Iran J Psychiatry 2023; 18: 2: 134-144

**Original Article**

# The Effectiveness of Self-Compassion-Focused Therapy on Cognitive Vulnerability to Depression

**Mehran Farhadi*, Haniyeh Rahimi, Mohammad Reza Zoghi Paydar, Mosayeb Yarmohamadi Vasel**

**Abstract**

**Objective:** The objective of the present study was to determine the effectiveness of self-compassion-focused therapy on cognitive vulnerability to depression as one of the causes of the onset or recurrence of depressive episodes in people who were not depressed at the time of the research but were cognitively susceptible to depression.
**Method:** The statistical population included all students of Bu-Ali Sina University in 2020. The sample was selected through the available sampling method. First, 52 people were screened, and finally, by random assignment, 20 people were placed in the experimental group and 20 people in the control group. The experimental group underwent compassion-focused therapy for eight 90-minutes-long sessions. The instruments included the Attributional Style Questionnaire, the Dysfunctional Attitude Scale, the Cognitive Triad Inventory, the Self-Esteem Scale, and the 2nd edition Beck Depression Inventory.
**Results:** The results of multivariate analysis of covariance showed that self-compassion-focused therapy was effective in terms of cognitive vulnerability to depression ($P < 0.01$, $F = 22.78$), dysfunctional attitudes ($P < 0.01$, $F = 15.53$), self-esteem ($P < 0.01$, $F = 30.07$), general attribution style for negative events ($P < 0.01$, $F = 11.41$), stable attribution style for negative events ($P < 0.01$, $F = 14.48$) and internal attribution style for negative events ($P < 0.01$, $F = 12.45$).
**Conclusion:** Therefore, it can be concluded that self-compassion-focused therapy can reduce cognitive vulnerability to depression. It seems that this has been achieved through the regulation of emotional systems and the increase of mindfulness, which leads to the reduction of safety-seeking behaviors and the modification of cognitive patterns that take place around the axis of the compassionate mind.

**Key words:** *Attitude; Depression; Dysfunctional; Self-Compassion; Therapy; Vulnerability*

Department of Psychology, Faculty Economic and Social Sciences, Bu-Ali Sina University, Hamedan, Iran.

***Corresponding Author:**
Address: Department of Psychology, Bu-Ali Sina University, Shahid Mostafa Ahmadi Roshan Street, Hamedan, Postal Code: 6517838695.
Tel: 98-81 38381601, Fax: 98-81 38381149, Email: m.farhadi@basu.ac.ir

**Article Information:**
Received Date: 2022/02/06, Revised Date: 2022/09/01, Accepted Date: 2022/10/08

The two concepts of vulnerability and invulnerability have been used to embody the concept of the development of psychological trauma. Vulnerability refers to the possibility of maladaptive responses in certain situations (1). One of the most important topics for mental health professionals is to understand the basic characteristics of disorders, rather than the structure of vulnerability (2). This claim is quite true about depression; as the study of vulnerability has emerged as a focal point in efforts to understand and prevent the disorder. Several conceptual models (e.g., biological and genetic models) have provided important insights into the nature of vulnerability concerning depression. However, since cognitive factors are widely recognized in the psychological science community, and play an important role in the risk of depression, the main focus of cognitive events is on vulnerability.

Cognitive science has been effective in advancing our understanding of the onset, maintenance, and treatment of depression (3). The cognitive vulnerability hypothesis (4,5) states that the onset of depression can be triggered by negative life events interacting with dysfunctional cognitive processes (i.e., vulnerability). The cognitive vulnerability may be seen as a quasi-attribute tendency to interpret information in a negative and distorted way in the face of subjective perceptions of the problems which may have arisen from early negative experiences.

Several models of cognitive vulnerability to depression have been proposed. They claim that individuals' cognitive characteristics provide them with varying degrees of depression sensitivity (4, 6). These models differ in the specific cognitions involved in this vulnerability, although the pervasive concept is similar. In other words, the existence of dysfunctional beliefs puts a person at risk for depression, especially in times of high stress. In Reilly's study (7), three theoretical frameworks were used for cognitive vulnerability to depression: Beck's cognitive theory, theories of hopelessness/despair, and the theory of self-esteem.

In cognitive models of depression (5), susceptible and depressed individuals process negative information through cognitive depressions which can serve as a maintaining factor of depression. Dysfunctional attitudes are directional assumptions and beliefs that a person has about himself, the world around him, and the future (8). These attitudes orient the individual's understanding of events, affect emotions and behaviors, and leave the person prone to depression and other psychological disorders.

The theory of hopelessness is an extension of the helplessness model which claims that the symptoms of depression show a series of consequences of events that begin with the occurrence of negative events (4). In hopelessness theory (4), it is assumed that people with a depressive inferential lifestyle are vulnerable to periods of depression (especially a subtype of hopeless depression) after experiencing negative life events. The depressive inferential style is characterized by the tendency of negative life events to become enduring general causes: the inference which advocates that negative events will have negative consequences, and the inference which assumes that the presence of a negative event in one's life shows his imperfection and worthlessness.

Self-esteem, the degree to which one values oneself, is believed by several researchers (6, 9) to be implicated in the vulnerability to depression. For instance, Beck (9, 10) suggested that when people with hidden negative schemas deal with stressful life events, their schemas would be activated; they would interpret their experiences based on these negative perceptions of self, and they are likely to become depressed (10).

According to cognitive models, emotional disorders persist as long as the cognitive components are active, and improve when those components change. Thus, the temporary relief is provided by changes in close cognitive components, while stable improvement requires changes in the underlying causes of cognitive vulnerability. Interventions designed to modify cognitive vulnerabilities are among the most effective interventions available for depression.

