

## The effectiveness of cognitive hypnotherapy on emotional regulation and rumination in divorced individuals

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### ABSTRACT

The present study aimed to determine the effectiveness of cognitive hypnotherapy on emotional regulation and rumination in divorced individuals. The research method was a semi-experimental study with a pre-test-post-test design with a control group, and the statistical population of this study consisted of all divorced individuals of the First Companion Company in Tehran. Due to the conditions and limitations resulting from the outbreak of the coronavirus, 10 samples in each group and a total of 20 people were selected in a non-random purposeful manner and were divided into two experimental and control groups by drawing lots. The research tools included the Nolen-Hoeksima, Maro, and Fredrickson Ruminative Response Scale and the Gross and John Emotion Regulation Questionnaire. Individuals in the experimental group underwent cognitive-behavioural hypnotherapy treatment in 10 sessions of 1:15 hours, in other words, a total of 12:30 hours, but no intervention was performed for the control group. At the end of one week after the end of the treatment, a post-test was taken from both groups and the data obtained were analyzed using univariate and multivariate analysis of covariance and SPSS-21 software. The results of the present study showed that the independent variable, unlike the suppression component, the cognitive appraisal component ( $P < 0.01$ ,  $F = 27.96$  (16 and 1)) affected emotion regulation. In addition, the use of the Bonferroni test showed that the adjusted means of cognitive appraisal ( $P < 0.01$ ,  $SE = 1.30$ ,  $\Delta\bar{x} = 12.73$ ) in the experimental group increased compared to the control group. Implementing the independent variable at a significance level of 0.01 affected the rumination of the participants in the study ( $P < 0.01$ ,  $F = 12.150$  (17 and 1)). Comparison of the adjusted means of the two experimental and control groups using the Bonferroni post hoc test showed that the implementation of the independent variable caused the average rumination scores in the experimental group to decrease compared to the control group ( $p < 0.01$ ,  $SE = 1.31$ ,  $\Delta\bar{x} = 16.06$ ).

## **Introduction**

Divorce is one of the most bitter and stressful phenomena in life that disrupts the social network, increases anxiety, depression, impulsive behavior, etc., and its extremely destructive effects are enough to increase the divorce rate in at least the next two generations and make it difficult for children to adapt. Problems after divorce vary depending on family, social, cultural, and even gender conditions. In other words, the negative consequences of divorce in women are more diverse than in men, and women who face cultural and social limitations face more problems and are naturally exposed to higher psychological stress (1). It is not yet clear whether poor emotional regulation causes divorce or whether divorce causes this poor emotional regulation. The capacity to appropriately regulate emotions is the foundation of more socially adaptive functions, and weaknesses in emotional regulation may be related to internal disorders.

Emotion regulation involves a range of conscious and unconscious cognitive and behavioral strategies that are used to reduce, maintain, or increase an emotion. In the process model of emotion regulation, Gross assumes that during the occurrence of a full-fledged emotional response, various emotion regulation strategies are involved. Before the emotion is fully experienced, evaluations of emotional cues are made. These emotional cues can be examined from different perspectives, and after these evaluations, experiential, behavioral, and physiological responses may be initiated (2). Each stage of the emotion generation process has a potential regulatory goal, and emotion regulation skills can be applied at different points in this process. Gross's process model of emotion regulation consists of five stages, and each stage includes a series of adaptive and a series of maladaptive strategies (3), among which people with emotional problems use maladaptive strategies such as rumination, avoidance, and ... more (4). In the beginning of an emotion or the choice of a situation, there are factors that place the person in a state of emotional arousal or move him away from that situation (avoidance stage). In the second stage (situation), changes can be made in the process of emotion production by modifying the situation. In the third stage (attention), one of the ways to change and regulate emotion is to change direction or expand attention (5). The three ways to expand attention include distraction, concentration, and rumination (4). In the fourth stage of emotion production (evaluation), creating cognitive changes is the task of regulation in this stage, and one of its strategies is cognitive reappraisal. The last stage of emotion production is the response stage, and response adjustment constitutes the last part of the emotion-regulating process (thought suppression) (5). According to Gross's emotion regulation process model, the main emotion regulation strategies include reappraisal (reconstructing an emotional state as a state with less emotion) and emotion suppression (preventing the external display of the emotional state when excited). The main difference between reappraisal and emotion suppression strategies is that reappraisal is used before emotions are fully experienced, whereas emotion suppression is used after experiential, behavioral, and physiological responses have begun (6).

