

The effect of training emotional cognitive regulation on hopefulness and emotional well-being of cancer sufferers in Shiraz

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ABSTRACT

The aim of this study was to investigate the effectiveness of emotion regulation training on emotional well-being and hopefulness among cancer patients in Shiraz in 2018. This research was a semi-experimental study with a pretest-posttest design with a control group. The statistical population of this study included all patients having cancer in Mir Hosseini Hospital in Shiraz. Finally, 60 people were randomly divided into two groups, including experimental (n = 30) and control (n = 30) groups. At first, both groups completed the hopefulness and emotional well-being questionnaire. Then, the treatment program was performed for 8 sessions of 60 minutes for the experimental group and during this time, the control group did not receive any intervention. At the end of the training program, the questionnaires were administered again as a post-test for both groups. The data were analyzed using covariance test. The results of the research hypotheses showed that emotion regulation training has a significant effect on emotional well-being and hopefulness in cancer patients.

Keywords: emotion regulation training, emotional well-being, hopefulness.

Introduction

Cancer is currently one of the most important health issues in the world and in Iran. Based on scientific, experimental and research evidence, this disease is one of the most dangerous chronic diseases and one of the threatening factors in societies ^[1]. According to the latest statistical studies in Iran, cancer is the third leading cause of death after cardiovascular disease and unintentional accidents, so that annually more than 38,000 people in the country die of this disease and it is estimated that more than 58,000 new cases of cancer are diagnosed each year. therefore, it seems necessary to study the level of healthfulness

and also the factors affecting it in patients with this chronic disease. There are several medical and psychological treatments for this disease. Medical treatments include surgery, radiation therapy, chemotherapy, hormone therapy, immunotherapy, targeted therapy, and drugs that fight against cancer cells are of such treatments ^[2]. A new idea is emerging in the health sciences in general and in psychology in particular. In this view and scientific approach, focusing on health and well-being is a positive aspect as well as explaining the psychological nature of well-being ^[3]. Some psychological interventions focus on cognitive and behavioral stress management skills, while others focus on providing social support and the opportunity to express emotions. receiving social support from family and friends, joining support groups, and receiving emotional support through psychological interventions may help some sufferers increase their psychological function, reduce their depression and anxiety, manage their pain and increase their lives quality ^[4]. one of these psychological interventions is cognitive emotional regulation training. emotional regulation includes a range of conscious and unconscious cognitive and behavioral strategies to reduce,

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maintain, or increase an emotion^[5]. and it has been found that people in the face of stressful events, use different emotion regulation strategies to modify or balance their emotional experience^[6]. One of the most popular of these strategies is emotional regulation using cognitive strategies. cognitions or cognitive processes help people to regulate their emotions and feelings and not be overwhelmed by the intensity of emotions^[7]. Troy (2012) also hypothesizes cognitive reassessment as an adaptive strategy and believes that since it has a direct impact on assessments, individuals can use it to change their emotional reaction to stressful events in order to improve their performance^[8]. in other words, the treatment is designed to teach patients how to deal with and experience unpleasant emotions and respond to their emotions in a more adaptive way^[9]. People who can not effectively control their emotional reactions, experience longer and more intense periods of grief and anxiety that lead to depression or anxiety. But nowadays, mental health is no longer just not having a disorder, improving the level of psychological well-being is one of the goals of psychology in this century. the results of a study by Garnefski, N., & Kraaij (2006) show that people with cancer use more maladaptive strategies such as rumination and catastrophe making, and as a result suffer more depression and negative emotions. also, patients who were more able to think about pleasant topics (rather than think about experiencing cancer) and did not constantly have negative feelings and thoughts related to the experience of cancer were more healthy^[10].

The effectiveness of cognitive behavioral therapy based interventions has attracted a lot of interest in promoting patients' health^[11-15]. for example, the effect of mindfulness intervention methods, meaning therapy, group cognitive therapy on psychological well-being of cancer sufferers in the researches of Mohammadi Ahmadabadi et al., 2017; Rahimi et al., 2017; Pourkhajavi and Zayn al-Dini, 2016; Shast fuladi and Manshayi, 2015; were checked and approved^[16-19].

