of positive emotions (especially emotions related to childcare) and their types (happiness, interest, love, empathy), teaching attention to positive emotions and the need to use them with an example in the form of mental imagery (e.g., imaging a happy and interest scenes), home task: writing major positive emotions and recording them in the appropriate form
Third:Awareness of negative emotions	A brief overview of the previous session, teaching awareness of negative emotions (especially emotions related to childcare) and their types (worry, anxiety, sad), teaching attention to positive emotions and the need to use them with an example in the form of mental imagery (e.g., imaging a sad and anxious scenes), home task: writing major negative emotions and recording them in the appropriate form
Fourth: Acceptance of positive emotions	Acceptance training of positive emotions without unjudging, acceptance the positive and negative consequences of using these emotions, home task: Ask your spouse and close friend about the low or high positive emotions and recording in the form
Fifth: Acceptance of negative emotions	Acceptance training of negative emotions without unjudging, acceptance the negative consequences of using these emotions, home task: Ask your spouse and close friend about the low or high negative emotions and recording in the form
Sixth: Emotion reappraisal and expressing positive emotions	Training the mental experience of positive emotions in the form of mental imagery (happiness, interest, love, empathy), mental inhibition and teaching the proper expression of these emotions
Seventh: Emotion reappraisal and expressing negative emotions	Training the mental experience of negative emotions in the form of mental imagery (worry, anxiety, sad), mental inhibition and teaching the proper expression of these emotions
Eighth: Conclusion	Conclusion, presenting final suggestion, and post-test

children, 1 (8.3%) had 3 children, 2 (16.7%) had 4 children. In the experimental group, 6 mothers(0.50%) had a young child except a child with intellectual disabilities and 6 (0.50%) did not have a young child except a child with intellectual disabilities. In the control group, 5 (41.7%) had young children except children with intellectual disabilities and 7 (58.3%) had no young children except children with intellectual disabilities. The mean age in the experimental and control groups were 42.33±12.93 and 42.16±12.69, respectively; the mean of marriage history in the experimental and control groups were 20.12±11.95 and 20.17±11.18, respectively. Table 2 shows the mean (M) and standard deviation (SD) of suicide ideation (pre-test, post-test, and follow-up) in the experimental and control groups.

Based on the results of Box test, which was not significant (Box test=1.74; P<0.088), the condition of homogeneity of the covariance matrices of variance was correctly observed. Based on the Mauchly's Sphericity test, which was not significant (Mauchly's Sphericity test=0.772; P<0.156), the assumption of equality of intragroup variances was observed. Also, based on Levin test and its non-significance for pre-test (F=0.462; P<0.504), post-test (F=2.76; P<0.074),

and follow-up (F=1.533; P<0.091), the condition of equality of intergroup variances was also observed.

ideation scores in follow-up compared to pre-test. This means that the effect of ERT has had a lasting effect

Table 2: The mean (M) and standard deviation (SD) of suicide ideation.

Variable	Time	experimental group				control group			
suicide ideation		M	SD	Skewness	kurtosis	M	SD	Skewness	kurtosis
	Pre-test	11.58	2.58	-0.213	0.71	11.83	3.51	-0.03	-0.332
	Post-test	6.17	1.64	-0.247	1.05	11.51	3.68	-0.335	-0.401
	Follow-up	6.92	1.31	-0.11	1.18	12.42	2.99	-0.362	-0.31

Table 3: Analysis of covariance with repeated measure to compare suicide.

Source	**SS**	**df**	**MS**	**f**	**p**	**EF**
Time	50.021	1	50.021	17.81	0.001	0.45
Error	61.792	16	2.609			
Group	245.681	1	245.681	12.43	0.001	0.36
Error	820.486	13	51.280			
Group*time	82.687	1	82.687	29.44	0.001	0.57

SS= Sum of Squares; MS= Mean Square; EF= Effect Size

Table 4: Bonferroni post-hoc test for comparison of suicide ideation in experimental and control groups.