Some individuals use thought suppression as an adaptive coping strategy in the face of distress, denying their distress by using defensiveness, and thus experiencing fewer negative emotions than others (7). Individuals resort to thought suppression for the purpose of self-regulation and emotion regulation, especially in regulating thoughts with emotional content, which is a form of cognitive evidence and internal monitoring (8), and thought suppression used to regulate negative emotions is influenced by self-monitoring processes (9). Therefore, the extent to which individuals are successful in suppressing their thoughts varies. Some people are able to regulate negative emotions by efficiently and effectively suppressing intrusive thoughts and memories that evoke fear, anxiety, or anger, which can reduce pathological symptoms. The decline in inhibitory control in some people, especially with age, prevents them from intentionally and consciously forgetting unwanted thoughts and memories (10).

All individuals enter a self-regulatory cycle after experiencing stress, but those who are cognitively

more vulnerable have difficulty exiting this cycle. When individuals are faced with a negative life event, they focus on the discrepancy between the current state and the desired state rather than focusing on the problem (11). From a self-regulatory perspective, rumination serves a specific function: it reflects the discrepancy between the achievement of a goal and the current mood (12). Rumination is a response that may be triggered by various events in an individual's life or by various intense emotions and feelings, such as depression and anxiety. Just as life events can be viewed as external stimuli that lead to negative behaviors, thoughts, and emotions, rumination can also be an internal stimulus that produces these negative behaviors, thoughts, and emotions (13). Rumination is a set of thoughts and behaviors that repeatedly direct a person's attention to negative emotions and feelings, as well as to the nature and implications of these emotions, including their causes, implications, and consequences (14). Since rumination is an intrusive, disruptive, and time-consuming process, it has been classified as a maladaptive emotion regulation and coping strategy (15, 16). Naturally, attention to the incongruence should lead to finding a solution, abandoning goals, or distracting oneself. All of these are ways to escape the cycle of self-regulation. People who are more vulnerable have difficulty escaping the cycle of self-regulation, and it is very difficult, if not impossible, for them to ignore perceived incongruence, which can lead to persistent self-regulation (11). When this incongruence is resolved through achieving a desired goal or reappraisal of the goal, rumination should theoretically end; However, when mood is low, rumination leads to maladaptive approaches to problem solving (12).

In this regard, Murphy et al. (17) proposed that rumination is a maladaptive emotion regulation strategy used in the face of negative emotions and is associated with impaired inhibition and flexibility, increased connectivity between emotional and affective processes during an individual's attempt to reappraise emotional content, and inappropriate integration of emotional and affective processes in brain regions associated with cognitive reappraisal. Aftab et al. (18) concluded that negative affect initiates rumination, which in turn leads to increased negative affect and rumination; during this process, thought suppression interacts with rumination, leading to the maintenance or intensification of negative emotions.

Hypnosis provides a powerful tool for integrative cognition, involving a combination of cognitive, somatic, perceptual, physiological, visceral, and muscle and limb (motor) awareness changes. Some have argued that by integrating the techniques of both cognitive-behavioral therapy and hypnosis, the shortcomings of each treatment can be compensated for and the effectiveness of cognitive-behavioral therapy can be improved to some extent. Cognitive-behavioural hypnotherapy focuses largely on changing automatic behaviours and thoughts. Cognitive-behavioural hypnotherapy techniques include relaxation, guided imagery, cognitive restructuring, gradual desensitization, and self-hypnosis training, which affect cognitive distortions, negative self-teaching of thoughts, automatic beliefs, schemas, and negative self-hypnosis. The components of hypnotherapy include: 1) relaxation training, 2) demonstrating the power of the mind over the body, 3) strengthening the ego, 4) expanding awareness, 5) symptom modulation and regulation, 6) self-hypnosis, 7) positive mood induction, and 8) post-hypnotic conditioning (19). The present study aimed to answer the following question: Is cognitive hypnotherapy effective on emotional regulation and rumination in divorced individuals?