The results of studies on cognitive interventions of depression (e.g., cognitive therapy) showed that cognitive vulnerability is indeed modifiable (11, 12). In addition, reducing cognitive vulnerability appears to reduce the risk of depression or the recurrence of depression (11). Neff found that lack of self-compassion is associated with increased vulnerability to a number of psychological pathology indicators (13, 14). Self-compassion is one of the protective psychological variables which have been empirically considered in the context of mental health problems in adults (15, 16).

Neff (13) defined self-compassion as a three-component construct, which includes kindness to oneself versus self-judgment, human sharing versus isolation, and vigilance versus extreme assimilation. Therefore, Gilbert used this structure in the treatment sessions, and finally proposed self-compassion-focused therapy (17). In fact, self-compassion-focused therapy focuses on the four areas of past and historical experiences, underlying fears, strategies for being safe, and unintended consequences (18).

Previous findings have shown the effectiveness of self-compassion-focused therapy on strengthening and improving self-esteem (19), adjusting primary maladaptive schemas (20), reducing learned helplessness, increasing cognitive self-efficacy (21), and reducing ruminative thinking (22). In their review, Allen and Larry (23) stated that a self-compassionate attitude promotes a way of coping with negative events that is characterized primarily by non-avoidant functional coping strategies such as positive cognitive reframing or problem solving. Gale *et al.* (24) stated in their research that compassion-focused therapy has an effect on patients' self-esteem, locus of control, feelings of

disgust, distorted cognition, mental well-being, psychological problems, and defective behaviors and attitudes towards themselves. The research findings of Zhou *et al*. (25) showed that self-compassion had an effect on hopelessness depression through positive effects on negative cognitive style.

Therefore, according to what was stated, there seems to be a relationship between self-compassion-focused therapy and the model of cognitive vulnerability to depression introduced in this study. No research has so far examined the effectiveness of self-compassion-focused therapy on cognitive vulnerability to depression; therefore, the present research is novel in this sense and its aim is to find out whether self-compassion-focused therapy can reduce cognitive vulnerability to depression as a causative factor in the onset or recurrence of depressive episodes in people who were cognitively susceptible to depression?

## Materials and Methods

The research design of this quasi-experimental study was a pretest-posttest control group (Due to the lack of completely random sampling and the selection of samples by the available sampling method). Since the present study is a subset of experimental research, the sample size in the quasi-experimental design should be at least 15 people for each group (26). The statistical population included all students of the Bu-Ali Sina University of Hamadan in 2020. The sample was selected in two stages. First, the instruments (i.e., Attribution Style questionnaire, Dysfunctional Attitude scale, Self-esteem scale, Cognitive Triad Inventory, and Beck's Depression inventory) were administered to the students through the available sampling method. The inclusion criteria included depression z scores of less than 1, dysfunctional attitude scores of higher than 128, attribution style and cognitive triad z scores of higher than 1, and self-esteem z scores of below 1; these individuals should have a cognitive vulnerability to depression. Accordingly, 40 students were selected. They were randomly assigned to two groups (20 students in the experimental group and 20 students in the control group). Five people were excluded from the experimental group, because of lack of access to them through the communication channel mentioned in the questionnaire, and five people were dropped from the control group due to non-return of the questionnaire.

The cognitive vulnerability score of depression was obtained from the total scores of the Dysfunctional Attitude scale, Attribution Style questionnaire, Cognitive Triad inventory, and Self-esteem scale. It should be noted that the Self-esteem scale scores were reversed.

### *Measures*

**The instruments are introduced as follows:**

Attributional Style Questionnaire (ASQ)

ASQ is a self-report instrument developed by Peterson *et al.* (27). It contains 48 items. In the present study, concerning the six negative situations, the Cronbach's alpha coefficients were 0.67, 0.71, and 0.78 for internal-external dimensions, stable-unstable dimensions, and general-specific dimensions. In Reilley *et al.'s* (8) study, the alpha coefficient was equal to 0.64. The concurrent reliability of ASQ in negative situations and dysfunctional attitude was calculated with the Pearson correlation; it was equal to 0.40. Furthermore, the concurrent reliability of each of the dimensions of the ASQ in negative situations and dysfunctional attitude was calculated through the Pearson correlation; it turned out to be 0.30, 0.32, and 0.35 for internal-external, stable-unstable, and general-specific dimensions, respectively.

**Dysfunctional Attitude Scale (DAS)**

DAS was developed by Weissman and Beck (28). It consists of 40 items in a 7-point Likert scale format. It was designed to assess the underlying assumptions and beliefs that make up the schemas (28). The respondents should indicate their beliefs and attitudes about each item on a scale that ranges from strongly agree to strongly disagree. According to various research studies, the mean scores of normal individuals were between 119 and 128, where higher scores indicate vulnerability to depression and cognitive distortions (29). In Reilley *et al.'s* (8) study, the alpha coefficient was equal to 0.89. In addition, the reliability of this scale, using the test-retest method, was 0.72 (30). Furthermore, the validity of this scale, using convergent validity, was 0.65 in Kaviani *et al.'s* (31) study.

**Rosenberg Self-Esteem Scale (RSS)**

RSS measures the overall self-esteem and personal value. It includes 10 general statements designed to provide an overview of positive and negative attitudes about oneself (32). This scale has stronger correlation coefficients than Cooper-Smith's Self-esteem Inventory (SEI) and has higher validity in measuring self-esteem levels (32). In a study of female students, its Cronbach's alpha coefficient was 0.93, and the test-retest reliability was 0.85 (33,34). In a cross-sectional study, Rajabi and Buhlul (35) investigated 129 students who were selected through simple random sampling from among all freshmen living in the dormitories of Shahid Chamran University using the RSS. The internal consistency coefficients were 0.84, 0.87, and 0.80 in the whole sample, male students, and female students, respectively. The correlation coefficients between each of the scale items and the total score of the items ranged from 0.56 to 0.72; all were significant at the level of $p < 0.001$. Factor analysis using the principal axis factoring (Promax rotation) yielded two factors (i.e., personal competence and self-satisfaction) which explained 53.83% of the variance of the scale. Moreover, there was a significant negative relationship between the scale and the Death Obsession scale in the whole sample (-0.34), male students (-0.44), and female students (-0.27), which indicated the divergent validity of the RSS.

