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Comparison of Emotional Schema Therapy and Schema Therapy in Reducing Suicidal Thoughts in Patients with Persistent Depressive Disorder

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Abstract

Aim: Persistent depressive disorder is a psychopathological entity with suicidal risk. This study aimed to compare the effectiveness of emotional schema therapy (EST) and Schema Therapy (ST) on suicidal thoughts in patients with persistent depressive disorder (dysthymia). **Method:** The present study was a type of quasi-experimental design with pre-test-post-test- multi-group follow-up. The statistical population of the present study consisted of all patients with permanent depression disorder (dysthymia) who were referred to the Shiraz County Psychological Counseling and Psychological Services Centers in 2017-2018. The sample consisted of 60 patients who were selected by a purposive sampling method and randomly assigned to two experimental groups based on emotional schema therapy (n = 20), a schema therapy group (n = 20), and a control group (n = 20). The therapies took eight sessions in 90 minutes, three days a week for three months. Additionally, the control group was provided with treatments as usual and did not receive any interventions. In the present study, Beck Scale for Suicide Ideation(BSS, Beck, et al. 1993), was used. The research data were analyzed using repeated-measures analysis of variance using SPSS.21. **Results:** The results showed that schema therapy reduced the suicidal thoughts in patients with persistent depressive disorder in the schema therapy group compared with the emotional schema therapy and control groups ($p < 0.001$). In the follow-up stage, the mean scores of suicidal thoughts in the schema therapy group were significantly lower than in the emotional schema therapy and control groups ($p < 0.001$). **Conclusion:** Based on the research results, emotional schema therapy and schema therapy can be used as effective methods to reduce suicidal thoughts, but schema therapy was more effective.

Keywords: Emotional Schema Therapy, Schema Therapy, Suicidal Thoughts, Persistent Depressive Disorder

Introduction

The World Health Organization (WHO) has been issuing warnings about this pathology for years, given that it affects over 300 million people all over the world and is characterized by a high risk of suicide (the second most common cause of death in those aged between 15 and 29) (World Health Organization (WHO), 2017). Persistent depressive disorder (PDD) is a highly debilitating psychological condition characterized by interpersonal difficulties and a high rate of comorbidities (Schramm, Klein, Elsaesser, Furukawa, & Domschke, 2020; Köhler, Chrysanthou, Guhn, & Sterzer, 2019). PDD is defined by a duration of depressive symptoms for a minimum of 2 years and ranging in severity from dysthymia to chronic major depression [according to DSM-5, (2013)]. The findings suggest that about a third of all depressed patients develop a chronic form of depression (Nübel, Guhn, Müllender, Le, Cohrdes, & Köhler, 2020). Compared to non-chronic forms of depression, PDD patients tend to have significantly earlier onset and higher levels of treatment resistance (Schramm, et al., 2020; Köhler, et al., 2019; Nübel, et al., 2020).

One of the leading concerns in depressive disorders is their close relationship with suicide attempts and completed suicides. According to WHO (2016), there are 800 000 suicides per year globally, and around 50% of these occur within a depressive episode. Based on meta-analytic studies, the two single most common diagnostic categories among suicide completers are affective disorders (diagnosed in 43.2% of suicide cases) and substance disorders (present in 25.7% of suicide cases), and individuals with MDD have nearly a 20-fold risk of suicide compared to the general population (Chesney, Goodwin, & Fazel, 2014). Suicidal ideation refers to thoughts or patterns of thinking that pertain to life being unfulfilling or not worth living and results in a preoccupation with self-destruction, and whether to act on these thoughts (Ford and Gómez, 2015). Ideation can range in intensity from a passive wish to die to active thoughts that involve a plan to end one's life (Turecki, Brent, Gunnell, O'Connor, Oquendo, et al., 2019).

Psychotherapy is indicated as an important remedy for the treatment of depression. Studies have been carried out that demonstrate the effectiveness of acceptance and commitment therapy (Ferreira, Mariano, de Rezende, Caramelli, & Kishita, 2022), cognitive-behavioral therapy (Nogami, Nakagawa, Kato, Sasaki, Kishimoto, et al., 2022), emotion-focused therapy (Greenberg, & Watson, 2022), psychodynamic therapy (Buchheim, Labek, Taubner, Kessler, Pokorny, et al., 2018.), mindfulness based cognitive therapy (Cladder Micus, Speckens, Vrijsen, Donders, Becker, & Spijker, 2018) and solution-focused therapy on depressive disorders (Malogiannis, Arntz, Spyropoulou, Tsartsara, Aggeli, et al., 2014). Schema therapy is defined as an integrated therapy model that includes cognitive, behavioral, experiential, and psychodynamic elements (Gülüm, & Soygüt, 2022).