Reviewing the previous performed researches, the following three hypotheses are proposed to conduct the current research:

Hypothesis 1: Emotional cognitive regulation training has a significant effect on the hopefulness and emotional well-being of cancer sufferers.

Hypothesis 2: Emotional cognitive regulation training has a significant effect on the hopefulness dimensions of cancer patients.

Hypothesis 3: Emotional cognitive regulation training has a significant effect on emotional well-being of cancer patients.

Methodology

The present study is a semi-experimental study with a pretest-posttest design with a control group. the statistical population of this study included all cancer sufferers since January to the end of

March 2016 in Mir Hosseini Hospital in Shiraz. Using Cochran's formula, 69 patients were selected, and due to inclusion criteria including (having a diploma or higher, no addiction, no mental illness and having enthusiasm and motivation) as well as exclusion criteria (illiteracy, addiction, mental illness and lack of interest and motivation to participate in the study) the population were decreased and divided to 60 people in two groups of experimental and control. before implementing the independent variable (cognitive regulation), the samples of both groups in the pre-test stage completed the research questionnaire. after completing 8 sessions of 60-minute intervention, post-test was performed on the groups. Keyes and Magyar moe (2003) and Snyder (1991) questionnaires were used to collect data and information on emotional well-being and hopefulness, respectively^[20, 21].

In the Keyes and Magyar moe (2003) questionnaire, the first 12 questions are related to emotional well-being, which uses a five-point Likert scale to score. score one means the worst state (not at all) and score five means the best emotional state (all the time)^[20]. in this questionnaire, the internal validity of the emotional well-being subscale in the positive emotion section was 0.91 and the negative emotion section was 0.78. also, psychological and social well-being subscales had an average internal validity of 0.4 to 0.7 and the total validity of both of these scales was 0.8 and higher^[20]. in the study of Keyes and Magyar moe (2003), factor validity was used to evaluate the validity of this scale. the results of confirmatory factor analysis have confirmed the three-factor structure of this scale^[20].

The Snyder (1991) hopefulness Scale has 12 questions, each of which is graded on eight scales (strongly agree to strongly disagree)^[21]. the questions in this questionnaire measure the ways to achieve the goal and agency thinking. Cronbach's alpha coefficient for this scale was 0.70 to 0.80. in addition, there is a high internal correlation between goal achievement questions and agency thinking. to evaluate the validity of this questionnaire, the correlation coefficient between this test and the existing scales was calculated, which the scales of self-fulfillment, positive attitude, ability to solve problems and having a positive impact on life showed a high and positive correlation with the scale of hopefulness. the educational programs used in this research have been extracted from reliable scientific sources and the content of the program has been approved by professors in the field of psychology before implementation. finally, analysis of covariance was used to test the hypotheses.

Table 1: Excitement regulating training program

Title/Assignment	number
Title: Introducing emotion regulation sessions, expressing natural emotion and problematic emotion, and emotional self-awareness Assignment: Group members write down their goals for attending meetings and identify the most feelings and emotions they experience in everyday relationships	Session 1
Title: Pathogenic emotions and the need for treatment, symptoms of emotional disorder and appropriate treatment and causes of emotional disorder Assignment: Completing automated forms	Session 2
Title: Introduction of cognitive errors and dysfunctional beliefs, training of problem solving skills and interpersonal skills Assignment: Performing positive daily activities and take action to resolve interpersonal problems	Session 3
Title: Story of emotional disorders and interpretation, recognition and examination of automatic thoughts, mindfulness technique Assignment: Practicing mindfulness at home	Session 4
Title: Changing and correcting interpretations, stopping mental rumination and worry and teaching attention Assignment: During emotional states such as fear, anger and sadness, perform thought control skills and change attention	Session 5
Title: Emotional behaviors and emotion coping and misdiagnosis and cognitive assessments, cognitive reconstruction Assignment: Completing the list of miscalculations, identifying these evaluations and their emotional consequences, practicing the re-evaluation strategy	Session 6
Title: Changing behavioral Consequences and teaching inhibition strategies Assignment: Implementing the technique of expressing emotion and perform the techniques of inhibition strategies	Session 7
Title: Re-evaluation and planning for the application of training Assignment: Implementing the learned skills in life	Session 8

