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Effectiveness of educational intervention-based compassion therapy on emotional regulation and self-control after discharge of patients With COVID-19

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Abstract:

BACKGROUND: One of the important causes of anxiety in COVID-19 disease is the inability to regulate emotion and lack of self-control during threatening conditions. The psychotherapy technique has been effective in reducing these symptoms. Therefore, this study attempted to evaluate the effectiveness of compassion-based therapy on emotion regulation and self-control in patients with COVID-19 after discharge.

MATERIALS AND METHOD: It was a quasi-experimental pretest-posttest study with a control group. The statistical population consisted of 30 men (15 in each group) who were in the quarantine period of COVID-19 disease. Available sampling was used and the participants were randomly assigned to experimental and control groups. In the experimental group, compassion-based treatment was performed in 10 sessions of 90 min. Tanji's self-control questionnaire and Garnofsky's Emotion Regulation questionnaires were used. Data analysis were performed using SPSS 21 software and multivariate analysis of covariance.

RESULTS: There was a significant difference between the mean scores of emotion regulation and self-control variables in the experimental and control groups ($P < 0.001$). The effect of this treatment on increasing the emotion regulation score was 49% and on increasing the self-control score was 37%.

CONCLUSION: Compassion-based therapy can increase cognitive regulation and improve self-control in patients with COVID-19 disease. It is suggested that this intervention can be used in psychological treatment programs.

Keywords:

COVID-19, emotional regulation, self-compassion, self-control

Introduction

COVID-19 disease is caused by a new type of coronavirus that was first reported on December 31, 2019, with the original name of the new coronavirus (nCoV-2019) in Wuhan, China, and later became a pandemic with far-reaching economic, social, and health consequences.^[1] The severity of the disease now appears to be higher than initially estimated.^[2] This pandemic

could have far-reaching consequences for individuals.^[3] One of the psychological problems during the outbreaks of diseases is job burnout which causes lack of energy and vitality.^[4] At the time of the outbreak of COVID-19, in the components of emotional exhaustion, personality decency, and personal inadequacy, 2.23%, 4.7%, and 5.57% of the society had burnout symptoms, respectively, which increased the level of anxiety and stress.^[5] Due to the impact of COVID-19 on mental health, public

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education about the disease is important in order to prevent and control it.^[6]

An important factor in anxiety in COVID-19 is the inability to regulate emotion during threatening and anxious situations. Psychologists define emotion regulation as the process of initiating, maintaining, and expressing one's emotions.^[7] Emotion regulation, especially in cognitive reassessment, plays an important role in anxiety disorders.^[8] Research evidence shows that emotion regulation is not only associated with increased health and psychological benefits but can also help people manage many work-related challenges.^[9] Recognizing the power of emotion regulation is very important with coronavirus disease.^[10] Emotion regulation can provide better emotional control in difficult situations^[11] Mousavi *et al.*^[12] in their study concluded that people with more emotion regulation strategies experience less anxiety and stress. Domaradzka and Fajkoska concluded that more emotion regulation strategies are positively associated with anxiety and depression.^[13] Moreover, positive emotion regulation strategies have a negative relationship with COVID-19 anxiety and negative emotion regulation strategies have a positive and significant relationship with COVID-19 anxiety.^[14]

Other factors related to mental health and symptoms of people with respiratory disease is self-control.^[15] The ability to manage emotion regulation and self-control plays an important role in maintaining social relationships and well-being. One of the factors that is effective in controlling the disease and its symptoms is self-control or the source of health control,^[16] which indicates that people can consider the source of external control for behaviors and events and give responsibility of behaviors the environment or other external factors or they can assume the behavior as an internal source and take responsibility for the behavior and consider themselves an important factor in the negative and positive consequences.^[17] People who have a source of internal control try to control events and behaviors and subsequently create a sense of control and effectiveness as well as positive consequences.^[18] Therefore, it is clear that the researchers should pay attention to the concurrent occurrence of psychological disorders in patients with respiratory diseases and take preventive measures to improve patients' quality of life.^[19] Generally, treating psychological disorders in these patients reduce the number of attacks and improve respiratory performance. Several studies showed that psychotherapy techniques are important in reducing the symptoms of respiratory diseases and improving emotion regulation and self-control.^[20,21] One of these techniques is self-compassion.

