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# A Study on the Effectiveness of Mindfulness Techniques on Cognitive Emotion Regulation in Nurses

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### ABSTRACT

The following study was conducted to study the effectiveness of mindfulness techniques on cognitive emotion regulation in nurses. The method in this research was quasi-experimental with pretest and posttest design with control group. The statistical population in this research included all nurses in Shiraz County Dena Hospital during 2018. The sample included 30 participants who were selected through convenience sampling and they were randomly divided into two groups of experiment (15 members) and control (15 members). The data collection instrument in this research was Garnefski (2002) Cognitive Emotion Regulation Questionnaire (CERQ). In order to analyze the data, analysis of covariance (ANCOVA) was used by SPSS. The results indicated that there is a significant difference between means of adaptive and non-adaptive emotion regulation strategies scores in nurses in experiment and control groups in posttest stage. ( $p < 0.01$ ) Hence, mindfulness techniques has been effective in cognitive emotion regulation in nurses.

**Keywords:** Mindfulness techniques, Cognitive emotion regulation, Nurses.

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### INTRODUCTION

Nurses are the largest group of healthcare service-providers and they are the principal column of healthcare quality improvement process. Hence, their performance is crucial in advancing the organizational goals. (Brundtland, 2002) Nurses are exposed to many stresses due to the nature of their jobs and among them could be referred to the long and continuous involvement with the patients, extreme personal requests from the patient and their families, rapid advancement of technology, constant confrontation with the reality of death and subsequent to them, is the adverse physiologic and psychologic effects that lead to negative consequences such as illness, absences, decrease in job functionality, disorder in emotion regulation, decrease in efficiency, and ultimately risking humans' lives. (Babai Nadinlui et al., 2017).

When facing stressful events, individuals tend to use different emotion regulation strategies for correcting or adjusting their emotional experience. (Aldaw, Nolan, Huksma and Sawyers, 2010) One of the most common strategies in this regard is the emotion regulation using cognitive strategies. Cognitions or cognitive processes help the individuals to regulate their emotions and feelings and not get defeated by the intensity of the emotions. Cognitive emotion regulation refers to the cognitive method of management and manipulating the emotion recalling data input. (Owksner Gras, 2005).

Strategies that individuals use for emotion regulation has been studied in many theoretical and applied studies and they have been discussed under the title of adaptive and non-adaptive strategies. (Kring and Saloon, 2010) Garnefski et al (2001) introduced nine different strategies of cognitive emotion regulation under the titles of self-blame, acceptance, rumination, positive refocusing, positive reappraisal, planning, putting into perspective, catastrophizing, and other blame.

Cognitive emotion regulation has a fundamental role in many normative processes and it is one of the most important components of coping process against negative stimuli and unpleasant emotional experiences. In this regard, the research results indicate a strong relationship between cognitive emotion regulation strategies and emotional problems. (Garnefski et al, 2005;

Garnefski et al, 2001; Garnefski et al, 2002) Generally, the research results propose that individuals who use weak cognitive styles such as rumination, catastrophizing and self-blame, are more vulnerable against emotional problems, comparing to other individuals. However, in individuals who use desirable styles such as positive reappraisal, the vulnerability is lower. (Garnefski, 2006) Overall, cognitive emotion regulation enables humans to cope with various environmental events with a higher flexibility. (Hasani, 2010).

To improve the mental condition, along with medicinal therapies, different psychological therapies have been invented during years. Mindfulness interventions are considered as one of the third-generation or third wave therapies. Mindfulness is a form of meditation that has its origins in oriental religious teachings and rituals, especially Buddhism. (Ovest, 2008) Kabat zin, defines mindfulness as paying attention to a specific, purposeful method at the present time and without any judgment or prejudice. (Segal et al, 2002) Mindfulness requires three qualities of avoiding judgment, intentional awareness and focusing on the present time in the individual attention, and focused attention on the present time leads to process of all immediate experience aspects including cognitive, physiologic and behavioral activities. Through mindfulness trainings and techniques, the individual becomes self-aware on the daily activities, becomes aware of the automatic mind function in the past and future world and through moment-to-moment awareness of thoughts, feelings and physical states, they can control them and become free of the daily and automatic mind focused on the past and the future. (Segal et al., 2002; and Tizdel, 2004) In mindfulness, the individual becomes aware of their mental mode in any moment and after awareness on two mental modes, doing and being, they learn to move mind from one mode to another, which requires trainings special behavioral, cognitive and metacognitive strategies for attention process focusing. (Segal et al., 2002)