## **Research Method**

A semi-experimental research method with a pre-test-post-test design with a control group. The statistical population of this study consisted of all divorced individuals of the First Companion Company in Tehran. In the present study, a non-random purposive sample was selected from the entire statistical population from among those who were eligible to enter the study and who entered the study with full consent. Due to the circumstances arising due to the outbreak of the coronavirus and in coordination with the supervisor, 10 people in each group were selected, for a total of 20 people. Of course, the number of the experimental group was 12 people, of which 2 people dropped out of the experimental group, one of whom was infected with the coronavirus and the other was in a relationship

with another person.

Entry criteria

- Having at least a high school diploma
- Not receiving any psychotherapeutic medication
- Not receiving other psychotherapies at the same time
- Willingness to cooperate

Exclusion criteria

- Not having any physical illness
- Having complete satisfaction

Ruminant Response Scale: The Nolen-Hoeksima, Maro, and Fredriksson Ruminant Response Scale (20) consists of 22 questions rated on a Likert scale from “rarely = 1” to “almost always = 4”. Nolen-Hoeksima et al. (21) reported a negative correlation of this instrument with the Life Orientation Test and the Activities and Social Support Scale as an indicator of validity, and Nolen-Hoeksima et al. (20) reported a Cronbach’s alpha coefficient of 0.89 for the entire scale.

Emotion Regulation Questionnaire. The Gross and John (22) Emotion Regulation Questionnaire consists of 10 questions that assess two subscales of thought suppression and reappraisal on a Likert scale from strongly disagree = 1 to strongly agree = 7. Gross and John (22) reported Cronbach's alpha coefficients ranging from 0.82 to 0.68 and correlations of thought suppression and reappraisal with the Trapnell and Campbell 1999 rumination scale of 0.19 and -0.29, respectively.

### **Cognitive Hypnotherapy Treatment Protocol**

This method involves a combination of hypnotherapy and cognitive behavioural therapy, and the therapist is allowed to use any cognitive behavioural therapy technique that is applicable in hypnotherapy. Accordingly, homework is given in each session, which is reviewed by the therapist and the client in the next session. In general, the cognitive hypnotherapy protocol consists of 16 sessions, one session per week, which may change according to the needs of the individual. The protocol for this treatment is as follows, and the sequence of the treatment process changes according to the needs of the client at the discretion of the therapist.

Clinical assessment, history taking and history taking	Session 1
Cognitive-behavioral therapies tailored to the client	Session 2-5
Hypnotherapy	Session 6-7
Cognitive restructuring under hypnosis	Session 8-10
Paying attention to change and inducing positive states	Session 11,12
Active interactive training	Session 13
Social skills training	Session 14
Behavioural activation	Session 15
Training in mindfulness and concentration	Session 16

Table 3-2 - Cognitive Hypnotherapy Protocol

The cognitive hypnotherapy protocol is based on the book Cognitive Hypnotherapy by Aladdin.

#### **Session 1: Clinical Assessment**

Before starting this treatment method, we must first take a detailed history from the client and take a history. In the case approach, we can interpret and design a regulated treatment protocol for each individual in an individualized manner. Case formulation is carried out at three levels: 1) Case formulation stage 2) Problem or syndrome formulation stage 3) Condition or situation formulation stage

### Session 2-5: Cognitive-behavioral therapy

In these sessions, we will address cognitive-behavioural therapy according to the client's condition. The goals of these sessions with cognitive-behavioural therapy content are actually to identify and reconstruct the client's incorrect beliefs. Cognitive-behavioural therapists examine the assumptions, validation, and meaning of the beliefs that lead to the disease by guiding the patient to examine the assumptions, validation, and meaning of the beliefs that lead to the disease. It is the client's need that determines whether to start with hypnotherapy or cognitive-behavioural therapy first. If the patient is more involved in ineffective cognition and rumination, we start with cognitive-behavioural therapy first. In patients who are involved in anxiety and similar situations, hypnotherapy is recommended first. The number of cognitive hypnotherapy sessions is determined according to the patient's needs and the severity of their symptoms. In general, these sessions identify the patient's cognitive distortions so that the client can identify and classify them. Patients are also advised to complete the ABC form. This exercise leads to identifying the client's ineffective thoughts, cognitive distortions, and negative emotions, which prepares the patient to challenge negative thoughts. Then, by performing the DE steps, the thoughts are challenged. He pulls and observes the resulting changes.

