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The Effectiveness of Cognitive Restructuring on Emotional Regulation of Adolescent Girls Suffering from Self-Injury

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ABSTRACT

Objective: The purpose of this study was to investigate the effectiveness of cognitive restructuring training on emotional regulation of teenage girls suffering from self-injury.

Methods: The semi-experimental research method was pre-test-post-test and follow-up with a control group. The statistical population of this research was all female students suffering from self-injury, age range 15-18 years old in Baharestan schools in 2022. The number of 54 people who had self-injury in the last 6 months and had visited the counseling clinics were selected, and they were randomly assigned to the experimental and control groups by accessible sampling method. The research tools included the Cognitive Emotion Regulation Questionnaire (CERQ) and the ISAS self-injury test. The subjects of the experimental group underwent eight 90-minute sessions of cognitive restructuring training, and the control group did not receive any intervention, and a follow-up was done after one month. Multivariate covariance analysis was used to analyze the data.

Results: After examining the presuppositions of the multivariate covariance analysis, the test results showed that there was a significance difference between the two groups in emotion regulation strategies ($p<0.01$.

Conclusions: According to the findings of the research, it can be concluded that cognitive reconstruction is effective and has improved the emotion regulation strategies of adolescent girls suffering from self-injury.

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Introduction

Self-injury without suicide is a type of self-injury in which a person directly injures different parts of the body, but does not have the motivation to commit suicide, and this behavior is not considered part of certain cultural rituals and customs. Studies conducted using structured diagnostic interviews have reported diagnoses such as major depressive disorder and post-traumatic stress disorder in hospitalized adolescents with complaints of self-injury without suicide. Some experts believe that the characteristics of people suffering from self-injury are so different from other diagnostic classes that it is better to include them in a new diagnostic class. In adolescence, the prevalence of self-injurious behaviors without suicide is higher than in other age periods. Its prevalence is 4% in the age group (12-20) and about 4-7% in adults. Teenagers who have had a history of misbehavior during their childhood in the form of physical, sexual, emotional abuse and neglect are at a higher risk of self-injury (Khanipour , 2013). Considering the special pressures and tensions of adolescence, self-harm is actually a coping behavior that is done with the aim of reducing negative emotions. In order to understand self-injury behaviors in teenagers, it is necessary to know why a certain behavior is done at a certain time, under a certain consequence and by a certain person. According to the model of emotional regulation, the most important motivation in these actions is the regulation of negative emotions. (Piaman Nia, 2017). Emotional cognitive regulation skills are divided into six sub-skills including emotion acceptance, emotional awareness, purposeful behavior during emotional experience, impulse control, access to emotion regulation strategies (emotional skill) and emotional clarity. There are two opinions regarding the relationship between emotional cognitive regulation deficits and self-injury, these people show more intense emotional reactions due to their internal vulnerability, which eventually causes them to harm themselves (Nak and Mendez, 2008) and that weakness in skills Emotional cognitive regulation causes self-harm (McKenzie and Gross, 2013). It seems that childhood misbehavior causes the adolescent to use self-harm in the areas of emotional regulation as a compensatory method to overcome his own injury (Yates, 2003).

Emotion regulation is the capacity to manage, evaluate, understand and improve emotional reactions in a way that is for it indicates that normal performance is beneficial. Difficulty regulating emotions is associated with a variety of negative consequences, such as symptoms of depression,

anxiety, substance abuse, aggression, and suicidal thoughts (McYu et al., 2019). The concept of emotion regulation is a broad concept and includes countless regulatory processes. In addition to conscious or unconscious cognitive processes, it may also include a wide range of physical, social and behavioral processes. It allows him to manage his emotions and feelings when he is faced with threatening events, to have control over them and not to drown in his emotions. (Garnefsky, Crouch and Spihan, 2010). Emotional regulation problems The most important factor is psychopathology because people who cannot manage their emotional responses specifically are likely to experience longer periods of distress than people who can. Emotional regulation as an important factor is necessary for adaptive performance and the use of incompatible strategies leads to negative results and even physical diseases. Emotional regulation and physical health are two related concepts that are related from different angles. Similar brain areas are stimulated that play a role in behaving with others (Solemani et al., 2013). Also, emotional regulation is a process that is learned during the growth process and may be due to improper family environment, lack of appropriate learning patterns, misbehavior. physical and sexual problems, the person will face problems in managing his emotions. Difficulty in emotional regulation can be defined as the use of inflexible strategies that may have been useful in the past or in special cases, but in the present cause the normal and appropriate social, cognitive and interpersonal functioning of a person to be disturbed. . In this process, the person is still looking for emotional regulation, but the result is not expected and it creates problems in the person's life and mental health. (Cole and Michel, 1994).