**Cognitive Triad Inventory (CTI)**

CTI was developed by Beckham *et al.* (36) to assess the cognitive triad in depressed individuals. CTI is a 36-item instrument that has three subscales to measure an individual's attitude toward himself, the world, and the future. There are 10 statements for each subscale. The results of Beckham *et al.'s* (36) study in the United States showed that the inventory has good internal consistency. They found the Cronbach's alpha coefficient of 0.95 for the whole scale, and the Cronbach's alpha coefficients of 0.91, 0.81, and 0.93 for the subscales of attitude towards self, attitude towards the world, and attitude towards the future, respectively.

Concurrent validity was reported through a significant correlation (0.77) between CTI and Beck's Depression Inventory. Furthermore, all subscales had a significant correlation with other scales. These scales (especially the attitude towards self) had a significant positive correlation (0.90) with the self-esteem scale. In addition, the attitude towards the future had a significant correlation (0.90) with the hopelessness scale (37). Kimiaie and Gorjian Mahlabani (38) applied this inventory in the context of Iran. They reported the reliability coefficient (Cronbach's alpha) of 0.85 for the whole scale and 0.80, 0.73, and 0.81 for the subscales of attitude towards self, attitude towards the world, and attitude towards the future, respectively. The researchers translated the inventory from English into Persian. Then, they checked the trustworthiness of the translated inventory. Finally, they administered it (38).

**Beck's Depression Inventory (DI)**

Beck's DI consists of 21 groups of statements that investigate the physical, behavioral, and cognitive symptoms of depression. Each group has 4 options which are scored on a basis of zero to three and determines different levels of depression (i.e., from mild to severe). The maximum score in this inventory is 63, and the minimum score is zero. Beck *et al.* (39) reported the internal consistency of the scale in terms of Cronbach's alpha coefficients from 0.73 to 0.92 and its test-retest reliability coefficients from 0.48 to 0.86. The psychometric characteristics of this inventory on a sample of 94 individuals in the context of Iran were as follows: the alpha coefficient was 0.91; the correlation coefficient between the two halves was 0.89, and the one-week test-retest coefficient was 0.94 (40).

***Intervention***

self-compassion-focused therapy package was developed and designed based on the theoretical guidelines of Gilbert's (17) compassionate mind (table 1).

**Table 1. Self-Compassion-Focused Therapy Package**

| Session | Purpose | Content | Tasks |
|---|---|---|---|
| One | Introduction and general explanations | Familiarity with members, workshop rules, members' goals for attending the meetings, the logic of intervention sessions, the definition of compassion, the importance and the effects of compassion | |
| Two | Introducing emotional regulation systems | Introducing three emotional regulation systems and the way they affect the individual; explaining the difference between a threat-focused mind and a compassionate mind | Investigate which emotional system is the most active in painful situations |
| Three | Introducing mindfulness techniques | Teaching relaxing breath and the way to perform it; introducing mindfulness skills, physical examination techniques, moment-to-moment attention, and conscious eating (e.g., raisin eating practice) | Do relaxing breath exercises in different contexts, and eat consciously. |
| Four | Introducing the characteristics of compassion and a compassionate person | Explaining the six characteristics of compassion (i.e., sensitivity, well-being care, empathy, sympathy, non-judgment, and tolerance of turmoil); defining a compassionate person and his characteristics (i.e., wisdom, power, kindness, non-judgment, and responsibility); explaining the fact that the client must learn skills in order to become a compassionate person | Self-evaluate to find the characteristics of the compassionate person. |
| Five | Introducing compassionate reasoning and compassionate attention | Teaching how to visualize self-compassion; imagining your best state; performing the technique of compassionate chair | Perform ruminant thinking for a few seconds. Then, practice self-compassion and pay attention to the difference between the two situations. |

| | | | |
|---|---|---|---|
| Six | Introducing techniques to cultivate a compassionate mind | Reconstructing hard emotional memories through focusing on compassionate identity; further cultivating the relief system; building a compassionate inner relationship | |
| Seven | Introducing compassionate feeling (showing compassion to others and receiving compassion from them) | Practicing self-compassion; creating an ideal and complete compassionate model; having a brief reference to the concept of fear of compassion | Apply the exercises in real contexts while communicating with others. |
| Eight | Introducing compassionate behaviors | Explaining the true meaning of compassionate behaviors; generating ideas for compassionate behaviors; teaching compassionate letter writing and summarizing | Do a kind deed for yourself or someone else every day; Generate and practice ideas for compassionate behavior. |

***Data Collection Procedure***

After obtaining the necessary licenses and receiving the code of ethics, 311 series of the instruments along with the necessary explanations (obtaining the consent of the participants, explaining how to answer the questions, and informing about the confidentiality of the data) were administered to the students of Bu-Ali Sina University (i.e., the pretest). After collecting the questionnaires, 287 of them were coded and entered into SPSS software for initial calculations. It is noteworthy that 24 questionnaires were not coded because they did not return to the researcher or were incomplete. At this stage, the students who were eager to know the results of the questionnaires were provided with feedback. When the students were randomly assigned to the experimental and the control groups, they were provided with an explanation regarding the general objective of the study, the duration of the study, the time of meetings, and the gifts devoted to the participants. Furthermore, written consent was obtained from the participants. A self-compassion-focused therapy package was administered to the experimental group for eight 90 minutes-long sessions. However, the control group did not receive any treatment. The intervention was performed online (with Skype), by a specialist psychologist who had been trained in self-compassion-focused therapy courses. No absences were recorded and during these sessions, the content of the self-compassion-focused therapy protocol (attached at the end of the text) was performed for the experimental group. Finally, feedback was provided to both groups according to their scores.

