THE EFFECTIVENESS OF COGNITIVE-BEHAVIORAL THERAPY IN SUICIDAL IDEATION AND EARLY MALADAPTIVE SCHEMAS OF THE GIRLS REFERRING TO THE SOCIAL EMERGENCY OF THE COUNTRY

A EFETIVIDADE DA TERAPIA COGNITIVO-COMPORTAMENTAL NA IDEAÇÃO SUICIDA E NOS ESQUEMAS MAL-ADAPTATIVOS PRECOCES DAS MENINAS, REFERENTES À EMERGÊNCIA SOCIAL DO PAÍS

Mehrnoush Bazari 1
Malekeh Mashhadi Farahani 2
Hamid Reza Vatankhah 3

1 MA student in Psychology, Islamic Azad University, West Tehran Branch. E-mail: m.bazari922@yahoo.com

2 Faculty Member and Assistant Professor, Islamic Azad University, Karaj Branch. E-mail: m.farahani@gmail.com

3 Faculty Member and Assistant Professor, Islamic Azad University, West Tehran Branch. E-mail: h.vatankhah@gmail.com

Abstract: *Introduction: Suicide is one of the problems of mental health and since it is defined as an action that a person does deliberately and with the knowledge of its probable outcomes in order to hurt himself, his cognitive abilities play a direct role in committing it.* **Aim:** *The present research was conducted with the aim of investigating the effectiveness of cognitive-behavioral therapy in suicidal ideation and early maladaptive schemas of the girls referring to the social emergency of the country.* **Method:** *This study was conducted as an experimental research with a pretest-posttest control group design among the girls referring to the social emergency of the country in Alborz Province in 2017-2018. 50 girls participated in the study, of whom 25 subjects were placed in the experimental group and 25 subjects in the control group. The subjects were selected through random sampling method and completed Beck Scale for Suicidal Ideation (1961) and Young Early Maladaptive Schema Questionnaire (2002). After recording the data in SPSS-24, analysis of covariance method was employed to analyze the data.* **Findings:** *The results demonstrated that cognitive-behavioral therapy is effective in reduced suicidal ideation and early maladaptive schemas of the girls referring to the social emergency.* **Conclusion:** *According to the obtained results, understanding one's abilities and situations for success and reduced anxiety and depression can be the result of these cognitive-behavioral therapies, ultimately leading to decreased schemas in individuals.*
Keywords: *Suicidal Ideation. Cognitive-Behavioral Therapy. Early Maladaptive Schemas.*

Resumo: *Introdução: O suicídio é um dos problemas da saúde mental e, por ser definido como uma ação que a pessoa faz deliberadamente e com o conhecimento de seus prováveis resultados, a fim de se machucar, suas habilidades cognitivas exercem um papel direto em comprometê-la.* **Objetivo:** *A presente pesquisa foi realizada com o objetivo de investigar a eficácia da terapia cognitivo-comportamental na ideação suicida e nos esquemas iniciais mal adaptativos das meninas, referentes à emergência social do país.* **Método:** *Este estudo foi conduzido como uma pesquisa experimental com um desenho de grupo de controle pré-teste e pós-teste entre as meninas, referindo-se à emergência social do país na Província de Alborz em 2017-2018. Participaram do estudo 50 meninas, das quais 25 foram colocadas no grupo experimental e 25 no grupo controle. Os sujeitos foram selecionados pelo método de amostragem aleatória e completaram a Escala de Beck para Ideação Suicida (1961) e o Questionário de Esquema Desadaptativo Precoce de Young (2002). Após o registro dos dados no SPSS-24, foi utilizado o método de análise de covariância para análise dos dados.* **Resultados:** *Os resultados demonstraram que a terapia cognitivo-comportamental é eficaz na redução da ideação suicida e dos esquemas iniciais mal adaptativos das meninas, referentes à emergência social.* **Conclusão:** *De acordo com os resultados obtidos, compreender as habilidades e situações para o sucesso e reduzir a ansiedade e a depressão pode ser o resultado dessas terapias cognitivo-comportamentais, levando à diminuição dos esquemas nos indivíduos.*
Palavras-chave: *Ideação Suicida. Terapia Cognitiva Comportamental. Esquemas Precoces Desadaptativos.*