Variable	Group	Time	Mean Difference	
suicide ideation			Post-test	Follow-up
	Experimental Group	Pre-test	5.41**	4.67**
		Post-test	-	-0.75
	Control Group	Pre-test	0.333	-0.583
		Post-test		0.917

*P<0.05; **p<0.01

In Table 3, the results of analysis of covariance with repeated measure by eliminating the effect of marriage history, number of children and having a young child showed that there is a significant difference between the mean time of suicide ideation in the experimental and the control group. The effect of group on suicide ideation was significant; The interaction effect of group*time was also significant. In addition, this table shows that the effect size of emotion regulation training on suicide ideation was 0.38.

Table 4, shows that there is a significant difference between the mean of post-test and follow-up with pre-test of suicide ideation in the experimental and control group. Based on the Bonferroni post-hoc test the mean of suicide ideation (in post-test and follow-up) in the experimental group was significantly reduced compared to the control group. In other words, ERT has been effective in reducing the scores of suicide ideation compared to the control group. In addition, there was a significant increase in suicide on suicide ideation scores.

Discussion

This study aimed to evaluate the effectiveness of ERT on suicide ideation of mothers of children with intellectual disabilities in outbreak of the COVID-19. The results of analysis of covariance with repeated measures showed that the mean of suicide ideation of the experimental group significantly decreased compared to the control group. Also, the mean follow-up to the post-test in the experimental group has increased. In COVID-19, the effectiveness of ERT on suicide ideation of mothers of children with intellectual disabilities in outbreak of the COVID-19has not been examined. However, the findings of the present study are consistent with the previous finding that confirmed the effectiveness of ERT on

suicide ideation of mothers with children with intellectual disabilities (27). This finding is also in line with previous findings that showed that ERT reduces suicide ideation (28). In non-experimental studies, the relationship between emotion regulation and suicide ideation has been confirmed (29-31), and the findings of the present study confirm the findings of those studies.

Explaining this finding, it can be argued that one of the effects of ERT is modulating, changing and managing emotions that has been mentioned in previous studies (38-39-40); Therefore, it can be said that modulation, change and management of emotions can play a role in reducing the emotions and negative thoughts among mothers of children with intellectual disabilities; In addition, it can be said that awareness of negative emotions and acceptance of negative emotions in emotion regulation training are among the main techniques that are taught (38—39-40); These techniques are likely to help mothers of children with severe and profound intellectual disabilities become aware of and accept the negative emotions of caring for their child during the COVID-19outbreak, which may lead to reduce suicide ideation. In addition, cognitive appraisal of negative emotions is taught in ERT, and it causes mothers to pay attention to their cognitive appraisal after awareness and acceptance of their negative emotions, and thoughts and suicide ideation will decrease in them.

One of the points to be considered based on the results of the present study is that the mean of suicide ideation of mothers after ERT has decreased to the cut-off point of the Beck suicide ideation Scale. This suggests that ERT sessions for mothers of children with intellectual disabilities who have suicide ideation should be continued. It should be noted, however, that ambiguity about COVID-19 and its treatment, as well as news and information on its mortality, may play a role in suicide ideation during the outbreak of COVID-19 in caregiver mothers of children with intellectual disabilities.

Cross-sectional data collection and the impossibility of interviewing for suicide ideation prevalence before the intervention were a limitation of the present study. Many variables, such as the age of the child and the financial problems of the parents, were not controlled. Therefore, further research suggests that, if possible, interviews be used to identify the prevalence of suicide ideation among mothers of children with intellectual disabilities. In addition, control of other variables such as child age and economic status is suggested in future research. Another limitation was the lack of comparison of ERT with other trainings, which in future research, it is better to compare this training with other treatment methods.

Conclusion

It can be concluded that ERT has a greater impact on the suicide ideation of mothers of children with intellectual disabilities in the COVID-19 outbreak. It can be argued that ERT it causes mothers of children with intellectual disabilities to pay attention to their cognitive appraisal after awareness and acceptance of their negative emotions, and suicide ideation will decrease in them.

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Conflict of Interest

The authors declare that they have no conflict of interest.

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