Findings

The results of the frequency distribution of respondents according to their age in the control and experimental groups are presented in Table 2. As can be seen in each of the experimental and control groups, 12 people (20%), in the age group of 30-39 year-old, 10 people (16.6%), 49-40 year-old, and 8 people (13.4%) are over 50 years old. Also, 16 people (26.6%) are men and 14 people (23.3%) are women.

Table 2: Descriptive statistics of selected samples in each group

total		Control group		Experiment group		age
percentage	frequency	percentage	frequency	percentage	frequency	
40	24	20	12	20	12	39-30
33/2	20	16/6	10	16/6	10	49-40
26/8	16	13/4	8	13/4	8	50over
100	60	50	30	50	30	total
53/4	32	26/6	16	26/6	16	men
46/6	28	23/3	14	23/3	14	Women
100	60	50	30	50	30	total

As can be seen in Table 3, the mean scores of emotional well-being in the experiment group in the pre-test and post-test stages were 7.72 ± 2.99 and 11.30 ± 6.01 , respectively, and in the control group were 7.99 ± 2.99 and 8.7 ± 5.24 , respectively. the mean scores of hopefulness in the experiment group in the pre-test and post-test stages were 17.19 ± 3.23 and 20.81 ± 2.17 , respectively, and in the control group were 16.38 ± 4.22 and 17.12 ± 4.17 , respectively. also, the mean scores of agency thinking in the experimental group in the pre-test and post-test stage were 1.98 ± 0.56 and 2.39 ± 0.24 , respectively, and in the control group were 1.27 ± 0.46 and 1.75 ± 0.88 , respectively. the

mean scores of strategic thinking in the pre-test and post-test stages were 2.53 ± 0.25 and 3.15 ± 0.38 , in the experiment group, and $2/0 \pm 18/71$ and 2.55 ± 0.72 in control group respectively.

Table 3: Mean and standard deviation of emotional well-being and hopefulness scores and its subscales in research groups

Post-test	Pre-test	group	variable
Standard deviation \pm Mean	Standard deviation \pm Mean		
$11/6 \pm 30/01$	$7/2 \pm 72/99$	experiment	Emotional well-being
$8/5 \pm 7/24$	$7/2 \pm 99/15$	control	
$17/2 \pm 81/20$	$17/3 \pm 19/23$	experiment	hopefulness
$17/4 \pm 12/17$	$16/4 \pm 38/22$	control	
$242/0 \pm 39/$	$1/0 \pm 98/56$	experiment	agency thinking
$881/0 \pm 75/$	$1/0 \pm 27/46$	control	
$383/0 \pm 15/$	$2/0 \pm 53/25$	experiment	Strategic thinking
$2/0 \pm 55/72$	$2/0 \pm 18/71$	control	

to test the hypotheses of this study, analysis of covariance was used. in this regard, its hypotheses were examined before the analysis of covariance. in order to observe the presuppositions, the normality of the data distribution (Shapiro-Wilk test), homogeneity of variances (Levene's test), homogeneity of regression gradient and co-scattering of independent variable were examined. The results of Shapiro-Wilk test and Levene's test are presented in table 4 below:

table 4: the results of Shapiro-Wilk and Levene's test to examine the hypotheses

Levene's test		Shapiro-Wilk test		variables
P	F	P	statistic	

0/11	2/58	0/29	0/9	Emotional well-being
0/16	1/79	0/17	0/952	hopefulness
0/15	2/22	0/11	0/96	Agency thinking
0/37	0/71	0/44	0/92	Strategic thinking

As can be seen in Table 4, the significance levels of Shapiro-Wilk and Leven test for all variables are greater than 0.05, so the assumption of normality and homogeneity of variances for all variables is confirmed. another assumption of covariance analysis is the assumption that regression lines should be the same for each group in the study. if the regression lines are heterogeneous, then covariance will not be a good analysis for the data. It should be

noted that in this hypothesis, post-tests of emotional well-being and hopefulness and its subscales were considered dependent variables and their pre-tests were considered ancillary variables (covariates). The homogeneity of gradients will be assumed when there is equality between ancillary variables and dependent variables at all operating levels (experiment and control groups). in this study, there was equality between ancillary variables and dependent variables at all operating levels (experiment and control groups) (P-value>0.05).