Introduction

Suicide and suicide attempt are among the most important indicators of mental health of people in society, which are associated with multiple factors, including age, sex, marital status, economic factors, family dimension, substance abuse, parental conflict and divorce, lack of social support, unemployment, physical and mental illness especially depression and suicidal thoughts. Among psychiatric disorders, depression with a rate of 58% accounts for the highest risk of suicide attempt (1). Although suicide is seen among all age groups, it leads to the loss of more potential years in young people, which is of great importance. Further, unfamiliarity with the difficulties youths are grappling with is problematic for the mental health of young people and also their family and society (2, 3). One of the methods for treatment of suicidal ideation is the cognitive-behavioral therapy that has been proposed for the treatment of depressed patients since the 1970s. In this method, the patient is encouraged to consider the relationship between negative automatic thoughts and the feeling of depression as the hypotheses that should be tested and take advantage of the behaviors resulting from negative automatic thoughts as a criterion for evaluating the validity of those thoughts. In this approach, between 6 and 20 sessions of psychotherapy are needed to treat depression and suicidal ideation (4). In a study by Chalak et al. (2018), it was revealed that cognitive-behavioral therapy is effective in reduced suicidal tendencies among university students (5). Cognitive-behavioral therapy is considered for several reasons: The first reason is its nature of psychological training which makes it appropriate for treating this chronic and recurrent disorder through promotion, review and self-regulation; the second reason is its proved efficiency in increasing adherence to drug therapy. This is especially useful in that it has been reported that non-adherence to drug therapy is typically more than 50%. The third reason is its proved efficiency in preventing depression relapse, suggesting that this treatment may also be effective in preventing recurrence of suicidal ideation. Fourth, preliminary results indicate that the interaction between cognitive styles and stressful life events can predict depression symptoms. Additionally, schema therapy is one branch of cognitive-behavioral therapy that was founded by Jeffrey Young and his colleagues since the 1990s (6). According to Young's opinion, mental injuries result from the formation and persistence of maladaptive schemas (7). In this respect, we can refer to the study by Moazzeni et al. (2018) in which it was displayed that schema therapy can be used as an effective intervention to reduce the severity of depression and suicidal thoughts in people with treatment-resistant depression (8). In Beck's cognitive model, it is believed that experiences in individuals lead to the creation of assumptions or schemas about oneself and the world. Some of these assumptions are inflexible, extreme and resistant to change and thus are ineffective or infertile. When the events in the environment activate these inefficient assumptions and beliefs, negative automatic thoughts are aroused, resulting in depression. With the development of depression, negative automatic thoughts become greater and more intense and rational thoughts further disappear and in this way, the vicious circle is formed (9). Early maladaptive schemas are self-harm cognitive-emotional patterns that are formed in the early stages of growth and development in the mind and recur throughout life and prepare the ground for chronic symptoms such as depression (10). In a research carried out by Tajik and Kakavand (2016), it was demonstrated that the variables of emotional deprivation, failure, dependency, obedience and unrelenting standards can positively predict suicidal tendencies (11). Schemas originate from non-fulfillment of basic needs, especially emotional needs, in childhood and define the information about the relationship between the individual and the environment and activate negative automatic thoughts and finally lead to abnormal cognitive attitude and processing. To put it simply, schemas can be regarded as mental filters that make a person look at the world from a certain angle (12). On the other hand, young people turn to suicide when they do not know how to deal with their problems. People who commit suicide may suffer from mental illnesses, such as depression, that should be treated before the occurrence of suicide. Given that depression is very stressful for the patient and family and requires excessive costs for drug treatment, disability or hospitalization, there is a need for familiarity with appropriate treatments, including cognitive-behavioral therapy, in order to promote mental health services and create related policies in society. Therefore, in order to take a preparatory step and provide the ground for further investigations in this study, the effectiveness of cognitive-behavioral therapy in suicidal ideation and early maladaptive schemas of the girls referring to the social emergency of the

country is examined. Accordingly, the research question is whether cognitive-behavioral therapy is effective in suicidal ideation and early maladaptive schemas of the girls referring to the social emergency of the country.