### Sessions 6-7: Hypnotherapy

These sessions are dedicated to hypnotherapy. In the first two or three sessions, we focus on inducing calm, demonstrating the power of the mind, expanding awareness, strengthening the ego, self-hypnosis training, and providing post-hypnosis suggestions.

### Sessions 8 to 10: Cognitive restructuring under hypnosis

We focus on cognitive restructuring under hypnosis with the method of returning to the event, editing and deleting unconscious contents, symbolic imagery technique in dealing with cognitive restructuring and unconscious exploration.

### Sessions 11-12: Paying attention to change and inducing positive states

In this stage, we focus on inducing positive states, changing the individual's thought direction, and changing attention.

### Session 13: Active Interactive Training

This method causes habits to be broken and the person communicates effectively with the environment, with maladaptive dissociation, the person can achieve adaptive dissociation and remove feelings of pessimism, helplessness, and toxic thoughts.

### Session 14: Social Skills Training

A session is dedicated to teaching social skills, and social skills can be done using hypnosis and through visual training and practice.

### Session 15: Behavioral Activation

We encourage clients to take action to improve themselves. Planning, visual training, self-reinforcement, and post-hypnotic suggestions are used to increase motivation, etc.

### Session 16: Training in mindfulness and concentration

The presence of the mind is easily achieved during hypnosis, which increases the presence of the mind and reduces the maladaptive response. In this session, we will discuss education and hypnotherapy, such as body scan training, etc.

The conceptualization of the cognitive-behavioural hypnotherapy case emphasizes the role of cognitive distortions, negative self-teaching, automatic irrational thoughts and beliefs, negative schemas and rumours, or negative self-hypnosis in understanding a patient's emotional disorder. An efficient way to obtain this information in cognitive-behavioural hypnotherapy treatment is to use the

case formulation approach described by Alaeddin.

**Research Findings**

The mean and standard deviation of the age of the participants in the experimental group was  $4.56 \pm 10.32$  and the control group was  $5.32 \pm 10.33$ . There were 5 female participants and 5 male participants in both groups. The level of education of 2 participants in the experimental group was a diploma, 5 had a bachelor's degree, and 3 had a master's degree. In the control group, the level of education was 1 with a diploma, 4 with a bachelor's degree, and 5 with a master's degree. It is worth noting that, as the table above shows, the use of statistical tests showed that there was no significant difference between the groups in terms of demographic variables.

Table 2. Mean, standard deviation, and Shapiro-Wilk index of the components of emotion regulation (cognitive appraisal and suppression) in the experimental and control groups in the pre-and post-test stages

Shapiro-Wilk (NS: Not Significant)		Mean $\pm$ standard deviation		Emotion regulation	
Control group	Experimental group	Control group	Experimental group		
0/956(NS)	( 0/932NS)	2/87 $\pm$ 24/40	7/21 $\pm$ 26/20	Pre-test	Cognitive assessment
0/887(NS)	( 0/891NS)	4/81 $\pm$ 23/00	4/06 $\pm$ 37/00	Post-test	
0/916(NS)	( 0/952NS)	4/72 $\pm$ 15/61	5/36 $\pm$ 16/70	Pre-test	Repression
0/967(NS)	( 0/864NS)	3/95 $\pm$ 14/40	3/53 $\pm$ 14/40	Post-test	

**Note 1: NS not significant**

Table 2 shows that the Shapiro-Wilk index is not significant for any of the two components of emotion regulation in the experimental and control groups and in the two pre-test and post-test stages at the 0.05 level. This finding indicates that the data distribution is normal.

The assumption of homogeneity of variance-covariance was examined using the "M-Box" statistic, and the results showed that the assumption was valid among the data of the present study (Box's M = 0.48, (P = 0.936, F = 0.14). In addition, the result of Bartlett's sphericity test with 2 degrees of freedom was significant at the 0.01 level ( $\chi^2 = 14.92$ ). Therefore, multivariate analysis of covariance was appropriate for comparing the components of emotion regulation between the experimental and control groups. Analysis of covariance was performed and the results showed that the F value (Wilks Lambda = 0.131,  $\chi^2 = 0.869$ , P = 0.001, F = (15 and 2) 65.49) was significant at the 0.01 level. This indicates that at least one of the components of emotion regulation has changed under the influence of the implementation of the independent variable in the two groups.