The inclusion criteria included lack of depression symptoms and psychotherapy in the past two months. The exclusion criteria included absence (more than two sessions) and unwillingness to participate in the training sessions. At the end of the sessions, the questionnaires were re-administered to both experimental and control groups (posttest) to investigate the effectiveness of the treatment. The data were analyzed using SPSS software (version 22). To analyze the data at the descriptive level, the mean and standard deviation were used. At the inferential level, multivariate analysis of covariance was used, considering the assumptions of parametric tests.

***Informed Consent Statement***

Informed consent was obtained from all individual participants included in the study. It should be noted that this study has the ethics code of ID IR.BASU.REC.1399.008 approved by the ethics committee of Bu-Ali Sina University. Also, this research has been registered in the Iranian Registry of Clinical Trials with code IRCT20220907055911N1.

## Results

The significance level of the obtained F regarding the difference between the control and the experimental groups in terms of the slope of the regression lines of the pretest and the post-test of cognitive vulnerability to depression was higher than 0.05. Therefore, the slope of the regression lines did not differ significantly between the two groups, and the assumption of homogeneity of regression slopes was confirmed.

The significance level of the z scores of the distribution of the scores of dysfunctional attitude, self-esteem, cognitive triad, negative attribution styles, and total cognitive vulnerability to depression in the pretest and post-test of the experimental and control groups was higher than 0.05 ($P > 0.05$). It indicates that the scores of the research variables had a normal distribution.

The assumption of the homogeneity of variance of the two groups was tested by Levene's test. There was no significant difference between the two groups in terms of the variance of the scores of dysfunctional attitude, cognitive triad, self-esteem, negative attribution styles, and cognitive vulnerability. In fact, the significance level of the F value was higher than 0.05 ($P > 0.05$). Therefore, the assumption of homogeneity of the variance of the scores of the dependent variables of the two groups was accepted.

The assumption of the homogeneity of the covariance matrix was an output of the multivariate analysis of covariance. To test this assumption, Box's M test examined the homogeneity of the covariance matrix. Since this statistic is very sensitive, the significance level was set at 0.001. If the significance level was higher than 0.001, it would indicate that there was no significant difference, and the assumption of homogeneity of the covariance was confirmed. The

value of the Box statistic was equal to 7.1. The value of F obtained for this statistic was 1.08. The significance level of the F value was higher than 0.001 (P > 0.001). Therefore, the assumption of the homogeneity of the covariance matrix was accepted.

Table 2 shows the mean and the standard deviation of the research variables.

**Table 2. Descriptive Statistics Regarding the Scores of Dysfunctional Attitude, Cognitive Triad, Negative Attribution Styles, and Self-Esteem in the Control and the Experimental Groups**

| | Groups | Pretest | | | Posttest | | |
|---|---|---|---|---|---|---|---|
| | | Frequency | Mean | SD. | Frequency | Mean | SD. |
| Dysfunctional attitude | Experimental | 15 | 160.33 | 20.16 | 15 | 133.06 | 17.93 |
| | Control | 15 | 154.80 | 22.30 | 15 | 151.73 | 23.97 |
| Self-esteem | Experimental | 15 | 20.93 | 2.86 | 15 | 13.26 | 2.40 |
| | Control | 15 | 14.13 | 2.61 | 15 | 12.85 | 2.85 |
| General attribution | Experimental | 15 | 32.46 | 3.64 | 15 | 24.06 | 4.47 |
| | Control | 15 | 31.66 | 2.31 | 15 | 29.40 | 3.99 |
| Stable attribution | Experimental | 15 | 30.13 | 2.31 | 15 | 22.40 | 3.57 |
| | Control | 15 | 28.73 | 3.69 | 15 | 28.66 | 4.40 |
| Internal attribution | Experimental | 15 | 28 | 3.76 | 15 | 22 | 4.92 |
| | Control | 15 | 27.53 | 5.04 | 15 | 28.93 | 3.32 |
| Cognitive triad | Experimental | 15 | 121.53 | 15.61 | 15 | 105.20 | 19.82 |
| | Control | 15 | 114.23 | 9.60 | 15 | 108.46 | 14.22 |
| Cognitive vulnerability | Experimental | 15 | 393.38 | 24.31 | 15 | 319.98 | 35.41 |
| | Control | 15 | 371.08 | 26.98 | 15 | 360.01 | 33.54 |

Table 3 shows that the effect of the pre-test was significant and that, as a co-variation, it was effective. In addition, the effect of the group was significant (F = 22.78, P < 0.01). In other words, self-compassion-focused therapy had a significant effect on reducing cognitive vulnerability to depression. According to the Eta squared, the effect was 45%. Furthermore, to investigate the significance of the difference in terms of the mean of cognitive vulnerability dimensions, the multivariate Wilk's Lambda (see Table 4) was run.