A wide range of studies, so far, has approved the effectiveness of mindfulness techniques. Among them could be referred to Hayes (2002) and Finucane (2003) that showed this therapy has been effective in eating disorders, post-traumatic stress disorder, bipolar disorder, depressed mood disorder and anxiety disorders. Additionally, some of these studies have shown that mindfulness interventions has affected depression (Hofmann and Gomez, 2017; Johnson et al., 2015; Hoseyni et al., 2016; Dehestani, 2015), emotional problems (Van son et al., 2014) and cognitive emotional regulation strategies (Beyrami et al., 2014). Since mindfulness could increase the attention and awareness of the individual towards physical and mental feelings and lead to the sense of trust in life, deep sympathy, the sense of deep love to others and actual acceptance of life events, teaching mindfulness leads the individual to recognize their capabilities and cope with life stresses, be useful and constructive in job, and have the necessary cooperation with others as a member of the society. Considering the abovementioned, the following study was conducted to study the effectiveness of mindfulness techniques on cognitive motion regulation in nurses.

### **Methodology**

The method in this research was quasi-experimental with pretest and posttest design with control group. The statistical population in this research included all nurses in Shiraz County Dena Hospital during 2018. The sample included 30 participants who were selected through purposive sampling and they were randomly divided into two groups of experiment (15 members) and control (15 members).

### **Research Instruments**

**Cognitive Emotion Regulation Questionnaire (CERQ).** This questionnaire is a multi-dimensional questionnaire that was designed by Garnefski et al. (2002) and is used to identify the individual's cognitive coping strategies after experiencing negative events or situations. This questionnaire includes 36 items in a five-point Likert scale (from Always to Never) that assesses two adaptive emotion regulation strategy and non-adaptive emotion regulation strategy. The alpha coefficient for the subscales of this questionnaire was reported to be in the range of 0.71 and 0.81 by Garnefski et al. (2002) and reliability coefficient of the subscales through test-retest method in a 14-month time was reported to be in the range of 0.48 and 0.61.

### **Implementation Method**

In order to implement this study, initially 30 individuals were chosen and were asked to answer the measuring instrument in two groups of experiment and control. Subsequently, the independent variable, which was mindfulness techniques, was applied to the experiment group and after the intervention, both experiment and control group answered the measurement instrument as the posttest. The number of therapy sessions for ACT was 8 sessions. In any session, a brief of the issues discussed in the previous sessions were discussed again and the two sessions were linked together again. The therapy sessions were held once a week for two hours. The ACT sessions are as the following:

Table 1. Contents of Mindfulness Training Sessions (Segal et al., 2002)

Sessions	Topic	Plan
First Session	Automatic Pilot	A Definition of Mindfulness
		Raisin Exercise (it is a meditation in which the participants spend a few minutes to study their sight, smell, taste, sense a raisin). Home assignment: Body scan during 6 days Body Scan, Home Assignment: Carrying out mindfulness of a normal daily activity in each day (washing, eating, brushing, etc.)
Second Session	Dealing with Barriers	Exercising thoughts and feelings, Home Assignment: Pleasant Events Calendar
Third Session	Mindfulness of the Breath	Sitting Meditation, Home Assignment: Breathing space for 3 minutes per day
		Mindfulness walking, Home Assignment: Mindfulness walking The 3-Minute Breathing Space, Home Assignment: Unpleasant Events Calendar
Fourth Session	Staying in Present Time	Seeing/Hearing Meditation, Home Assignment: Sitting Medication
		Sitting Medication, Home Assignment: 3-Minute Breathing Space, not only three times per day, but any time they feel stressed or unpleasant emotions
Fifth Session	Permissions	Sitting Medication, Home Assignment: Guided Sitting Medication
Sixth Session	Thoughts are Not Facts	Imaginative Sitting Meditation, Home Assignment: Shorter Guided Sitting Medication for at Least 40 Minutes
		Vague Scenarios Home Assignment: 3-Minute Breathing Space, not only three times per day, but any time they feel stressed or unpleasant emotions
Seventh Session	How Can I Best Take Care of Myself?	Pointing out the relationship between mod and activity, Home Assignment: 3-Minute Breathing Space, not only three times per day, but any time they feel stressed or unpleasant emotions
		Discussing Symptoms, Home Assignment
Eighth Session	Using What Has Been Learned	Body Scan, Home Assignment: Reflection, Feedback