According to this model, early maladaptive schemas are seen as the main source of psychopathology. Early maladaptive schemas are defined as non-functioning basic beliefs that are persistent, including the individual's judgments about himself and the outside

world, resulting from negative life experiences of the individual during infancy and childhood (Young et al. 2003; Gülüm, & Soygüt, 2022). The situation that which the child's physical and emotional needs are not met consistently, traumatic experiences, and unhealthy parental attitudes play an important role in the formation of maladaptive schemas (Güler, & Yüksel, 2021). The maladaptive schemas are similar in structure to the concept of basic belief in cognitive therapy and describe in a wider and more specific way the similar structure of the 18 maladaptive schemas and five schema domains (Zeynel, & Uzer, 2020).

Maladaptive schemas can remain hidden until they are triggered by any event, situation, or interaction during adolescence and adulthood, and they can create strong negative emotions when triggered (Wegener, Alfter, Geiser, Liedtke, & Conrad, 2013). Individuals react in three different ways to the negative emotions created by maladaptive schemas. Young, Klosko, & Weishaar, (2009) identified these three incompatible reaction mechanisms as schema avoidance, schema surrender, and schema compensation. These three mechanisms are seen as dysfunctional mechanisms because they maintain and reinforce the existence of maladaptive schemas. Schema Therapy has demonstrated effectiveness in treating disorders often characterized by suicidal ideation, such as chronic depression and Borderline Personality Disorder (Bamelis, Evers, Spinhoven, & Arntz, 2014; Renner, Arntz, Leeuw, & Huibers, 2013).

Another treatment that treats depression is emotional schema therapy. Emotional schemas are a series of interpretations and strategies utilized in dealing with emotions (Leahy, 2002). Leahy's emotional schemas model was based on 2 metacognitive and meta-emotion models (Leahy, 2002). According to his theory, everyone may experience negative emotions like anxiety, sadness, and anger, but few individuals are prone to more intense and severe emotions like anxiety and affective disorders, cognitive schema that people may have about emotions prone them to the development of these emotions (Leahy, 2002). These schemas may be normal or pathologic and maladaptive ones are associated with a higher level of anxiety, depression, and repetitive automatic thoughts and could be detected in patients' personality disorders and also in other psychological disorders (Leahy, Tirch, & Melwani, 2012). Leahy suggests 14 dimensions for emotional schemas: validation, comprehensibility, simplistic view of emotion, higher values, consensus, guilt, uncontrollability, numbness, demand for rationality, duration, acceptance, mental rumination, expression, and blaming others. For each person, one of these emotional schemas may be activated in similar situations (Gottman, Katz, & Hooven, 1996).

There are few studies in the field of emotional schemas. Most of them were done on anxiety disorders and substance abuse and the like (Hasani, Naderi, Ramazanzadeh, & Pourabbass, 2014; Hasani, Tajodini, GhaedniyaieJahromi, & Farmani-Shahreza, 2014). However, only one study has focused solely on the differences between major depressive disorder and bipolar disorder in emotional schemas. Due to the emergence of the emotional therapy schema, extensive studies have not yet been conducted to examine it,

and the need for study in this field of therapy is quite obvious. In addition, due to the differences between the two therapies based on emotional schemas and schema therapy in terms of duration of intervention and protocol-oriented or flexibility of the two treatments, it is necessary and important to examine the differences in the effectiveness of the two therapies. Therefore, the present study aimed to compare the effectiveness of emotional schema-based therapy and schema therapy on suicidal thoughts in patients with persistent depressive disorder (dysthymia).