**Table 3. The Results of Univariate Analysis of Covariance on Posttest Scores of Cognitive Vulnerability While Controlling Pretest Scores**

| Variables | factors | Sum of squares | Df | Mean square | F value | Sig. | Eta squared |
|---|---|---|---|---|---|---|---|
| Cognitive vulnerability to depression | pretest | 13920.18 | 1 | 13920.18 | 20.37 | 0.001 | 0.42 |
| | Group | 16479.58 | 1 | 16479.58 | 22.78 | 0.001 | 0.45 |
| | Error | 23086.79 | 27 | 855.06 | | | |

**Table 4. The Results of Multivariate Tests on Posttest Scores of Dysfunctional Attitudes, Self-Esteem, and Negative Attribution Styles While Controlling the Pretest Scores**

| Effects | Value | F value | Df | df error | Sig |
|---|---|---|---|---|---|
| Pillai's Trace | 0.71 | 9.30 | 5 | 19 | 0.001 |
| Wilks' Lambda | 0.29 | 9.30 | 5 | 19 | 0.001 |
| Hotelling's effect | 2.44 | 9.30 | 5 | 19 | 0.001 |
| Roy's Largest Root | 2.44 | 9.30 | 5 | 19 | 0.001 |

According to Table 4, it can be seen that the F value of Wilk's Lambda is 9.30 with a significance level of less than 0.01 (P < 0.01). Thus, there was a significant difference between the experimental and the control groups in terms of cognitive vulnerability to depression. Then, to examine which dependent variables (i.e., dysfunctional attitudes, negative attribution styles, and self-esteem) significantly differed in the experimental and the control groups, multivariate analysis of covariance was run.

As the results (see Table 5) show, the effect of self-compassion treatment on the students' dysfunctional attitudes (F = 15.53, P < 0.01) is significant; it reduces its rate. According to Eta squared, this effect is 40%. Moreover, the effect of self-compassion-focused therapy on students' self-esteem is significant (F = 30.07, P < 0.01); it increases its rate. According to Eta squared, the effect is 56%. In addition, the effect of self-compassion-focused therapy on the general negative attribution style is significant (F = 11.41, P < 0.01); it reduces its rate. According to Eta squared, this effect is 33%. Furthermore, the effect of self-compassion-focused therapy on stable negative attribution style (F = 14.48, P < 0.01) is significant; it reduces its rate. According to Eta squared, the effect is 38%. Finally, the effect of self-compassion-focused therapy on internal attribution style (F = 12.45, P < 0.01) is significant; it reduces its rate. According to Eta squared, the effect is 35%.

**Table 5. The Results of Multivariate Analysis of Covariance on Posttest Scores of Dysfunctional Attitudes, Self-Esteem, Negative Attribution Styles While Controlling Pretest Scores**

| Variables | Factor | Sum of squares | Df | Mean square | F value | Sig. | Eta squared |
|---|---|---|---|---|---|---|---|
| Dysfunctional attitudes | Group | 6399.20 | 1 | 6399.20 | 15.53 | 0.001 | 0.4 |
| | Error | 9474.78 | 23 | 411.94 | | | |
| Self-esteem | Group | 137.96 | 1 | 137.96 | 30.07 | 0.001 | 0.56 |
| | Error | 105.50 | 23 | 4.58 | | | |
| General attribution style | Group | 206.13 | 1 | 206.13 | 11.41 | 0.003 | 0.33 |
| | Error | 415.51 | 23 | 18.06 | | | |
| Stable attribution style | Group | 269.1 | 1 | 269.1 | 14.48 | 0.001 | 0.38 |
| | Error | 427.34 | 23 | 18.58 | | | |
| Internal attribution style | Group | 235.32 | 1 | 235.32 | 12.45 | 0.002 | 0.35 |
| | Error | 434.40 | 23 | 18.88 | | | |

## Discussion

The results showed that self-compassion-focused therapy led to the reduction of dysfunctional attitudes in the subjects of the experimental group, which was consistent with some researches (20, 24, 41-45). The results of these studies showed that self-compassion-focused therapy and compassionate mind training were effective in adjusting and reducing maladaptive psychological structures, primary maladaptive schemas, distorted cognitions, dysfunctional attitudes, and defective attitudes towards oneself. The findings indicate the relationship between attachment styles and attitudes towards oneself, the world/others, and the future (46). Evidence shows that lack of compassion is associated with insecure attachment and childhood maltreatment and may mediate the effect of insecure attachment on emotional regulation disorders (47). Kindness and compassion from others towards oneself lead to the reactivation of the secure attachment system (48). This feeling of warmth and safety usually begins through the feeling of receiving compassion from others towards oneself (49). Self-compassion works through the same brain processes that are triggered when others empathize with us, so the feelings and images must be internalized to serve as an internal schema as a reference for self-soothing. It seems that in this way, this treatment reduces dysfunctional attitudes.

Also, the results showed that self-compassion-focused therapy led to a reduction in general, stable, and internal attribution styles for negative events, which was consistent with some research (21, 24, 25, 50-53). Previous findings show the effectiveness of this treatment on reducing external perceived control (24), reducing learned helplessness and increasing self-efficacy (21). The results of Zhou *et al.'s* research (25) showed that self-compassion had an effect on

hopelessness depression through positive effects on negative cognitive style. Elaine and Hollins (50) showed that a compassion-based intervention on college students led to an increase in hope. When people explain negative events by attributing them to general factors, they cause disappointment and thus become prone to depression. Hopelessness consists of two main elements: (a) negative expectations about the consequences of an event, and (b) helpless expectations considering changing the possible consequences. In this treatment, people are told that self-compassion is different from self-pity (54).

In self-pity, people get caught up in their own problems and forget that others are facing similar problems and maybe worse than them. On the other hand, in common humanity, which is one of the characteristics of people who are kind to themselves, people consider their experiences as part of the common human experience, and therefore experience less disappointment when faced with negative events, and they less generalize the cause of negative events to other aspects of life. Also, people who have a greater understanding of common humanity understand their failures as human fallibility; thus, it helps them minimize the distress caused by losing a sense of control and mastery in life. Compassionate individuals appraise negative situations and experiences as moment-to-moment, controllable, and less threatening, thereby protect themselves against deep activation of depression-related schemas (55), which appears to be effective in reducing persistent attributional style. The explanation of the evolved brain model also makes people consider the unpleasant thoughts and feelings associated with it as normal in times of threat. They are reminded that having such thoughts and feelings is not a sign of a bad personality trait, so it is important as a shame reduction process (56). This technique seems to be effective in reducing internal attribution style for negative events.