Table 5 shows the results of multivariate analysis of covariance on the mean post-test scores of emotional well-being and hopefulness as well as subscales of hopefulness in the study groups with controlling the pre-test.

Table 5: the results of analysis of covariance of multivariate emotional well-being and hopefulness and subscales of hopefulness

power	Etha coefficient	Significance level	Df error	Df hypothesis	F	value	Name of the test
1	0/79	0/0001	46	2	13/01	0/81	Pillai's Trace
1	0/79	0/0001	46	2	12/01	0/25	Wilk's lambda
1	0/79	0/0001	46	2	15/02	4/27	Hotelling's Trace
1	0/84	0/0001	46	3	14/04	0/81	Pillai's Trace
1	0/84	0/0001	46	3	14/06	0/25	Wilk's lambda
1	0/84	0/0001	46	3	14/08	6/27	Hotelling's Trace

The results of Table 5 show that there is a significant difference between the experiment and control groups in the amount of emotional well-being and hopefulness and also in the amount of

hopefulness subscales (P-value <0.05). to determine which of the quantities differs, Multivariate covariances have been used. the results of which are presented in Table 6.

Table 6: the results of analysis of covariance of emotional well-being and hopefulness and hopefulness subscales

power	Etha coefficient	P	F	Mean of squares	Degrees of freedom	Sum of squares	indices	variable
				79/7	1	79/7	group	
1	0/59	0/001	11/30	6/88	56	385/28	error	Emotional well-being
					58	1298/04	total	
				485/57	1	485/57	group	
1	0/69	0/001	20/81	14/1	56	789/88	error	hopefulness
					58	3925/04	total	
0/94	0/54	0/0001	2/39	161/01	1	161/01	Agency thinking	
0/58	380/	040/	3/15	330/35	1	330/35	Strategic thinking	Hopefulness subscales

As shown in Table 6, with the results for emotional well-being (F = 11.30, P-Value <0.05), hopefulness (F = 20.81, P-Value <0.05), agency thinking (F = 2.39 (P-Value <0.05) and strategic thinking (F = 3.15, P-Value <0.05), it can be said that the difference between emotional well-being and hopefulness, as well as agency and strategic thinking between the study groups, is significant. this means that the mean scores of these variables in the experiment group increased significantly (P-Value <0.05). to investigate the effect of emotion regulation training on emotional well-being, the analysis of covariance (ANCOVA) was used . Table 7 shows the results of this analysis on the mean scores

of emotional well-being post-test in the study groups with pre-test control.

Table 7: the results of covariance analysis of emotional well-being

power	Etha coefficient	P	F	Mean of squares	Degrees of freedom	sum of squares	indices
				84/7	1	84/7	group
1	0/49	0/001	11/30	7/78	58	451/28	error
					60	1498/04	total

As can be seen in Table 7, with the results obtained for emotional well-being (F = 11.30, P-Value <0.05), it can be stated that the

difference in emotional well-being between the study groups, is significant. this means that the mean scores of emotional well-being in the experiment group increased significantly (P-Value <0.05).