**Findings**

In order to test the research hypotheses, ANCOVA was used through SPSS ver. 22. To observed the assumptions of the ANCOVA test, the assumptions of this test were studied and approved by Shapiro–Wilk test, Levene test and homogeneity slope of regression. Table 2 presents the descriptive statistics of emotion regulation based on group and stage of the test:

Table 2. Mean and Standard Deviation of Pretest and Posttest Scores of Emotion Regulation and its Components in Both Groups

Variable	Group	Numbers	Pretest		Posttest	
			Mean	Standard Deviation	Mean	Standard Deviation
score of emotion regulation adaptive	Experiment	15	48.46	9.04	61.60	11.54
	Control	15	51.93	11.94	50.93	12.34
non-adaptive strategies among	Experiment	15	60.40	11.31	47.26	10.14
	Control	15	58.73	11.17	59.33	11.77

As it could be observed from table 2, there is no significant difference between the pretest scores of emotion regulation in both groups. In addition, it is observed that the mean of emotion regulation adaptive strategies scores in the experiment group has increased in the posttest, while the non-adaptive strategies scores have decreased, while there is no significant difference between the control group in pretest and posttest for emotion regulation adaptive and non-adaptive strategies. Table 3 presents the ANCOVA results from the differences between the groups in emotion regulation, in posttest:

Table 3. Univariable ANCOVA Results on the Posttest Scores of Emotion Regulation Strategies

Sov	Posttest	ss	df	Ms	F	Significant	Etta Sq	Statistical
Group	score of emotion regulation adaptive	1444.355	1	1444.355	40.587	0.001	0.601	1.000
	non-adaptive strategies among	1351.143	1	1351.143	40.485	0.001	0.600	1.000
Error	score of emotion regulation adaptive	960.842	27	35.587	-	-	-	-
	non-adaptive strategies among	901.092	27	33.374	-	-	-	-

As it could be observed from Table 3, there is a significant difference between the score of emotion regulation adaptive and non-adaptive strategies among the participants based on their group (experiment or control) in posttest stage. (p<0.01) Hence, mindfulness techniques have been effective on cognitive emotion regulation in nurses. The effect rate of emotion regulation adaptive strategies was 60.1 percent and emotion regulation non-adaptive strategies was 60 percent in posttest.

**Discussion and Conclusion**

The objective in this research was to study the effectiveness of mindfulness techniques on the cognitive emotion regulation in nurses. Hence, after the implementing this method and studying the pretest and posttest results it could be concluded that mindfulness techniques has been effective on cognitive emotion regulation in nurses. A wide range of studies, so far, has used mindfulness techniques in different fields and has approved the effectiveness of mindfulness techniques and among them could

be referred to Hofmann (2017) and Johnson et al. (2015), Svan et al. (2014), Hays (2002), Finucane (2003), Hoseyni et al., (2016), Dehestani (2015) and Beyrami et al. (2014).

In the presence of the mind, the individual focuses their awareness from the past and the present to the present time. When the individual is in the present time, they see the reality with all its intrinsic and extrinsic aspects and understands that the mind creates or intensifies cognitive bias, depression, anxiety and stress through the judgments and interpretations it conducts. In mindfulness, the individual focuses on the thoughts of self and checks them without disgust or judgment and finds the reason for their existence. Training mindfulness helps the individuals to understand that “thoughts are only thoughts” and when the individual understands that their thoughts might not be real, they can get rid of them more easily. Moreover, by accurate observation of the internal reality, they understand that happiness is not a quality that depends on external elements or changes in the outside world, and it happens when the individual gets rid of thought dependence, prejudice and mental plans that are predetermined and as a result get rid of automatic behaviors that they carry out to reach pleasant situations and avoid the painful situations and reach freedom.

Any given study has inevitably its limitations that make the interpretation of the findings in the context of the limitations. Among the limitations of this research could be referred to the fact that the results in this research cannot be generalized and also the fact that it could not be controlled or measured after several months. Hence, it is recommended that the later studies follow-up is used. Also, it is recommended that in the future studies, the effectiveness of this therapy method in cognitive emotion regulation is compared with other third-wave therapies such as ACT.

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