Cognitive reconstruction starts with the basic premise that problems in life originate from incorrect knowledge, beliefs and ideas that people grow and develop in different conditions (Karr, 2017). Cognitive reconstruction is a set of methods that teaches people assumptions Examine yourself about the environment and make your opinions more realistic. In the application of these techniques, it is assumed that irrational thoughts lead to irrational behaviors that can be corrected by changing the underlying thoughts (Asikhia, 2014). Cognitive reconstruction is the understanding and transformation of negative thinking, it challenges negative thinking and It changes and helps us put situations in a positive form. It is clear that negative thinking, in addition to causing discomfort, also reduces the quality of one's performance and weakens one's social relationships. The main idea of cognitive restructuring It is that every person is responsible for his negative states and with a more accurate evaluation, he can change his thinking in a more positive

way (Muller Steele, 2017). Cognitive reconstruction is similar to "awareness of thought, logical thinking and positive thinking" and as a tool. It is in the approach of cognitive therapy. Since according to the theory of cognitive therapy, the change of cognition will lead to the change and control and regulation of emotion, it can be expected that this method of intervention will lead to the regulation of emotion in the studied sample.

Based on research evidence, the effectiveness of cognitive restructuring training in improving the regulation of conflicting emotions in people suffering from obsessive compulsive disorder and people suffering from (PTSD) (Lamotte & Karism Vaxner 3, 2023) improving the regulation of emotions in people suffering from post-traumatic stress disorder (PTSD) in trauma survivors Sexual use in childhood (Müller & Steele, 2017) Effective reduction in hostile beliefs and regulation of negative emotions of anger in patients (Panel Martjin et al., 2021) Improving stress management in refugees affected by trauma (Barhoma, 5 et al., 2021) Familiarity with emotions, improving emotional regulation of Urmia nurses (Aghblaghi et al., 2014) Improving cognitive emotional regulation and family functioning in infertile women (Zare etal., 2014) Improving emotional regulation and effective reduction of pregnancy anxiety (Basherpour&Tahari Fard 2016) Improving cognitive emotional regulation and individual development of Shahid Vaythargar children (Namjoo etal., 2019) Reducing depression and anxiety in patients suffering from obsessions (Kavand, etal., 2014) has been effective and has brought promising results.

The need to address this research is because there has not been any research on the effectiveness of cognitive restructuring on emotion regulation in teenage girls suffering from self-harm. Does cognitive restructuring training lead to improvement of emotion regulation methods in adolescent girls suffering from self-injury? The answer to these questions led the researcher to examine the training of cognitive reconstruction techniques in improving emotion regulation strategies.

Materials and Methods

In terms of application, this study is semi-experimental with a pre-test, post-test design with a control group, and the subjects (statistical population) were all female students with self-harm in Baharestan city in the academic year 2022. The sample was among girls. 36 high school students who had a history of suicide in the last 6 months and referred to counseling clinics were randomly