Materials and methods

This study is an experimental research with a pretest-posttest control group design, which aims to determine the effectiveness of cognitive-behavioral therapy in suicidal ideation and early maladaptive schemas of the girls referring to the social emergency of the country. The statistical population comprises all the girls referring to the social emergency of the country in 2017-2018. The studied sample encompasses 50 of these girls (25 subjects in the experimental group and 25 subjects in the control group) who were chosen through simple random sampling method. In this study, SPSS-24 was applied. For data analysis, the following statistical methods have been employed: Descriptive statistics method such as frequency, percentage, mean and standard deviation and inferential statistics method. For hypothesis testing, analysis of covariance (ANCOVA) is used. For data collection in this study, Young Early Maladaptive Schema Questionnaire (2002- third edition, short form) and Beck Scale for Suicidal Ideation (1961) were applied.

Young Early Maladaptive Schema Questionnaire is a 90-item questionnaire that is able to measure 18 schemas in the form of five main domains. The items are scored on a 6-point Likert scale ranging from 1 (completely wrong in my case) to 6 (absolutely correct in my case). In the study performed by Sadouqi and colleagues, Cronbach's alpha coefficient was obtained to be 0.94 for the total scale and its validity was confirmed (13). In the current research, correlation coefficient of Young Early Maladaptive Schema Questionnaire is 0.88, which is significant at the level of P<0.001.

Beck Scale for Suicidal Ideation is a 19-item self-assessment tool which has been prepared in 1961 in order to measure suicidal attitudes, thoughts and plans. In this questionnaire, the first five questions are raised for screening so that if the students give zero to the first five questions, they lack suicidal ideation. A score between 1 and 5 represents suicidal ideation and a score between 6 and 19 indicates preparation for suicide and a score between 20 and 38 suggests the intention to commit suicide. This questionnaire is a reliable tool for measuring suicidal thoughts. In the study by Danitz and colleagues, internal consistency of this test was estimated to be 0.89 and inter-rater reliability was obtained to be r=0.69 and p<0.001 (14). The questionnaire has also been translated into Persian and its concurrent validity with General Health Questionnaire is equal to 0.76 and its reliability has been reported to be 0.95 using Cronbach's alpha method (15). In the present study, correlation coefficient of Beck Scale for Suicidal Ideation is 0.68 which is significant at the level of p<0.001.

Findings

In this research, 50 girls were selected from among those who referred to the social emergency department and were assigned into two experimental and control groups. In each group, 10 people (40%) were single and 15 people (60%) were married. In terms of education, each group included 10 subjects (40%) with bachelor's degree, 5 subjects (20%) with a degree higher than bachelor's degree and 10 subjects (40%) with a degree lower than bachelor's degree. In occupational terms, in both groups, there were 6 employees (26.66%), 5 university students (20%), 5 unemployed people (20%) and 8 housewives (33.3%).

Findings demonstrate that cognitive-behavioral therapy is effective in suicidal ideation and early maladaptive schemas of girls who referred to the country's social emergency. As shown in Table (1), the significance level in the Shapiro-Wilk test is greater than 0.05 and hence, data normality can be assumed with high confidence.