Table 3. Results of one-way analysis of covariance in testing the effect of independent variables on emotion regulation components.

$\eta^2$	Significance level	F	Mean squared error	Between-group mean squares	Dependent variable
0/857	0/001	96/27	8/10	779/83	Cognitive appraisal
0/032	0/477	0/53	3/41	1/80	Suppression

Note: At both levels of the dependent variable, the group degree of freedom is 1 and the error degree

of freedom is 16.

Based on the results of the above table, unlike the suppression component, the implementation of the independent variable has affected the cognitive appraisal component ( $P < 0.01$ ,  $F = (16 \text{ and } 1) 27.96$ ). In addition, the use of the Bonferroni test showed that the adjusted means of cognitive appraisal ( $P < 0.01$ ,  $SE = 1.30$ ,  $\Delta\bar{x} = 12.73$ ) in the experimental group increased compared to the control group.

**Table 4. Descriptive findings and Shapiro-Yelk index of rumination components in the experimental and control groups**

Shapiro-Wilk (NS: Not Significant)		Mean $\pm$ standard deviation		Rumination
Group Control	Group Experiment	Group Control	Group Experiment	
0/941(NS)	0/964(NS)	6/25 $\pm$ 51/80	9/07 $\pm$ 49/70	Pre-test
0/892(NS)	0/911(NS)	4/17 $\pm$ 54/21	5/30 $\pm$ 37/10	Post-test

Table 4 shows that the Shapiro-Wilk indices related to rumination in both the experimental and control groups and in both pre-and post-test stages are not significant at the 0.05 level. This indicates that the distribution of rumination data in the two groups is normal.

**Table 5. Results of univariate analysis of covariance in testing the effect of implementing the independent variable on rumination**

2 partial $\eta$	Significance level	F	Mean squares	Degree of freedom	Sum of squares	
0/924	0/001	102/66	864/68	2	1729/36	Modified Model
0/551	0/001	20/87	175/78	1	175/78	Constant Value
0/651	0/001	31/74	267/31	1	267/31	Pretest
0/898	0/001	150/12	1264/42	1	1264/42	Group
			8/44	17	143/19	Total
				20	43551/00	Error

Based on the results in Table 5, the implementation of the independent variable at a significance level of 0.01 affected the rumination of the participants in the study ( $P < 0.01$ ,  $F = (17 \text{ and } 1)12.150$ ). The comparison of the adjusted means of the two experimental and control groups using the Bonferroni post hoc test showed that the implementation of the independent variable caused the average rumination scores in the experimental group to decrease compared to the control group ( $p < 0.01$ ,  $SE = 1.31$ ,  $\Delta\bar{x} = 16.06$ ).

**Discussion and Conclusions** According to the materials presented in this study, the effectiveness of cognitive-behavioural hypnotherapy is because it not only creates positive attitudes and expectations in clients, but also creates rapid physiological, cognitive, emotional, and behavioural changes in individuals (which effectively manages emotions) and makes the treatment effect greater and shorter-term. The reason why this method is effective on emotional regulation, according to the factors mentioned in Chapter 2, is the following: This method 1) eliminates resistance. 2) creates a strong therapeutic alliance. 3) makes transfer faster. 4) creates relaxation in the individual. 5) strengthens the ego. 6) facilitates divergent thinking. 7) provides access to the unconscious. 8) facilitates mental image conditioning. 9) induces a positive mood in the individual. 10) the individual learns his or her own