selected and assigned to one of the experimental and control groups of the research. Emotion (CERQ, Garnevsky et al., 2002) and ISAS self-injury test (Klonskyetal., 2011) were tested and the experimental group, after filling the questionnaires, in 8 sessions of 90 minutes; They received cognitive restructuring as a group, and the control group did not receive any intervention. After the intervention sessions, the questionnaires were filled again by the sample and finally, after one month, the questionnaires (follow-up) were given to the sample again and were subjected to statistical analysis. The questionnaire of the difficulty of emotion regulation scale by Garnevsky et al. is a self-report tool and has 36 items. This questionnaire is very easy to implement and can be used for people 12 years old and above. The cognitive emotion regulation questionnaire evaluates 9 cognitive strategies of self-blame, acceptance, rumination, positive refocusing, refocusing on planning, positive reappraisal, perspective-taking, catastrophizing, and blaming others. In examining the psychometric characteristics of the test, Garnevsky et al. (2001) obtained the reliability of the test using Cronbach's alpha coefficient equal to 0.92, 0.88, and 0.96, respectively. In Iran, the validity of the test, through the correlation of the total score with the scores of the subscales, ranged from 0.40 to 0.38 with an average of 0.63. The short form of the Persian version of the Cognitive Discipline of Emotion Questionnaire Cronbach's alpha was 68. 0 to 0.82 showed that the 9 subscales of the Persian version of the Cognitive Questionnaire of Emotion Regulation have favorable validity. Klonsky and Glenn's (2009) scale of self-injurious behaviors and functions in the first part shows the frequency of 12 different types of self-injurious behaviors that are done intentionally (consciously) but not with suicidal intent, including hitting, biting, burning, tattooing, cutting, It screens for wound manipulation, self-pinching, poking, rubbing the skin against rough surfaces, intense itching, sticking needles in the body, and eating dangerous chemicals. In the second part, it evaluates the performance of non-suicidal self-injurious behaviors. This section evaluates the performance of 13 self-injurious behaviors that have been confirmed in experimental and theoretical studies (Chapman et al., 2006). and Glenn, 2011).

The method of execution

Cognitive restructuring therapy sessions based on the manual for therapy through cognitive restructuring (Ryan Mc Mullin, 2002; Translation of Firouzbakht, 2019) will be performed in 8 sessions of 90 minutes twice a week.

In a research titled the effectiveness of cognitive restructuring on marital satisfaction, Mahshid Sasanpour 2014. In another study, the effectiveness of Adlerian counseling and cognitive restructuring on students' mental health Hossein Salimi used this protocol in 2011.

Summary session number of the treatment guide

The first meeting, purpose: establishing communication, method: explaining the objectives of the meetings, explaining the rules of attending the meetings Opportunities, criteria and pre-test

The second session, goal: illogical thoughts and inconsistent cognition, method: illogical thoughts, explanation of errors cognitive, explaining goals and realistic expectations, mutual expectations and paying attention to positive features

The third session aims at: cognitive reconstruction, challenging thinking

Method: Explanation of illogical beliefs, techniques of questioning illogical beliefs, challenge technique You have to think with thoughts, examine problems

The fourth session, goal: creating empathic understanding skills, method: evaluation of communication patterns and obstacles, training and education Proper communication skills, ways to deal with negative thoughts

The fifth session, the goal: communication styles and its feedback, method: knowing the types of communication styles, the difference of aggression. and self-consciousness (inhibited, aggressive and self-conscious styles) and self-awareness of these.

Sixth session, goal: the concept of a perfect human being, method: recognition of unsatisfied emotional needs and the release of blocked emotions done

7th session, goal: tracking cognition, method: tracking cognitive distortions, testing cognitive distortions

8th session, goal: teaching problem solving, method: teaching problem solving, answering questions and doing the post-test

Results

The mean and standard deviation of the pre-test and post-test scores of the emotion regulation strategies variable in the experimental and control groups. It is presented in Table 1.

Table 1. Statistical description of pre-test and post-test scores of emotion regulation strategies by group

		pertest		posttest	
Group	Variable	Mean	SD	Mean	SD
Control	Positive refocusing	10.06	2.879	10.69	2.444
	Refocusing on planning	10.40	3.258	10.92	2.669
	Positive re-evaluation	11.27	2.744	11.80	2.201
	the reception	10.71	2.772	11.53	2.877
	Blame yourself	14.67	2.744	14.17	2.813
	Blame others	13.39	2.146	13.78	2.691
	rumination	13.89	2.784	13.11	2.867
	Acceptable point of view	15.06	2.838	15.61	3.744
	Disastrous	16.11	2.610	15.61	3.238
Experimental	Positive refocusing	10.44	3.518	13.08	4.388
	Refocusing on planning	9.74	4.109	11.97	3.190
	Positive re-evaluation	11.43	2.618	14.22	2.839
	the reception	9.78	2.415	12.28	2.697
	Blame yourself	14.89	2.398	11.33	2.449
	Blame others	13.67	2.142	10.83	2.975
	rumination	13.72	3.121	10.11	3.324
	Acceptable point of view	15.17	2.595	11.72	2.321
	Disastrous	15.22	2.962	12.06	3.702