Table 1: Shapiro-Wilk normality test

	Kolmogorov-Smirnov test			Shapiro-Wilk test		
	Statistic	Degree of freedom	Significance level	Statistic	Degree of freedom	Significance level
Pretest	0.129	50	0.093	0.930	50	0.075
Posttest	0.107	50	0.200	0.952	50	0.258

The table shows Box's M statistic. This test evaluates the null hypothesis indicating that the observed covariance matrices of the dependent variables are equal among different groups. In Table (2), because F value is equal to 1.970, it is not significant at the error level given (0.059). Thus, the null hypothesis is not rejected, meaning that the covariance matrices observed among different groups are equal.

Table 2: Box test to examine the variance-covariance matrix homogeneity

Box statistic	F	Degree of freedom 1	Degree of freedom 2	Significance level
19.719	1.970	9	1485.91	0.059

To assess the homogeneity of error variances of early maladaptive schemas and suicidal ideation, Levene's test has been used. Based on the results of Table (3), it can be stated that the components under study have homogeneous variances and error variances have no significant difference statistically and ultimately, the condition of variance-covariance matrix homogeneity has been observed (p-value> 0.05).

Table 3: Homogeneity of variance test of early maladaptive schemas and suicidal ideation

	F	Degree of freedom 1	Degree of freedom 2	Significance level
Early maladaptive schemas	0.833	3	46	0.485
Suicidal ideation	1.868	3	46	0.153

In multivariate analysis of covariance test, Pillai's trace test, Wilks Lambda test, Hotelling's trace test and Roy's largest root test are calculated. As can be observed in Table (4), the significance level in all tests is less than 5%. In other words, the research hypothesis can be confirmed with 95% confidence. On the other hand, with regard to the eta squared value which is equal to 0.737, it can be determined that the independent variable (therapeutic method) explains a relatively high amount of the total variance; i.e. around 73% of the total variance of the dependent variable. It should be noted that since the two groups are compared, F value and the significance level and eta squared value of all tests are equal.

Table 4: Analysis of covariance results in relation to the significant difference between the scores of early maladaptive schemas and suicidal ideation in both groups

		P-value	F	Assumption degree of freedom	Error degree of freedom	Significance level	Eta squared value
Intergroup	Pillai's trace test	0.737	49.089	2	47	0.001	0.737
	Wilks Lambda test	0.263	49.089	2	47	0.001	0.737
	Hotelling's trace test	2.805	49.089	2	47	0.001	0.737
	Roy's largest root test	2.805	49.089	2	47	0.001	0.737

As provided in Table (4), by controlling the pretest, there is a significant difference between the experimental and control groups in early maladaptive schemas (p=0.005, F=69.62). Therefore, the first hypothesis is approved. In other words, cognitive-behavioral therapy has led to the creation of early maladaptive schemas in the experimental group with regard to the mean scores of the early maladaptive schemas of the experimental group compared to those of the control group. The amount of effect or difference is equal to 0.659. That is, 65.9% of individual differences in posttest scores of early maladaptive schemas are related to the effect of cognitive-behavioral therapy. As can be observed, cognitive-behavioral therapy is effective in suicidal ideation and early maladaptive schemas of the girls referring to the social emergency of the country.

Table 3: Analysis of covariance results of the research hypothesis about the significant difference between the scores of suicidal ideation and early maladaptive schemas

		Sum of squares	Degree of freedom	Mean square	F	Significance level	Eta squared value	Power of test
Intergroup	Early maladaptive schemas	17724.100	1	17724.100	69.629	0.001	0.659	1
	Suicidal ideation	570.025	1	570.025	32.41	0.001	0.474	1
Error	Early maladaptive schemas	9164.20	46	254.56				
	Suicidal ideation							
Total	Early maladaptive schemas	1708128.00	50					
	Suicidal ideation	28735.00	50					

Discussion and conclusion

According to the findings obtained from this study, cognitive-behavioral therapy is effective in suicidal ideation and early maladaptive schemas of the girls referring to the social emergency of the country. Thus, the desired hypothesis is confirmed. As can be seen in tables 2 and 3, the

findings suggest that cognitive-behavioral therapy can affect suicidal ideation and early maladaptive schemas of the girls referring to the social emergency of the country. That is to say, considering the means of the two groups, this difference in the experimental group is more tangible compared to the control group. The results of this research are consistent with the findings of the studies conducted by Chalak et al. (2018), Rahimi and Ebrahimi (2017), Tajik and Kakavand (2016), Safavi (2016), Bakhtar and Rezaeian (2016), Asefi et al. (2016) and Spirito et al. (2011).