positive self-hypnosis. 11) Leads to the integration of cortical function, which directly leads to emotion regulation. In the treatment sessions of the experimental group using the cognitive-behavioral hypnotherapy method, I have witnessed a surprising increase in people's motivation and strengthening of their ego, as well as the creation of divergent thinking. All people have experienced inner happiness and reported a lot of peace after the sessions. I have also witnessed a decrease in people's resistance quickly after one treatment session for people who were resistant. Some people denied the effectiveness of this method, but after conditioning and personal experience, they reported a completely different perspective in the second session. Also, people who considered their emotions uncontrollable were quickly led towards internal control, self-confidence, and self-efficacy through conditioning. According to my experiences in this study, this method is very suitable for emotional regulation because it provides the therapist with a very rich tool in this regard. For example, it offers emotional discharge techniques and imagery (such as schema therapy) for emotionally suppressive people. Its strength is that it brings people closer to the unconscious. Imagery is also effective in eliminating Critical thinking and focused attention are achieved quickly and easily, and using the bridging technique that goes back and forward in time also facilitates this. On the other hand, it provides relaxation and empowerment techniques for people who have intense emotions, creating psychological distance from emotions and controlling emotions. It also teaches communication skills, assertiveness skills (neither passive for people who suppress emotions nor aggressive for people who have intense emotions), problem-solving and conflict skills, etc. Not only in the form of cognitive-behavioral techniques, but also in the depth of trance and the use of individual conditioning, as well as self-hypnosis training of individuals, I have witnessed the high effectiveness of these techniques, and ultimately, mindful hypnotherapy techniques have had a significant impact on all individuals. This therapeutic method offers a rich treasure trove of other therapeutic techniques such as schema therapy, cognitive-behavioral techniques, and to some extent ACT techniques (emotional dissociation with the telescope technique in the depth of trance), mindfulness techniques, and individual and interpersonal skills, which are among the strengths of this method. This treatment method considers all problems to be caused by a type of negative self-hypnosis, which by correcting this case and being aware of it and working on it, creates a kind of psychological distance from this phenomenon for people. In a way, this method, by approaching the unconscious, directly corrects cognition around individual identity, self-concept, and ineffective thoughts, and also changes negative experiences in all dimensions in a positive direction. According to the data obtained in the fourth chapter, cognitive assessment has found a significant difference, but suppression has not changed. In my opinion, the explanation for these results is that the cognitive-behavioral hypnotherapy method was used, and of course it had a good effect on cognitive assessment, but the reason for the lack of effect on suppression is that according to the book *Motivation and Emotion*, this method is not a very effective strategy and often gives the opposite result and increases excitement and causes social harm. This treatment method focuses more on other effective and radical techniques, and I have not emphasized this strategy much in treatment due to its disadvantages. Also, considering the functional effect of this therapeutic method on the brain function of individuals, this method is very useful for emotional regulation. As mentioned, this method leads to increased prefrontal activity and anterior cingulate, which has a direct effect on emotional regulation. It also affects the regulation of amygdala activity, which is the basis of emotional activities, by creating deep relaxation. Hypnotherapy is also effective in the function of the basal ganglia, which are also involved in emotional regulation, and increased basal ganglia activity is associated with increased automaticity in motor behaviour during hypnosis (Kaplan and Sadock, 2015). Also, using this method strengthens the function of the non-dominant hemisphere. Therefore, this therapeutic method is effective in reconstructing the cognitive and emotional process that is influenced by the non-dominant hemisphere. Therefore, brain science also proves the effect of this method on emotional regulation.

Busyness Many people with divorce experience and also the responsibility of child custody may have affected the accuracy and motivation of the individuals to respond. Due to time constraints, there was not enough time to conduct follow-up. Another limitation of this study was the exposure to the



coronavirus, which severely affected the course of this study. The present study was conducted on a small sample of individuals. My suggestion to improve future work is to use a larger sample size and to be sure to include a follow-up period, because one of the strengths of this method is the low probability of recurrence, in which case the effectiveness of this method would be more apparent and this method could also be used in other affected individuals, and also using another questionnaire, emotion regulation, to measure improvement in more dimensions in this field. As Aladdin at the end of his book calls for increasing the use of this therapeutic method in other fields and encourages individuals to use this method, one of the suggestions could be to use this therapeutic method on cases that have not been worked on so far.