Conclusion and Discussion

The results of examining the first hypothesis of the research on the effectiveness of emotional regulation training on hopefulness and emotional well-being showed that the difference between the level of emotional well-being and hope is significant among the study groups. it means that the mean scores of emotional well-being and hope in the experimental group have increased significantly. to explain this finding, it can be said that due to the fact that emotions are socially useful, they can be constructive in transmitting emotions to others, social interaction and maintaining or severing relationships with others, and modifying and regulating them through emotional regulation intervention can play an important role in mental health and variables related to emotional well-being, of course variables such as hopefulness. Because emotions act as solutions to the challenges and stresses and problems of life. In other words, because emotions play an important role in life, regulating emotion as a therapeutic method in modulating emotions causes an effective response to situations in which a person's emotional well-being is disturbed and he/she tends to increase activity in response to the situation. It also has social effects that reduce or increase life expectancy. Therefore, educational intervention of emotional regulation can encourage people, especially cancer sufferers, on how to deal with the positive and negative emotions caused by this disease, encourage them to identify these emotions, and strengthen their emotional well-being and hopefulness. The results of the present study are in line with the results of Wojtyna et al. (2007), Peh et al. (2017), Tamagawa et al. (2013), Statone & Low. (2012), Ciuluvica et al. (2014) and Webb et al. (2012) [12, 13, 22-25].

The results on the second hypothesis of the study regarding the significant effect of emotion regulation training on emotional well-being, showed that the difference in emotional well-being between the study groups is significant. This means that the mean scores of emotional well-being in the experiment group increased significantly. Since emotional regulation leads to the regulation and management of emotions and having positive emotional regulation skills leads to positive adaptation, so emotional regulation can play an important role in life and increase emotional well-being in life. It can also be pointed out that cancer sufferers in different life situations are more likely to not be able to use positive emotions effectively and, in contrast, have a lot of negative emotions, and this causes other problems such as negative self-perceptions, anxiety about relationships with others, and poor social functioning, which are all reasons why their emotional well-being is impaired. thus, training of emotional regulation in cancer sufferers causes them to use the right emotions, awareness of emotions and acceptance of it and

express emotions, especially positive emotions in life situations and reduce their negative emotions, consequently their level of adaptation, in the scales of social adaptation will improve. The results of this part of the research are in line with the results of Rahimi et al. (2017), Pourkhajavi and Zainuddin (2015), Tamagawa et al. (2013) and Web et al. (2012) [17, 18, 23, 25].

According to the results obtained for the scores of agency thinking and strategic thinking, it can be said that the difference between the level of agency thinking and strategic thinking between the groups is significant and the results indicate that the mean scores of agency thinking and strategic thinking in the experiment group increased significantly. Therefore, it can be stated that cancer patients have repressed and chronic emotions and have high levels of anxiety and mental stress in both stages before and after diagnosis. Such patients need psychological interventions, including communication and encouragement to express emotions. Approaches to emotional regulation interventions increase hopefulness in cancer sufferers, due to the creation of mental experiences and positive emotions in them and using the solutions for facing negative emotion in order to cope with the disease. dealing with negative emotions can also be used serve in various functions such as maintaining self-confidence, providing a sense of significance and purpose, peace of mind and ultimately increasing a sense of hopefulness. The results of this part of the research are consistent with the results of Pourfaraj and Rezazadeh (1397), Wojtyna et al. (2007), Peh et al. (2016), Ciuluvica et al. (2014), Tamagawa et al. (2013), Statone and Low (2012) and Webb et al. (2012) [12, 13, 22-26]. Considering that non-pharmacological treatments can play an important role in the health care system, with the knowledge of these results, useful activities can be taken to promote the psychological and physical health of cancer sufferers. Specialists and psychologists can help these patients improve their health by adopting an appropriate psychotherapy program that focuses on appropriate coping strategies and adaptive cognitive emotional regulation techniques. the results of this study can play an important and effective role in recognizing and clarifying the effective factors in effective and consistent adaptation to this disease, reducing its complications and as a result, the emotional well-being of cancer patients. Also, the findings of this study can be the basis of research and other clinical interventions, especially in the field of health psychology. therefore, it is suggested that in addition to medical treatments for cancer patients, non-pharmacological treatments be used that soothe their minds and improve their mental life and increase their life expectancy. Maintaining life expectancy and healthy personal growth, having warm relationships with others, having emotional security and self-acceptance based on reality, which are the characteristics of emotional well-being, are so important that if left unchecked, it can affect life expectancy and affect the healing process of these patients and make them practically paralyzed. Finally, researchers hope that such kinds of research can contribute to the mental health system of cancer patients.

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