Compassion therapy is a type of psychological therapy that improves health and quality of life by increasing

the feeling of care and relaxation.^[22] It is a type of emotion-based strategy that informs clients to regulate their positive and negative emotions and accept them.^[23] This method consists of three components: kindness to oneself in hardships and stressful experiences instead of self-judgment, human commonalities and the inevitability of suffering and failure instead of isolation, and balanced awareness of one's feelings and thoughts instead of extreme assimilation.^[24] With the awareness of the inevitability of suffering and the basis of fear and the adoption of a soothing and compassionate approach to improving self-control during stressful events, compassion therapy creates a loving and receptive attitude toward oneself.^[25] Compassion-focused therapy (CFT) emphasizes that people deal with their negative emotions and do not avoid them, and react to their emotional experiences based on compassion, thereby increasing self-control.^[26] This supportive attitude toward self and others is associated with positive psychological messages such as reducing negative emotions and increasing self-control.^[27] Also in the concept of compassion, the self-control dimension is of special importance and is defined as experiencing and being affected by the suffering of others in such a way that one considers one's problems and sufferings more tolerable.^[28]

The prevalence of COVID-19 has caused confusion and, by altering people's living conditions, has devastating psychological effects, including a lack of self-control and a lack of emotion regulation. Epidemic crisis conditions can cause negative psychological and social effects that in some way affect the mental health of people in society. Therefore, the aim of this study was to evaluate the effectiveness of compassion therapy based on emotion regulation and self-control in COVID-19 patients after discharge from the hospital.

Materials and Method

Study design and setting

It was a semi-experimental post-test with intervention and control group conducted in Torbat Heydarieh in 2021. This study was approved by the ethics committee of Torbat Heydaryeh University of Medical Sciences and was based on the STROBE guideline. The study population of patients with COVID-19 after discharge from 9th Day Hospital was affiliated to Torbat Heydaryeh University of Medical Sciences.

Study participants and sampling

The statistical population consisted of all men who had passed the hospital 14 days after their discharge and had passed the quarantine period of COVID-19. Before the intervention, the necessary explanations were given to the subjects about the objectives of

the study and after obtaining informed consent, the subjects were entered into the project. The sample consisted of 30 patients (15 in each group) based on statistical formula¹ and similar studies.^[29,30] Sampling method of this project was available and in the next step, simple random sampling was used to assign people to two experimental and control groups [Figure 1]. The sampling method of this project was available and based on inclusion and exclusion criteria as random appointment in experimental and control groups.

Data collection tool and technique

Data were collected using Tangi Self-Control Questionnaire (29) and Garnowski's Cognitive Emotional Regulation Questionnaire (30). This study was based on STROBE² guideline. The selected samples that met the inclusion criteria were as follows: being male, minimum age of 20, maximum age of 40,^[30] no history of chronic mental illness, no use of sedatives, and patients with COVID-19 who have been discharged for 14 days. Exclusion criteria were absenteeism of more than two sessions in training sessions, dissatisfaction

and cooperation of individuals, and not doing the tasks specified in the training process and relapse of the disease. Compassion therapy intervention was performed in 10 sessions of 90 min (two sessions per week) in the form of face-to-face sessions with respect to protocols and social distancing and the use of personal protective equipment. During the treatment intervention, the control group was on the waiting list. After the last treatment session, post-test was performed from both groups and the data were analyzed based on multivariate covariance analysis test and SPSS software 21. After the end of the study, compassion therapy training was held in person sessions with respect to social distancing and the use of personal protective equipment for the control group. The contents of treatment sessions have been reported in Table 1.

Tanji self-control questionnaire

It has 36 questions and its purpose is to measure the extent of people's control over themselves. It has a 5-point Likert scale (1 = never and 5 = very high). The total score is a sum of all the questions. Maximum score is 180 and minimum score is 36. A high score indicates more self-control and a low score indicates low self-control. Validity of this scale was determined by assessing its correlation with the scales of academic achievement, adaptation, positive relationships, and interpersonal skills. Moreover, its reliability was determined on two statistical samples using Cronbach's