## **References**

- 1.Parker G, Durante KM, Hill SE, Haselton MG. Why women choose divorce: An evolutionary perspective. *Current Opinion in Psychology*. 2022;43:300-6.
- 2.Gross JJ. Emotion regulation in adulthood: Timing is everything. *Current Directions in Psychological Science*. 2001;10(6):214-9.
- 3.Kobylińska D, Kusev P. Flexible Emotion Regulation: How Situational Demands and Individual Differences Influence the Effectiveness of Regulatory Strategies. *Frontiers in Psychology*. 2019;10:72.
- 4.Borjali, A, Aazami, Y., Chopan ,H. The Effectiveness of Emotion Regulation Strategies Training on Reducing of Sensation Seeking in Drug-Dependent Persons. *Journal of Clinical Psychology*. 2016;8(2):33-42.
- 5.Gross JJ, Barrett LF. Emotion Generation and Emotion Regulation: One or Two Depends on Your Point of View. *Emot Rev*. 2011;3(1):8-16.
- 6.Gross JJ. Emotion regulation: affective, cognitive, and social consequences. *Psychophysiology*. 2002;39(3):281-91.
- 7.Najmi S. Thought suppression. *Oxford Handbooks Online: Oxford University Press*; 2.013
- 8.Carew CL, Milne AM, Tatham EL, MacQueen GM, Hall GBC. Neural systems underlying thought suppression in young women with, and at-risk, for depression. *Behavioural Brain Research*. 2013;257:13-24.
- 9.Geisler FCM, Schröder-Abé M. Is emotion suppression beneficial or harmful? It depends on self-regulatory strength. *Motivation and Emotion*. 2015;39(4):553-62.
- 10.van Schie K, Wanmaker S, Yocarini I, Bouwmeester S. Psychometric qualities of the Thought Suppression Inventory-Revised in different age groups .*Personality and Individual Differences*. 2016;91:89-97.
- 11.Namdarpour F, Fatehizade M, Bahrami F, Mohammadi Fesharaki R. Mental Rumination Consequences in Women with Marital Conflicts: A Qualitative Study. *journal of counseling research*. 2018;17(67):122.53-
- 12.Cameron S, Brown VJ, Dritschel B, Power K, Cook M. Understanding the relationship between suicidality, current depressed mood, personality, and cognitive factors. *Psychology and psychotherapy*. 2017;90(4):530-49.
- 13.Whisman MA, du Pont A, Butterworth P. Longitudinal associations between rumination and depressive symptoms in a probability sample of adults. *Journal of Affective Disorders*. 2020;260:680-6.
- 14.Querstret D, Croypley M. Assessing treatments used to reduce rumination and/or worry: A systematic review. *Clinical Psychology Review*. 2013;33(8):996-1009.
- Aldao A, Nolen-Hoeksema S, Schweizer S. Emotion-regulation strategies across psychopathology: A meta-analytic review. *Clinical Psychology Review*. 2010;30(2):217-37.
- 16.Tucker RP, Wingate LR, O'Keefe VM, Mills AC, Rasmussen K, Davidson CL, et al. Rumination and suicidal ideation: The moderating roles of hope and optimism. *Personality and Individual Differences*. 2013;55(5):606-11.
- 17.Murphy ER, Barch DM, Pagliaccio D, Luby JL, Belden AC .Functional connectivity of the amygdala and subgenual cingulate during cognitive reappraisal of emotions in children with MDD history is associated with rumination. *Developmental Cognitive Neuroscience*. 2016;18:89-100.
- 18.Aftab R, Karbalaee Mohammad Meigouni A, Taghiloo S. The mediating role of emotion regulation strategies in relationship between borderline personality and conjugal violence. *Journal of Applied Psychology*. 2015;8(32):7-27.
- 19.Kihlstrom JF. Hypnosis and hypnotherapy. *Reference Module in Neuroscience and Biobehavioral Psychology*: Elsevier; 2022.
- 20.Nolen-Hoeksema S, Morrow J. A prospective study of depression and posttraumatic stress symptoms after a natural disaster: the 1989 Loma Prieta Earthquake. *Journal of personality and social psychology*. 1991;61(1):115-21.

21. Nolen-Hoeksema S, Parker LE, Larson J. Ruminative coping with depressed mood following loss. *Journal of personality and social psychology*. 1994;67(1):92-104.
22. Gross JJ, John OP. Individual differences in two emotion regulation processes: implications for affect, relationships, and well-being. *J Pers Soc Psychol*. 2003;85(2):348-62.