In order to investigate the effectiveness of cognitive restructuring on emotional regulation strategies of adolescent girls suffering from self-injury, multivariate covariance analysis was used. The Shapiro-Wilk test was used to check the normality of the distribution of scores, which confirmed the assumption of normality of the distribution of scores due to the non-significance of the obtained values. The results of the homogeneity test of the regression slope of the pre-test and post-test scores in the experimental and control groups showed that the regression slope was the same in both groups (P<0.05, F_18.30=1.063). The results of Levin's test to check the homogeneity of the variance of the dependent variables in the groups showed that the variance of refocusing was positive (p < 0.05, F = 1.34, 1.23), refocusing on the micro program (p < 0.05, 0.063 F_1.34=2, positive reappraisal (p<0.05, F_1.34=0.081), acceptance (p<0.05, F_1.34=1.594), self-blame (<0.05 p, F_1.34=0.234), blaming others (p<0.05, F_1.34=0.024), rumination (p<0.05, F_1.34=1.810), viewpoint acceptance (05 (p < 0.05, F_1.34=2.530) and catastrophizing (p<0.05, F_1.34=181) are equal in the groups. The results of the box test to check the equality of the covariance matrix of the dependent variables between the experimental and control groups also showed that the covariance matrix of the dependent variables is equal in the two groups (p<0.05, F=1.259, Box M=79.590). . The results of Bartlett's chi-square test to check the sphericity or

significance of the relationship between the variables showed that the relationship between these components is significant (p<0.01, df=44, x^2=62.026). After examining the presuppositions of the multivariate covariance analysis, the test results showed that there is a significant difference between the emotion regulation strategies of the two groups (p<0.01, F_9.17=4.753, Wilks Lambda=0.284). . In order to check which of the experimental and control groups differ from each other in emotion regulation strategies, the results of univariate covariance analysis are reported in Table 2.

Table 2. The results of univariate covariance analysis of the difference between experimental and control groups in emotion regulation strategies

Variable	Source	SS	DF	MS	F	P	Effect size
Positive refocusing	between groups	36.631	1	36.631	14.670	0.001	0.370
	error	62.426	25	2.497			
Refocusing on planning	between groups	20.358	1	20.358	11.912	0.002	0.323
	error	42.726	25	1.709			
Positive re-evaluation	between groups	35.912	1	35.912	7.022	0.014	0.219
	error	127.856	25	5.114			
the reception	between groups	21.983	1	21.983	5.718	0.025	0.186
	error	96.105	25	3.844			
Blame yourself	between groups	68.922	1	68.922	9.858	0.004	0.283
	error	174.794	25	6.992			
Blame others	between groups	73.099	1	73.099	8.841	0.006	0.261
	error	206.698	25	8.268			
rumination	between groups	79.815	1	79.815	12.191	0.002	0.328
	error	163.680	25	6.547			
Acceptable point of view	between groups	107.785	1	107.785	9.908	0.004	0.284
	error	271.976	25	10.879			
Disastrous	between groups	53.009	1	53.009	9.238	0.005	0.270
	error	143.447	25	5.738			