$$1 \quad n = 2 \frac{(z \frac{\alpha}{2} + z\beta)^2}{d^2}$$

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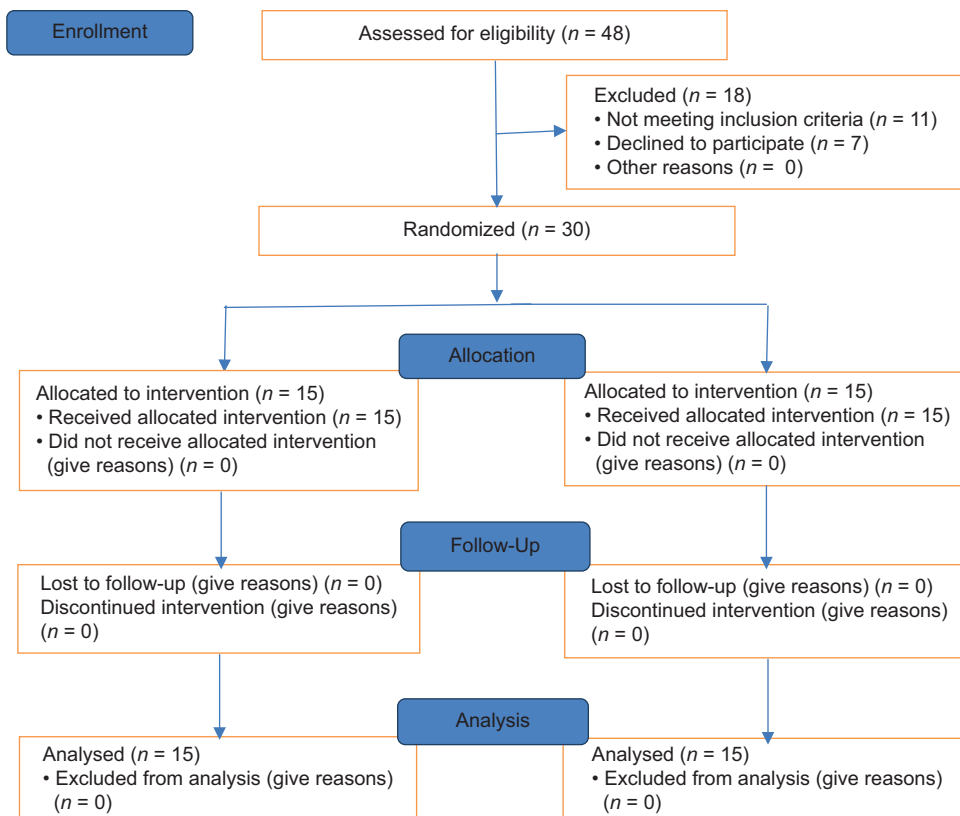


Figure 1: Consort flowchart

Table 1: The content of compassionate focused therapy sessions based on Gilbert’s treatment plan

Session	Content
First	Initial familiarity, communication, familiarity with the general concept of self-compassion and empathy and pre-test (completing demographic questionnaire, Tanji’s self-control questionnaire and Garnofsky’s Emotion Regulation questionnaires.), and giving homework.
Second	Reviewing the practice of the previous session, introducing the objectives of the session, group definition, rhythmic breathing exercise and characteristics of a group, and giving homework.
Third	Reviewing the practice of the previous session, training empathy, examining how members deal with self-criticism or compassion (defining self-criticism and its consequences), defining compassion, training to understand and feel empathy, rejection by the group as one of the biggest fears of individuals, and giving homework.
Fourth	Reviewing the practice of the previous session, what is self-compassion? Its features and skills, how it affects one’s mental states, the introduction of three emotional regulation systems, and how they interact. Shaping and creating more and more varied feelings about people’s issues to increase their care and attention to their health and giving homework.
Fifth	Reviewing the practice of the previous session, teaching forgiveness training, teaching the concept of awareness, its logic and how it is practiced, (focusing on breathing and tracking emotions and thoughts and watching them without any reaction), and giving homework.
Sixth	Reviewing the practice of the previous session, introducing mental imaging and its logic, imaging training and implementation in group (color imagination, location and compassionate characteristics), and giving homework.
Seventh	Reviewing the practice of the previous session, developing self-compassionate Concepts: wisdom, ability, warmth, and responsibility for generating compassion, training in imaging about self-compassion, training to develop valuable and transcendent emotions in order to deal effectively with the environment, and giving homework.
Eighth	Reviewing the practice of the previous session, self-centered compassion and identifying different aspects (attention, thinking, feeling, behavior, self-awareness) and giving homework.
Ninth	Reviewing the practice of the previous session, recalling compassionate skills, the role of compassion in guiding thought, thought training responses, and compassionate behavior in the face of criticism and giving homework.
Tenth	Reviewing the practice of the previous session, receiving feedback from team members on the principles taught, reviewing and summarizing past material, and post-test implementation (completing demographic questionnaire, Tanji’s self-control questionnaire and Garnofsky’s Emotion Regulation questionnaires).

alpha (0.83 and 0.85).^[31] Validity and reliability of the Persian version of the Tanji self-control questionnaire was determined by Mousavi Moghadam *et al.*^[33]