Methods

The present study was a type of quasi-experimental design with pre-test-post-test- multi-group follow-up. The statistical population of the present study consisted of all patients with permanent depression disorder (dysthymia) who were referred to the Shiraz County Psychological Counseling and Psychological Services Centers in 2017-2018. Selecting the sample size of the Present Study according to the test power (0.80), effect size (0.50), and Confidence Level (0.05) was considered for each sample group of 20 people was selected for each group. Following the clinical psychologist's diagnosis, it identified 60 patients among these patients. Random allocation in this study was done through even and odd numbers, two experimental groups (Emotional Schema Therapy Sessions, Leahy, et al., 2012: n= 20) and (Schema Therapy Sessions Young, et al., 2009: n=20) and a control group (n=20). Participants' inclusion criteria comprise diagnostic criteria for permanent depression disorder based on the diagnosis of clinical psychologists based on structural interviews SCID-5-RV: DSM 5. Moreover, the age between 20 and 50 years, obtaining written consent for research cooperation, having no addiction, no other psychological disorders, and no use of psychiatric drugs. The participant was excluded if they displayed psychotic symptoms or drug abuse and if they missed more than two sessions. To conduct treatments, six psychological counseling and services centers (from each area, one psychological center) were then divided into six urban areas and some of these centers in each area were chosen accidentally (using odd and even numbers). Patients were referred to a psychiatrist for a diagnostic interview for evaluation with SCID. After selecting the samples and evaluating them by the psychiatrist, the patients were referred to the researcher. After adapting the patients to the inclusion and exclusion criteria and their selection, they signed the consent form. The pre-test was performed using the Beck Scale for Suicide Ideation (BSS). Then, each group was exposed to two types of experimental intervention (Emotional Schema and Schema Therapy). The therapies took eight sessions in 90 minutes, three days a week for three months. Additionally, the control group was provided with treatments as usual and did not receive any interventions. After finishing treatment sessions, the post-test was completed by three groups. Finally, the intervention effect through follow-up after three months was tested. In this study, consent was received from the groups to participate in the study. They were assured that their names would not be included in the research and were completely free to withdraw from the research during the tests.

Beck Scale for Suicide Ideation (BSS): The BSS contains 21 statement groups each assessing various aspects of suicidal ideation. Each statement group consists of three sentences that describe different intensities of suicidal ideation, representing a three-point scale (0 to 2). The total BSS score can range from 0 to 38, with higher values indicating a greater risk of suicide. Beck and Steer (1993) do not distinguish different degrees of suicidal risk. In Iran, Anisi, Fathi Ashtiani, Salimi, and Ahmadi (2005) have carried out a study using this scale in soldiers, to find its psychometric properties. They found that its convergent validity with depression and general health questionnaires was 0.76 and 0.57, respectively. Additionally, Cronbach's alpha was excellent at 0.95. In the present study, the internal consistency for the scale was 0.83.

Table 1 presents a summary of the treatment sessions program

Sessions	**Emotional Schema Therapy Sessions (Leahy et al.,2012)**	**Schema Therapy Sessions Young, et al., 2009).**
Session 1 and 2	The first session is to provide education about emotion to increase the patient's understanding of emotion, a general introduction to emotional therapy schema, expression of logic and stages of intervention, and objectives of the sessions. Defining and explaining emotional schemas and their effect on our emotions and behaviors with examples.	Session 1 and 2: Assessing and teaching schema therapy, explanation of the instructions and the group work rules, and simple description of schema therapy. The first two sessions were aimed at explaining the nature of cognitive emotion regulation, perceived stress, early maladaptive schemas, perception of diseases and quality of life, and their evolutionary foundations and mechanisms. At the end of the first two sessions, the nature of asthma disorder was formalized based on the schema therapy approach.
Session 3 and 4	Explains ineffective strategies for regulating emotion and giving examples and finding ineffective strategies in the patient's life.	Sessions 3 and 4: Introduction, instruction, and application of challenging schema challenge cognitive techniques such as schema validation, proposing a new definition for schema evidence, conducting a dialogue between the "schema side" and the "healthy side", designing training cards, and filling the schema form. Teaching the schema therapy cognitive techniques was aimed at enabling the subjects to use cognitive techniques in reasoning against the schema and argue the schema validity at a rational level.
Sessions 5 and 6	Accreditation and normalization of emotions to accept hard emotions such as feelings of distress, using the allegory of welcoming guests to strengthen the belief that emotions are transient. Linking difficult emotions to transcendent values Using examples, use the metaphor of monsters inside the bus to teach the atmosphere for emotions.	Sessions 5 and 6: Introducing and teaching emotional (experimental) techniques to enable the subjects to investigate the schema transformation roots at an emotional level, introduction, and application of imaginary conversation techniques, the imagination of traumatic incidents, writing letters to parents, and mental imagery for behavioral pattern interruption. The interventions and group work in these sessions were aimed at helping the subjects confront the schemas and enable them to express their anger via their childhood incidents through experimental