The results showed that self-compassion-focused therapy was effective in increasing self-esteem, which was consistent with some researches (19,24,50,57,58). The results of this research indicate that this treatment is effective in increasing and improving self-esteem. Along with increasing mindfulness, optimistic people see their performance more objectively and are less judgmental than people who evaluate their performance more harshly and negatively. Weaknesses are seen without fear of being condemned, judged, or avoided, eliminating behaviors that were used to avoid threats to self-worth. It is now replaced by a non-judgmental view, and with this view of our common humanity that every human being has flaws, we try to improve those weaknesses or focus on attainable goals. Studies have shown that self-compassionate people are inherently more motivated and less afraid of failure when faced with difficult challenges (59). It seems that these things are effective in improving people's self-esteem.

Finally, according to the mentioned cases and the obtained results, it was found that self-compassion-focused therapy has been effective in reducing cognitive vulnerability to depression, which is consistent with a number of researches (22,23,45,60-62). These findings indicate the protective role of self-compassion and its techniques, such as mindfulness, against depression or its relapse through cognitive factors. According to the theoretical discussions, people who are cognitively vulnerable to depression have a history of insecure attachment, which can have a profound effect on the evolution of a person's neuro-cognitive and emotional networks (63). This evolutionary background has caused the imbalance of emotion regulation systems, which causes the relief and security system to remain weak and underdeveloped, and the threat system to function in an overactive manner, which itself causes a feeling of shame and a tendency to self-blame as a safety-seeking strategy in the individual. Such safety-seeking strategies can increase their vulnerability to anxiety and depression, lower their self-esteem, and interfere with their ability to achieve life goals. These strategies can be a combination of thinking, behavior and feeling styles that have a major impact on the way a person perceives and navigates the world (64). In this treatment, it is explained to people that having unpleasant thoughts and feelings is not due to personality traits, but due to early painful experiences and the result of excessive activity of the defense and threat system. These unpleasant thoughts and feelings are associated with completely different patterns of attention, emotion, thinking and reasoning, visualization, motivation, and behavior.

This treatment, with the growth and development of the security and relief system, balances the defense and threat system and reduces safety-seeking behaviors. Self-compassion can be understood as an important resilience mechanism for individuals with positive mental health that enables adaptive emotion regulation during stressful experiences in everyday life and protects against deep activation of psychopathological cognitive schemas (65). In sum, in self-compassion-focused therapy, when the active patterns of compassion are fully established in the mind, that mind is called the compassionate mind, which causes the organization of attention, behavior, motivation, emotion, fantasy and imagination, and thinking and reasoning around the axis of compassion. This can prevent damages caused by threat-based mind activities. According to the foregoing, it is considered that self-compassion-focused therapy is an effective approach in reducing cognitive vulnerability to depression. Considering that self-compassion, in which the emotional aspect is stronger than the cognitive aspect, has reduced the cognitive vulnerability to depression, it is suggested to compare the mechanism of the effect of cognitive and emotional dimensions on the cognitive vulnerability to depression in future researches.

## Limitation

One of the limitations of this study was the concurrence of the intervention, the outbreak of the coronavirus, and the closure of educational centers. In this circumstance, it was not possible to hold face-to-face meetings. Therefore, the meetings were held online, which could reduce the transfer of concepts and the quality of the intervention compared to the face-to-face meetings. The selection of samples by available sampling method with the willingness of people to participate in the research causes bias and limitations in the research. In addition, the experimental and the control groups filled out the posttest questionnaires online due to the closure of the educational centers, and this could affect the accurate comprehension of the contents. Therefore, the results of the questionnaires and the effectiveness of the intervention should be interpreted with caution.

## Conclusion

Therefore, considering the effectiveness of self-compassion-focused therapy in increasing self-esteem; reducing internal, stable, and general attribution styles in negative situations; as well as reducing dysfunctional attitudes, it is concluded that self-compassion-focused therapy reduces cognitive vulnerability to depression.

## Acknowledgment

This study is an excerpt from the second author's master's thesis in General Psychology. We sincerely thank all the participants who collaborated to conduct the study.

## Conflict of Interest

None.