Rahimi and Ebrahimi (2017) carried out a study entitled "Early maladaptive schemas and suicidal tendencies; testing the mediating role of anger rumination" and found that despite the theoretical importance of cognitive therapy models in the successful treatment of mental disorders, there is still no comprehensive cognitive structure of mental schemas ruling the suicidal behavior spectrum. The purpose of this research is to identify and examine the role of early maladaptive schemas in suicidal tendencies and determine the mediating role of anger rumination in the relationship between these two (16). Moreover, Tajik and Kakavand (2016) also conducted a study entitled "Predicting the suicidal tendency based on early maladaptive schemas in university students". The present study was performed using a descriptive-correlational method. The obtained results indicate the effectiveness of cognitive-behavioral therapy in reduced suicidal ideation and early maladaptive schemas (11). In the study by Safavi (2016), it was revealed that cognitive-behavioral therapy is effective in decreasing the risk of suicide attempt in young girls and boys (3). Spirito et al. (2011) proved that cognitive-behavioral therapy is an optimal treatment for depression in children and adolescents (17). Finally, it can be mentioned that the studies conducted previously on this issue are consistent with the results obtained in the current research. Schemes are deep and pervasive patterns or themes that are composed of memories, emotions, cognitions and body feelings. They are formed in childhood and adolescence and are applied as patterns for processing the subsequent experiences and can activate stress, inefficient attitude, pessimistic explanatory style, despair and helplessness in different life situations and events and can lead to various forms of psychological disturbances such as depression, anxiety, lack of job ability, substance abuse, interpersonal conflicts, personality disorders and many chronic mental disorders. The appearance of such schemas can cause reluctance to continue living and the tendency to commit suicide and end frustrations, pessimism, helplessness and so on. The results of the present and previous studies in this field demonstrate that cognitive-behavioral therapies can improve these maladaptive schemas in individuals. Creation of positive attitudes toward events in life, recognition of the situations for success and reduced anxiety and depression can be the result of these cognitive-behavioral therapies which eventually lead to a reduction in such schemas in people particularly in youths and adolescents who are still in the stage of mental growth and development. Besides, reduction in these schemas can, in turn, result in a decrease in suicide attempts in individuals. Life expectancy and continuation of life, hope for success in people throughout life and the elimination of conflicts and personality disorders and the like can have a role in reducing individuals' suicidal tendencies. Finally, it can be said that cognitive-behavioral training can cause to reduce maladaptive schemas and suicidal tendencies in female adolescents and youths.

In this study, there were limitations concerning the time of the test due to the conditions of the girls referring to the social emergency department. Further, because of the small sample size, generalization of results was limited. It is hoped that future researchers, in subsequent studies, add the factor of cognitive-behavioral therapies and investigate the role of depression in the girls referring to the emergency department of the country.

Acknowledgement

References

1.Mohammad Khani, Parvaneh. (2015). Epidemiology of suicidal thoughts and attempted suicide in girls in high risk areas of Iran. Journal of Social Welfare Research. Volume 4, No. 14, p. 174-157. [Persian].

2.liverdinia, Akbar. Yousefi, Neda (2014). Explaining the Idea of Suicide from the Perspective of Public Expansion Theory. Quarterly journal of social development (former human development). Volume 10. Number 1. P. 157-186. [Persian]

3.Safavi, Seyyed Hakimeh. (2015). The Effectiveness of Cognitive-Behavioral Therapy on İncreasing Hope in Students Suicidal Girl and Son. National Conference on Knowledge and İTechnology of Psychology, Educational Sciences and Comprehensive Psychology of Iran. [Persian].