		techniques, such as mental imagery and dialogue; therefore, they were able to interrupt the schema cycle.
Session 7 and 8	Mindfulness training and mindfulness-based exercises such as progressive muscle relaxation, positive mental imagery, and diaphragmatic breathing. Evaluate the achievement of treatment goals, prepare the patient for the end of treatment, and help to continue the new learning by examining possible obstacles and problems in this direction and trying to eliminate or reduce them.	Session 7 and 8: Teaching and application of behavioral pattern interruption, encouraging the subjects to leave maladaptive coping styles, and practicing efficient coping behaviors, such as behavior change, motivation development, reviewing the advantages and disadvantages of continuing a behavior, practicing healthy behaviors, and making the subjects ready for the end of the sessions.

Results

In the treatment group based on emotional schema therapy, 13 people (65%) were women and 7 people (35%) were men. Moreover, in the schema therapy group, 12 were women (60%) and 8 were men (40 %). In the control group, 11 were women (55%) and 9 were men (45 %). Furthermore, the mean age of the emotional schema therapy group was 32.75. Also, the mean age of the schema therapy group was 33.05. In addition, the mean age of the control group was 32.50. The groups were almost identical in terms of age distribution, gender, education, and occupation status. Matching was conducted through a one-way analysis of variance, and there was no significant difference between the groups ($P \leq 0.05$). The Chi-square test was used to measure the difference between the frequency of gender, educational attainment, and occupation, and the difference between the frequency of gender, educational status, and occupation was not significant ($P \leq 0.05$). The descriptive statistics of the collected data are in Table 1.

Table 1: Mean and SD of suicidal thoughts in two experimental and control groups

Variable	Phase	Emotional schema therapy group		Schema therapy group		Control group	
		Mean	SD	Mean	SD	Mean	SD
suicidal thoughts	Pre-test	26.90	3.52	28.00	2.33	27.55	2.68
	Post-test	11.95	2.37	4.20	1.47	31.15	2.43
	Follow up	14.65	2.49	7.70	2.10	32.85	2.60

The mean score of suicidal thoughts in the group of schema, emotional therapy, and schema therapy decreased after post-test and follow-up. In the control group, no decrease in suicidal thoughts was observed after the post-test and follow-up. Before performing the statistical analysis, the normality of the data was first measured by the Shapiro-Wilk test and the results showed that the significance level of suicidal thoughts scores was higher than the criterion value of 0.05. Homogeneity of variances was also assessed by the Leven test and a probability value greater than 0.05 was obtained for suicidal thought scores. The first presupposition of the analysis of variance with repeated measures was

the equality of the covariance matrix, which was equal to the covariance matrix because of the non-significance of the box test (P = 0.17, Box's M = 54.25). Mauchly's sphericity test was used to validate a repeated measure analysis of variance (ANOVA). So, Mauchly's sphericity test was also observed (p = 0.08). Also, by performing the Leven test, it was found that the assumption of the equality of variances was observed (p = 0.35).

variable	Variance resources		SS	df	MS	F	P	Effect size
suicidal thoughts	Within-group	Time	2475.20	1	2475.20	796.76	0.001	0.93
		Group*time	3427.21	2	1713.60	551.60	0.001	0.95
		Error	177.07	57	3.10			
	Between-group	Group	9556.63	2	4778.31	325.30	0.001	0.91
		Error	837.25	57	14.68			

In Table 2, the results of repeated measures analysis of variance test are reported to examine the differences between the research sample in three stages: pre-test, post-test, and follow-up. According to this table, the effect of measurement time on the mean scores of suicidal ideation processing was significant (p <0.001). Also, the interaction between measurement time and group on the mean scores of suicidal thoughts was significant (p <0.001). In addition, the effect of the group on the mean scores of suicidal thoughts was significant (p <0.001).