## References

1. Garmezy N. Stressors of childhood. In N. Garmezy & M. Rutter (Eds.), Stress, coping, and development in children. New York: McGraw-Hill; 1983. P. 43-84.
2. Ingram RE, Price JM. The role of vulnerability in understanding psychopathology. In R. E. Ingram & J. M. Price (Eds.), Vulnerability to psychopathology: Risk across the lifespan. New York: The Guilford Press; 2001. P. 3-19.
3. LeMoult J, Gotlib IH. Depression: A cognitive perspective. Clin Psychol Rev. 2019;69:51-66.
4. Abramson LY, Metalsky GI, Alloy LB. Hopelessness depression: A theory-based subtype of depression. Psychol Rev 1989; 96(2): 358-72.
5. Beck AT. Cognitive models of depression. J Cognit Psychother 1987; 1(1): 5–37.
6. Brown GW, Harris T. Social origins of depression: a reply. Psychol Med. 1978;8(4):577-88.
7. Reilly LC, Ciesla JA, Felton JW, Weitlauf AS, Anderson NL. Cognitive vulnerability to depression: a comparison of the weakest link, keystone and additive models. Cogn Emot. 2012;26(3):521-33.
8. Abela JR, Skitch SA. Dysfunctional attitudes, self-esteem, and hassles: cognitive vulnerability to depression in children of affectively ill parents. Behav Res Ther. 2007;45(6):1127-40.
9. Beck AT. Cognitive therapy and the emotional disorders. New York: International Universities Press; 1976.
10. Beck AT. Cognitive therapy. A 30-year retrospective. Am Psychol. 1991;46(4):368-75.
11. Clark DA, Beck AT. Cognitive theory and therapy of anxiety and depression: convergence with neurobiological findings. Trends Cogn Sci. 2010;14(9):418-24.
12. Seligman ME, Schulman P, DeRubeis RJ, Hollon SD. The prevention of depression and anxiety. Prev Treat.1999; 2(1): Article 8a.
13. Neff KD. The development and validation of a scale to measure self-compassion. Self Ident. 2003;2(3):223-50.
14. Neff K. Self-Compassion: An Alternative Conceptualization of a Healthy Attitude Toward Oneself. Self Ident. 2003;2(2):85-101.
15. Barnard LK, Curry JF. Self-compassion: Conceptualizations, correlates, & interventions. Rev Gen Psychol. 2011;15(4):289-303.
16. MacBeth A, Gumley A. Exploring compassion: a meta-analysis of the association between self-compassion and psychopathology. Clin Psychol Rev. 2012;32(6):545-52.
17. Gilbert P. Introducing compassion-focused therapy. Adv Psychiatr Treat 2009; 15(3): 199-208.
18. Ashworth F, Gracey F, Gilbert P. Compassion focused therapy after traumatic brain injury: Theoretical foundations and a case illustration. Brain Impair. 2011;12(2):128-39.
19. Saadati N, Rostami M, Darbani SA. Comparing the effectiveness of Acceptance and Commitment Therapy (ACT) and Compassion Focused Therapy (CFT) on improving self-esteem and post-divorce adaptation in women. Fam Psychol 2017; 3(2): 45-58. (Persian)
20. Nouri HR, Naghavi M. Investigating the Effectiveness of Compassionate Mind Training (CMT) in the Adjustment of Early Maladaptive Schemas in Opiate Addicts under Methadone Maintenance Treatment. etiadpajohi 2018; 11(44): 187-208. (Persian)
21. Khonsari M, Tajeri B, Sardari Pour M, Hatami M, Hossein Zadeh Taghvaee M. The comparison of the effectiveness of group compassion and choice theory training on learned helplessness and self-efficacy in studens. J Psychol Sci 2019; 17(73): 17-27. (Persian)
22. Allen NB, Knight WEJ. Mindfulness, compassion for self, and compassion for others: Implications for understanding the psychopathology and treatment of depression. In P. Gilbert (Ed.), Compassion:

Conceptualisations, research and use in psychotherapy. London: Routledge; 2005. P. 239-62.
23. Allen AB, Leary MR. Self-Compassion, stress, and coping. Soc Personal Psychol Compass. 2010; 4(2): 107-18.
24. Gale C, Gilbert P, Read N, Goss K. An evaluation of the impact of introducing compassion focused therapy to a standard treatment programme for people with eating disorders. Clin Psychol Psychother. 2014;21(1):1-12.
25. Zhou L, Chen J, Liu X, Lu D, Su L. Negative cognitive style as a mediator between self-compassion and hopelessness depression. Soc Behav Pers. 2013; 41(9): 1511-8.
26. Delavar A. Research Methodology in Psychology and Educational Sciences. Tehran: Virayesh Publishing; 2012. (Persian)
27. Peterson C, Semmel A, Von Baeyer C, Abramson LY, Metalsky GI, Seligman ME. The attribution style questionnaire. Cognit Ther Res.1982; 6(3): 287-99.
28. Weissman A, Beck, AT. Development and validation of the dysfunctional attitude scale paper presented at the annual convention of the association for the advancement of Behavior Therapy. J Res Dev Educ.1978; 4(2): 33-41.
29. Haji Alizadeh K, Bahrainian SA, Naziri Q, Modarres Gharavi M. (). A comparison of dysfunctional attitudes in substance abusers and control group and its psychological outcome. etiadpajohi 2008; 2(7): 67-78. (Persian)
30. Hassan Shahi MM. Dysfunctional Beliefs and Thought-Control Strategies in Patients with Non-Clinical Obsessive-Compulsive Disorder. Adv Cognit Sci 2004; 5(4): 50-6. (Persian)
31. Kaviani H, Javaheri F, Bahiray H. Efficacy of Mindfulness-Based Cognitive Therapy in Reducing Automatic Thoughts, Dysfunctional Attitude, Depression and Anxiety: A Sixty-Day Follow-Up. Adv Cognit Sci 2005; 7(1): 49-59. (Persian)
32. Burnett S, Wright K. The relationship between connectedness with family and self-esteem in University students. Furman University Press; 2002.
33. Rosenberg M. Society and the adolescent self-image. Princeton, NJ: Princeton University Press; 1965.
34. Rusticus SA, Hubley AM, Zumbo BD. Cross-national comparability of the Rosenberg self-esteem scale. Vancouver, BC, Canada: University of British Columbia. 2004.
35. Rajabi Gh, Buhlul N. Reliability and Validity Measurement of Rosenberg Self-Esteem Scale in New-Year Students of Shahid Chamran University. Educ Psychol Res 2007; 3(2): 33-48. (Persian)
36. Beckham EE, Leber WR, Watkins JT, Boyer JL, Cook JB. Development of an instrument to measure Beck's cognitive triad: the Cognitive Triad Inventory. J Consult Clin Psychol. 1986;54(4):566-7.
37. Wong SS. The Relations of Cognitive Triad, Dysfunctional Attitudes, Automatic Thoughts, and Irrational Beliefs with Test Anxiety. Curr Psychol. 2008;27(3):177-91.
38. Kimiaee SA, Gorjian Mahlabani H. Validating of cognitive triad inventory in students of Ferdowsi University of Mashhad. J Fund Ment Health 2011; 13(3): 230-241. (Persian)
39. Beck AT, Steer RA, Brown GK. Beck depression inventory-II. San Antonio.1996; 78(2): 490-98.
40. Fata L, Birshak B, Atefvahid M, Dobson KS. Meaning Assignment Structures/ Schema, Emotional States and Cognitive Processing of Emotional Information: Comparing Two Conceptual Frameworks. Iran J Psychiatr Clin Psychol 2005; 11(3): 312-26. (Persian)
41. İskender M. The influence of self-compassion on academic procrastination and dysfunctional attitudes. Educ Res Rev 2011; 6(2): 230-4.
42. Kirschner H, Kuyken W, Wright K, Roberts H, Brejcha C, Karl A. Soothing Your Heart and Feeling Connected: A New Experimental Paradigm to Study the Benefits of Self-Compassion. Clin Psychol Sci. 2019;7(3):545-65.
43. Zhang R, Xie R, Ding W, Wang X, Song S, Li W. Why is my world so dark? Effects of child physical and emotional abuse on child depression: The mediating role of self-compassion and negative automatic thoughts. Child Abuse Negl. 2022;129:105677.
44. Saheb M, Hassanzade R, Mirzaian B. Effectiveness of Compassion-Focused Therapy on Emotional Regulation Strategies, Dysfunctional Attitudes, and Resilience in Women with Major Depression. Community Health journal.2022; 16 (1): 12-22.
45. Kirschner H, Kuyken W, Karl A. A Biobehavioural Approach to Understand How Mindfulness-Based Cognitive Therapy Reduces Dispositional Negative Self-Bias in Recurrent Depression. Mindfulness. 2022;13(4):928-41.
46. Çelikbaş Z, Yalçınkaya-Alkar Ö. The Relationship Between Attachment Styles, Ruminative Response Styles, Dysfunctional Attitudes and Major Depression Diagnosis. J Rat-Emo Cognitive-Behav Ther.2022; 1-23.
47. Tanaka M, Wekerle C, Schmuck ML, Paglia-Boak A. The linkages among childhood maltreatment, adolescent mental health, and self-compassion in child welfare adolescents. Child Abuse Negl. 2011;35(10):887-98.
48. Mikulincer M, Shaver PR. Attachment in adulthood: Structure, dynamics, and change. New York: Guilford Press; 2007.
49. Baldwin MW. (ed.) Interpersonal cognition. New York: Guilford Press; 2005.
50. Elaine Beaumont CJ, Hollins M. Exploration of a training program for student therapists that employs Compassionate Mind Training (CMT) to develop compassion for self and others. Arts Psychother 2016; 22: 5-13.