4.Hawton C.(2003). Therapy for psychiatric problems. Trans Ghasem zadeh H. Tehran: Arjmand 2003;31447.[Persian].

5.Chalack, Mohammad Amin. Mirzaei, Parinaz. Ahmadi, Najmuddin Teshan, Nasrin (2018). The Effectiveness of Cognitive Behavioral Therapy on Reducing Suicidal Trend in Students. Sixth National Conference on Sustainable Development in Educational Sciences and Psychology, Social and Cultural Studies.

6.Rahimi, Zahra. Ebrahimi, Mohammad (2016). Initial maladaptive schemas and suicidal tendencies; Testing the role of anger ruminant mediator. The second international conference on modern research in social sciences. June 9, 1396. [Persian].

7.Jamshid Zahi Shahbakhsh, Abdolrahim. Asghari Ebrahim Abad, Mohammad Javad. Mashhadi, Ali. Second Degree, Seyed Hashem. (2015). The Effectiveness of Cognitive-Behavioral Therapy in Reducing Anxiety, Anxiety, and Panic Attack in Patients with Mitral Valvular Dislocation. Journal of Shaheed Sadoughi University of Medical Sciences, Yazd. Volume 24. Number 2. P. 351-340. [Persian].

8.Moazzeni, Taraneh;. Gholam Razaei , Simin and Rezaei ,Fatimah., (2018). Effectiveness of Schema Therapy on Severity of Depression and Suicidal Thoughts in Patients with Resistant to Depression. Bringing Knowledge Scientific Journal of Yasuj University of Science and Medical Sciences Volume 23, Number 2, June and July. (Continued number 127).

9.Young JE, Klosko JS, Weishaar ME.(2003). Schema therapy: A practitioner's guide. New York, NY:Guilford Press; 2003.

10.Tabatabaei Borzaki, Saeed. Sohrabi Faramarz. Karimi Zarchi, Mehdi. (2013). The Effectiveness of Emphasis on Schema Therapy Techniques on Depressed People's Schemes. Quarterly Journal of Counseling and Psychotherapy. 3 (11). P. 75-86.[Persian].

11.Tagic, Hedieh. Kakavand, Alireza. (2016). Predict the suicidal tendency based on the initial maladaptive schemas in the students. Third International Conference on Recent Innovations in Psychology, Counseling and Behavioral Sciences.[Persian].

12.Gaderi, Farzad Kalantari, Mehrdad. Mehrabi, Hossein Ali (2016). Effectiveness of group schema therapy on modifying early maladaptive schemas and reducing the symptoms of social anxiety disorder. Quarterly Journal of Clinical Psychology. Healthy Sixth Number twenty four.

13.Sadooghi Z, Aguilar-Vafaie M, Rasoulzadeh Tabatabaie K, Esfehanian N.(2008). Factoranalysisof the young schema questionnaire-short form in a nonclinical Iranian sample. IranianJournalof Psychiatry and Clinical Psychology.;14:214-21. [Persian].

14.Lee HS, Kim S, Choi I, Lee KU.(2008). Prevalence and risk factors associated with suicideideation and attempts in Korean college students.Psychiatry Investig;5:86-93.

15.Ismaili, Ali. Vatani, Mina. (2013). Forecasting suicidal ideation through initial maladaptive schemas in addicts under preservative treatment. Master's thesis, Islamic Azad University, Shahrood

Branch. Faculty of Literature and Humanities.[Persian].

16..Rahimi, Zahra. Ebrahimi, Mohammad (2017). Initial maladaptive schemas and suicidal tendencies; Testing the role of anger ruminant mediator. The second international conference on modern research in social sciences. June 9,.[Persian].

17.Spirito, A., Esposito-Smythers, C., Wolff, J., & Uhl, K. (2011). Cognitive-behavioral therapy for adolescent depression and suicidality. Child and Adolescent Psychiatric Clinics, 20(2), 191-204.