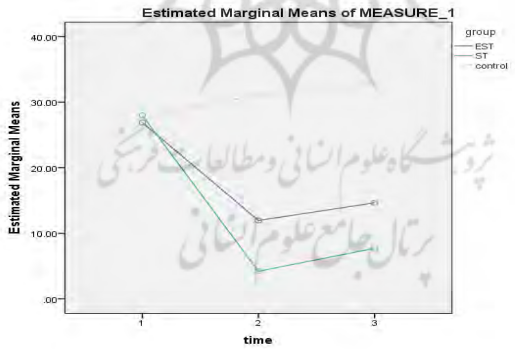

Figure 1: Effect of emotional schema therapy and schema therapy on suicide thought by groups and test stages

Figure 1 shows the effects of emotional schema therapy and schema therapy by groups and test stages. Since the interaction was significantly different between the intragroup factor of time of measurement and the intergroup factor of the group, so the simple

intergroup effect concerning intragroup factor levels and pairwise comparison of time was investigated using Bonferroni post hoc.

Table 3: Pairwise comparisons of three groups of emotional schema therapy, schema therapy, and control group

Variable	Group (i)	Group (j)	Mean Difference	Error	Sig
Suicidal thoughts	Emotional Schema Therapy	Schema Therapy	4.53	0.7	0.001
	Emotional Schema Therapy	Control	-12.68	0.7	0.001
	Schema Therapy	Emotional Schema Therapy	-4.53	0.7	0.001
	Schema Therapy	Control	-17.21	0.7	0.001
	Control	Emotional Schema Therapy	12.68	0.7	0.001
	Control	Schema Therapy	17.21	0.7	0.001

According to Table 3, based on the Bonferroni post hoc test, the mean scores of suicidal thoughts in the schema therapy group were significantly lower than the emotional schema therapy group ($p < 0.001$) and the control group ($p < 0.001$). Also, the mean scores of suicidal thoughts in the emotional schema therapy group were significantly lower than in the control group ($p < 0.001$).

Table 4: Pairwise comparison of three times (pre-test, post-test, and follow-up)

Variable	Stage (i)	Stage (j)	Mean Difference	Error	Sig
Suicidal thoughts	Pre-test	Post-test	11.71	0.26	0.001
	Pre-test	Follow up	9.08	0.32	0.001
	Post-test	Pre-test	-11.71	0.26	0.001
	Post-test	Follow up	-2.63	0.16	0.011
	Follow up	Pre-test	-9.08	0.32	0.001
	Follow up	Post-test	2.63	0.16	0.011

According to Table 4 and based on the Bonferroni post hoc test, there was a significant difference between the mean scores of suicidal thoughts in pre-test and post-test ($p < 0.001$). There was also a significant difference between the mean scores of suicidal thoughts in the pre-test and follow-up stages ($p < 0.001$). But there was no significant

difference between the mean scores of post-test and follow-up suicidal thoughts (p = 0.11).

Discussion

This study aimed to compare the effectiveness of emotional schema therapy and schema therapy on the processing of suicidal ideation in people with persistent depressive disorder. The results showed that in the post-test and follow-up phase of schema therapy, there was a more significant positive effect on reducing and continuing to reduce patients' suicidal ideation than in emotional schema therapy.

Findings of numerous studies, Maleki, Naderi, Ashouri, and Zahedi (2015), Herts, & Evans, (2021), Gülüm, & Soygüt, (2022), and Ahmad Gorji, Fati, Asgharnejad Farid, and Malakouti (2008) consistently showed that schema therapy affects reducing suicide and suicidal ideation. Also, the findings of this study with the results of Hatamian& Nezhad (2018), and Hassani and Mir Aghaei (2013) concluded that a few cognitive regulation strategies of emotion are a strong predictor of suicidal ideation. Suicidal ideation is one of the most important risk factors for suicide. Despite various studies on the factors impacting suicide, Ribeiro, Linthicum, Joiner, Huang, Harris, et al. (2021) believe that suicide is the most crucial aspect of suicidal ideation and can predict suicide better than other protective and risk factors. Perhaps one reason for the variability of suicidal ideation is the effect of triggers on suicidal ideation and the mixing of emotional experiences with them. Despite strong clinical evidence of experiencing negative emotions such as anger, sadness, frustration, and abandonment in people with suicidal ideation (Wetherall, Cleare, Eschle, Ferguson, O'Connor, et al., 2018), fewer studies have systematically examined early maladaptive schemas of suicidal ideation and suicide attempt.