51. Baldwin MW, Holmes JG. Salient private audiences and awareness of the self. J Pers Soc Psychol.1987; 52(6): 1087-98.
52. Karl A, Williams MJ, Cardy J, Kuyken W, Crane C. Dispositional self-compassion and responses to mood challenge in people at risk for depressive relapse/recurrence. Clin Psychol Psychother. 2018;25(5):621-33.
53. Muris P, Otgaar H, Meesters C, Heutz A, van den Hombergh M. Self-compassion and adolescents' positive and negative cognitive reactions to daily life problems. J Child Fam Stud.2019; 28(5): 1433-1444.
54. Goldstein J, Kornfield J. Seeking the heart of wisdom: The path of insight meditation. Boston: Shambhala; 1987.
55. Diedrich A, Grant M, Hofmann SG, Hiller W, Berking M. Self-compassion as an emotion regulation strategy in major depressive disorder. Behav Res Ther. 2014; 58:43-51.
56. Lynch TR, Chapman AL, Rosenthal MZ, Kuo JR, Linehan MM. Mechanisms of change in dialectical behavior therapy: theoretical and empirical observations. J Clin Psychol. 2006;62(4):459-80.
57. Thomason S, Moghaddam N. Compassion-focused therapies for self-esteem: A systematic review and meta-analysis. Psychol Psychother. 2021;94(3):737-59.
58. Andersen B, Rasmussen PH. Transdiagnostic group therapy for people with self- critic and low self esteem, based on compassion focused therapy principles. Journal of Compassionate Health Care. 2017;4(1):14.
59. Leary MR, Tate EB, Adams CE, Allen AB, Hancock J. Self-compassion and reactions to unpleasant self-relevant events: the implications of treating oneself kindly. J Pers Soc Psychol. 2007;92(5):887-904.
60. Teasdale JD, Segal ZV, Williams JM, Ridgeway VA, Soulsby JM, Lau MA. Prevention of relapse/recurrence in major depression by mindfulness-based cognitive therapy. J Consult Clin Psychol. 2000;68(4):615-23.
61. Muris P, Petrocchi N. Protection or Vulnerability? A Meta-Analysis of the Relations Between the Positive and Negative Components of Self-Compassion and Psychopathology. Clin Psychol Psychother. 2017;24(2):373-83.
62. Tickell A, Ball S, Bernard P, Kuyken W, Marx R, Pack S, et al. The Effectiveness of Mindfulness-Based Cognitive Therapy (MBCT) in Real-World Healthcare Services. Mindfulness. 2020;11(2):279-90.
63. Goodman SH, Gotlib IH. Risk for psychopathology in the children of depressed mothers: a developmental model for understanding mechanisms of transmission. Psychol Rev. 1999;106(3):458-90.
64. Gilbert P. Psychotherapy and counseling for depression (3rd ed.). London: Sage; 2007.
65. Trompetter HR, de Kleine E, Bohlmeijer ET. Why Does Positive Mental Health Buffer Against Psychopathology? An Exploratory Study on Self-Compassion as a Resilience Mechanism and Adaptive Emotion Regulation Strategy. Cognit Ther Res. 2017;41(3):459-68.