Emotion regulation questionnaire

Developed by Granefski, it is a 36-item self-report tool. The range of scores is from 1 (almost never)

up to 5 (almost always). Each subscale consists of 4 items and the total score is obtained from the sum of the subscales. A score between 36 and 72 indicates poor emotional cognitive regulation, a score between 72 and 108 indicates moderate emotional cognitive regulation, and a score above 108 indicates strong emotional cognitive regulation in individuals. The alpha coefficient for the subscales of this questionnaire has been reported by Garanfsky *et al.* in the range of 0.71 to 0.81^[32]. Hassani *et al.*^[34] obtained a 92% reliability of the Persian version of the questionnaire by Cronbach’s alpha method.

Ethical consideration

This article is the result of an investigation with the code No. THUMS. REC.1400.001 of ethics committee was sponsored by the Vice Chancellor for Research and Technology of Torbat-e Heydariyeh University of Medical Sciences. Prior to performing the study, informed consent was obtained verbally. Participation in the research did not have any financial burden for the participants. The respondents were fully informed of the purpose of the study and were ensured of the confidentiality of their personal data. Participants were also free to withdraw from the study at any stage 07/12/2021.

Results

The demographic information of the two groups is presented in Table 2. According to the results of Chi-square test, there was no significant difference between the groups in terms of age ($P = 1.444$), marital status ($P = 0.833$), occupation ($P = 1.491$), and level of education ($P = 1.329$) and they were homogeneous.

The mean and standard deviation of emotion regulation and self-control scores for pre-test and post-test in both experimental and control groups are shown in Table 3. Multivariate analysis of covariance to compare experimental and control groups in dependent variables is also presented in Tables 4 and 5. In this study, multivariate analysis of covariance was used for inferential analysis of the results. First, the required assumptions were examined. The assumptions of normality of score distribution, similarity of score variances, and equality of score covariances were examined. The results of Kolmogorov–Smirnov test showed that the distribution of communities was normal ($P = 0.181$). Levene test results for emotion regulation ($P = 0.087$, $F = 3.137$) and for self-control ($P = 0.356$, $F = 0.880$) showed that the presumption of homogeneity of variance was confirmed in all research variables. Based on the results of the box test ($P = 0.489$, $F = 0.946$, M box = 11.215), the equality of covariances was confirmed. Due to the confirmation of all assumptions, the Mancova method can be used to test the research hypotheses.

As shown in Table 4, the value of Wilkes lambda was significant ($P = 0.000$). This means that there was a significant difference between the experimental and control groups in post-test scores on the emotion regulation and self-control variables and the difference was 0.87, that is, 87% of the individual differences in the variables are related to the differences between the groups.

According to the results of Table 5, by eliminating the effect of pre-test scores, the difference between the mean of post-test scores in emotion regulation and self-control variables in the experimental and control groups was significant ($P = 0.00$). The effect of this treatment on

increasing the emotion regulation score was 49% and on increasing the self-control score was 37%.

Discussion

This study aimed at evaluating the effectiveness of compassion therapy on emotion regulation and self-control in COVID-19 patients after hospital discharge. The results showed that compassion therapy increased the emotion regulation score. This finding was consistent with the findings of Yazdanbakhsh *et al.*^[35] on the effectiveness of CFT on cognitive emotion regulation in bullying high school female students. Barchakh *et al.*^[36] study showed the effectiveness of CFT in improving emotional control and reducing pain intensity in migraine patients. Ghodrati Torbati *et al.*^[30] examined the effects of CFT on blood cortisol and cognitive-emotional regulation in drug users and showed that the compassion-focused behavioral therapy had a significant effect on blood cortisol and emotion regulation in post-test. Izanloo *et al.*^[37] also showed that the CFT and Mindfulness Based Stress Reduction (MBSR) had a significant effect on emotion regulation in patients with COVID-19 disease. Compassion-based therapy is an essential structure for emotion regulation, because compassion itself is a kind of mindfulness that allows one to understand and accept the most painful emotions in life without being frustrated and anxious by them.^[38]

In fact, compassion-based therapy can be considered as an emotion regulation strategy in various ways, through which annoying and unpleasant emotions is not prevented, but an attempt is made to accept the feelings in a kind way. Compassion-based therapy also increases positive emotions and decreases negative emotions and helps to effectively regulate emotion regulation.^[39] Therefore, positive emotions in the patient are strengthened after compassion-based therapy, because it is basically based on positive emotions. Compassion focuses more on dealing with emotions rather than avoiding it.^[40]