Interestingly, results also are consistent with pioneering work that highlighted cognitive themes such as inadequacy; failure, loss, and worthlessness that were proposed to be most strongly associated with depression (Beck, 1979). A suicide attempt is a dysfunctional strategy for coping with life problems, and people with EMS may find a maladaptive way of dealing with the issues involved, especially with their emotional needs. Dysfunctional schemes result from distorted processing of information in which the cognitions experienced in a situation are determined by previous experiences, stressful events, and the occurrence of a psychiatric disorder, and these schemas may lead to suicidal behavior (Wenzel, 2012). The most frequent EMS correlations were found in defectiveness/shame, social isolation, and disconnection, which may be indicators of increased risk of suicide. These findings may help to assess the clinical potential of suicide risk; it was already found that these three EMSs are present in patients with repetitive suicide behaviors (Dale, Power, Kane, Stewart, & Murray, 2010).

There are several theoretical supports for suicide in depression that relate cognitive function to suicidal thoughts and behaviors during life, and the phenomenon of suicide as a correlation or consequence of depression from the very beginning of the formation of cognitive theory. Based on numerous studies and clinical experiences, Beck and colleagues concluded that depressed people have negative thoughts about themselves, their world, their experiences, and their future, see others as rejecting and unsupportive and see themselves as flawed. They know the important ones. According to Beck's (1979)

theory, there is a suicidal belief system (SBC) that has four main themes. Modeling based on this theory has shown that these four issues are: helplessness, not being loved, intolerance of helplessness, and feeling tired and helpless. This way of thinking leads the patient to believe that there is no solution to his problems and therefore one of the concepts in the pathological pathology of these patients is their weakness in problem-solving (Ellis, Schwartz& Rufino, 2018). Schema Therapy directly targets schemas originating from early adversity and unmet needs via therapeutic relationships (i.e., limited repainting), cognitive-behavioral, and emotion-focused techniques (Arntz, & Jacob, 2017). For example, healing the social isolation schema might involve encouraging clients to focus on the similarities that they share with others, processing childhood experiences of isolation or social rejection, and providing a supportive and accepting therapeutic relationship (Castille, Prout, Marczyk, & Shmidheiser, 2007).

In support of the use of schema therapy to reduce suicidal ideation, Schemas are also modifiable via corrective experiences outside the therapeutic context, such as positive social experiences (Cruwys, Dingle, Hornsey, Jetten, & Walter, 2014). Therefore, as recommended by Chu, Buchman-Schmitt, Stanley, Hom, and Tucker, et al (2017), and consistent with Klonsky, Pachkowski, Shahnaz, & May, (2021) Three-Step Model, enhancing social connections and engaging in social activities may reduce or prevent suicidal ideation and subsequent behavior. However, social connection in and of itself is not sufficient for schema-healing. Novel experiences that counter the individual's specific schemas and associated maladaptive coping styles are needed to facilitate schema modification. Relational experiences that challenge a person's maladaptive schema (e.g., feeling a genuine sense of belonging) can lead them to update their existing mental representations or create new representations to accommodate these divergent experiences (Fraley, 2019). In contrast, if an individual engages in more social activities but continues to adopt maladaptive coping responses (e.g., overcompensating for the social isolation schema by becoming a chameleon to fit in with the group), the schema will be perpetuated (Young et al., 2009).

This study was conducted in Shiraz and subjects with chronic depressive disorder, so its generalization to other communities should be done with caution. In this study, many influential psychological factors have not been controlled. Another limitation of the present study is the unavailability of the exact number of people with chronic depressive disorder in Shiraz and the lack of cooperation of some clients. Also, because research has shown that women use the mental rumination response style more than men, the other limitation of the present study was that more women than men. It is suggested that the effect of this variable be controlled in future research. The study suggested that people with the chronic depressive disorder could also benefit from the results. It is suggested that in the treatment of people with chronic depressive disorder, focus on therapy based on emotional schemas to reduce rumination and schematic therapy to reduce the severity of depression and process suicidal ideas to be applied to these groups of people.

Conclusion

In summary, the results showed that both treatments were effective in improving suicidal ideation processing in patients with the major depressive disorder compared to the control

group and the effectiveness of schema therapy was higher than emotional schema therapy. It can also be said that chronic depressive disorder if left untreated, is a persistent problem that over time leads to its stabilization and even development. This underscores the fact that the likelihood of recovery from major depressive disorder is very small without the intervention of a therapeutic agent, and at least in adulthood. Therefore, it can be concluded that therapists can use schema therapy as one of the forms of cognitive-behavioral therapy to reduce suicidal ideation in patients with major depressive disorder.

Disclosure Statements

Conflict of interest

The authors state no conflict of interest in the study.

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