According to Table 2, the F statistic for positive refocusing (P < 0.01, F_14.670 = 1.25), refocusing on investment program (P < 0.01, F_1.25 = 11.912), re-evaluation positive (P>0.05, F_1.25=7.022), acceptance (P>0.05, F_1.25=5.718), self-blame (P>0.01, F_1.25=9.858), blaming others (P<0.01, F_1.25=8.841), ruminating (P<0.01, F_1.25=191), viewpoint acceptance (P<0.01, F=9.908 F_1.25) and catastrophizing (P>0.01, F_1.25=9.238) is significant. These findings indicate that there is a significant difference between the emotion regulation strategies of the control and experimental groups. According to these findings, it can be concluded that cognitive rehabilitation is effective and has improved the emotion regulation strategies of adolescent girls

suffering from self-injury. Also, the effect size in Table 2 shows that group membership accounts for 37% of positive refocusing changes, 32.3% of refocusing changes on planning, 21.9% of positive reappraisal changes, 18.6% of acceptance changes, 3 It explains 28.0% of changes in self-blame, 26.1% of changes in blaming others, 32.8% of changes in rumination, 28.4% of changes in receptiveness, and 27% of changes in catastrophizing.

Discussion

The results of the statistical analysis, resulting from the effect of the cognitive rehabilitation intervention on the emotion regulation of female students suffering from self-injury, indicate that cognitive rehabilitation has improved the emotion regulation strategies of teenage girls suffering from self-injury. This result is in line with the researches of Aghblaghi (2022), Pakandish (2021), Abbaspour (2014), McKenzie (2013), Yates (2003). There are some distinguishing features of this treatment which include: acceptance, re-evaluation and refocusing on planning. The general concept of cognitive regulation of emotion implies the cognitive method of manipulating the entry of emotional information of a person. In other words, cognitive emotion regulation strategies refer to the way people think after a negative experience or traumatic event occurs for them (Ochsner and Gross 2004).

Some people have difficulty in regulating their emotions and in response to relatively small life events, high levels of unregulated emotions such as anxiety and sadness can reduce a person's satisfaction with interpersonal relationships and can cause conflicts in a person's interactions with others. Increase. Factors that lead to emotional dysregulation may be due to past personal injury (for example, abuse, abandonment), growing up in a family that has problems with emotional regulation (incorrect modeling), or various types of psychological trauma and misrecognition of events and cognitive errors. and the lack of cognition in communication skills, illogical thoughts. Therefore, education based on cognitive reconstruction through the examination of cognitive distortions and communication skills can play an important role in the emotional regulation of people It is possible to identify the strong expression of emotions and the lack of regulation. Teenagers whose emotions are not regulated usually respond in an aggressive way or withdraw others to meet his needs, often gives the opposite result. Previous studies show that people who have symptoms such as anxiety and depression, face difficulties in the cognitive regulation of their

emotions and the desire to use negative strategies of cognitive regulation of emotions. In such cases, a person who works with a cognitive reconstruction approach tries to examine the evidence that supports the person's basic beliefs and tries to ask the adolescents and parents to adopt another point of view in their emotional experience and expression. Regulated can lead to psychological and physical health. According to the findings of the previous research and the findings of the present research, it can be said that training in the way of cognitive reconstruction by working on the recognition of teenage girls suffering from self-harm, in the early stages of treatment, teaching basic skills to improve behavioral exchanges and correct fundamental beliefs and Errors in parental relationships, examining cognitive errors, behavioral dos and don'ts, promoting adaptive emotion regulation strategies and reducing maladaptive strategies can be effective in regulating teenagers' emotions. In explaining the effect of cognitive restructuring on the emotion regulation of adolescents suffering from self-injury, it can be said that those who focus on re-planning and re-evaluation have more flexibility (Nirmedjar, 2019).

Research limitations

Due to the lack of access to all male and female students, this research was conducted only on one gender, it is suggested that this research be conducted on the community of male students as well. It is suggested that apart from this two-way approach, other therapeutic approaches should also be used to regulate the emotions of adolescents suffering from self-injury.

Data availability statement

The original contributions presented in the study are included in the article/supplementary material, further inquiries can be directed to the corresponding author.

Ethics statement

The studies involving human participants were reviewed and approved by ethics committee of Islamic Azad University. The patients/participants provided their written informed consent to participate in this study.

Author contributions

All authors contributed to the study conception and design, material preparation, data collection and analysis. The author contributed to the article and approved the submitted version.

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