The next finding of the study showed the effect of this treatment on increasing the self-control score, which

Table 2: Descriptive statistics of demographic variables in the studied groups

Variable	Case, n (%)	Control, n (%)	Value (Chi-Squared)	Sig.
Age				
20-29 years	6 (40%)	3 (20%)	0.486	1.444
30-39 years	4 (26.66%)	5 (26.66%)		
40-49 years	5 (33.33%)	7 (53.33%)		
Status Marital			0.659	0.833
Single	3 (20%)	5 (33.33%)		
Married	7 (29%)	4 (26.66%)		
Divorce	5 (33.33%)	6 (40%)		
Employment type			0.475	1.491
Employee	5 (33.33%)	6 (40%)		
Freelance Job	6 (40%)	3 (20%)		
Homemaker	4 (26.66%)	6 (40%)		
Education			0.514	1.329
Sub-Diploma	4 (20%)	6 (40%)		
Diploma	4 (20%)	5 (33.33%)		
Academic	7 (40%)	4 (26.66%)		

Table 3: Mean score of emotion regulation and self-control in experimental and control groups

Variables	Group	Mean±SD	
		Pre-test	Post-test
Emotional adjustment	CFT	73.40±13.02	82.00±8.70
	Control	67.26±6.74	67.66±67.05
Self-control	CFT	68.93±6.95	77.73. ± 6.70
	Control	66.66±6.64	66.13±8.63

Table 4: Multivariate analysis of covariance to compare experimental and control groups in dependent variables

Test	Value	F	Hypothesis df	Error df	P	Partial Eta Squared	Observed Power
Pillai's Trace	0.875	43.594	4.000	25.000	0.000	0.78	1.000
Wilk's Lambda	0.125	43.594	4.000	25.000	0.000	0.78	1.000
Hotelling's Trace	6.975	43.594	4.000	25.000	0.000	0.78	1.000
Roy's Larger Root	6.975	43.594	4.000	25.000	0.000	0.78	1.000

Table 5: Multivariate analysis of covariance to compare the effect of treatment on research variables

Depended Variable	Sum of Squares	df	Mean Square	F	P	Partial Eta Squared	Observed Power
Emotional adjustment	1540.833	1	1540.833	27.422	0.000	0.49	0.999
Self-control	1009.200	1	1009.200	16.894	0.000	0.37	0.978

was consistent with the findings of Noroozi *et al.*,^[41] as they found that self-control and body image flexibility improved in the experimental group. Ghodrati Torbati *et al.*^[42] compared the effectiveness of dialectical behavior therapy and CFT on blood cortisol levels and self-control in drug users, and showed that for both groups, self-control improved and cortisol levels reduced, but the effectiveness of compassion therapy was greater than the dialectical behavior therapy.

Examining the importance of academic self-compassion and self-control, Martin *et al.*^[43] showed that self-compassion induced a kind of “emotion-oriented” self-control. Thomason *et al.*,^[44] in a meta-analysis of 10 articles on the effects of compassion-focused therapies on self-confidence, showed that this treatment increased self-confidence and improved self-control. Lack of self-control is an inappropriate motivational condition in patients that is formed in the individual’s cognitive organization; often because one of the main elements of compassion therapy is to strengthen the sense of acceptance of thoughts.^[43] The training based on this program makes people infected with various diseases such as COVID-19, do not blame themselves, and don’t make unreal judgments and evaluation. Therefore, the key aspect of CFT in patients with mental disorders, including patients with COVID-19 disease, includes helping them to be kind to themselves, improve self-control, acceptance, care, and appropriate attitudes toward experiences.

Limitation and recommendation

One of the limitations of this study is the limitation of the statistical population to the study population and not separating the patients in terms of the severity of the disease. The next limitation was holding training sessions in person for the experimental group, which despite observing social distancing and using personal protective equipment, there was still the possibility of contracting COVID-19 virus, which is suggested to be conducted in future researches on both sexes, as well as meetings in open environments if the training is held in person. Also, due to the COVID-19 pandemic, it seems that a valid and reliable questionnaire should be used to get better feedback.^[45]

Conclusion

The findings of this study showed that the CFT can increase cognitive regulation and improve self-control in patients with COVID-19 virus. Therefore, in order to prevent further psychological consequences caused by this virus, it is recommended to use this intervention in designing treatment programs for psychological centers, comprehensive health service centers, counselors, clinical psychologists, and therapists.

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Conflicts of interest

There are no conflicts of interest.

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