



## Efficacy of emotion regulation techniques in hopelessness, worry, and anxiety in chronic infertile women: A short report

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### Short Communication

#### Abstract

**BACKGROUND:** Infertility, as an important stressful factor, is involved in development of mood disorders. In this regard, this study assessed the effect of emotion regulation techniques on hopelessness, worry, and anxiety symptoms in chronic infertility in women.

**METHODS:** This was a semi-experimental study with pretest-posttest design and control group. Statistical population consisted of infertile women who referred to gynecology clinics in Tehran, Iran, in 2017. All individuals fulfilled the anxiety and depression questionnaires and then, 30 women were selected randomly in two experimental and control groups, 15 persons in each group. Emotion regulation techniques were implemented on experimental group once a week, but the control group was on the waiting list. Both groups fulfilled the Beck Anxiety Inventory (BAI), Beck Hopelessness Scale (BHS), and the Penn State Worry Questionnaire (PSWQ) in baseline and the end of the intervention. The results were analyzed using multivariate analysis of variance (MANOVA) and SPSS software.

**RESULTS:** Emotion regulation techniques led to reduction of worry ( $F_{(1,30)} = 8.29, P < 0.05, d = 0.71$ ), hopelessness ( $F_{(1,30)} = 6.32, P < 0.01, d = 0.57$ ), and anxiety ( $F_{(1,30)} = 8.69, P < 0.05, d = 0.39$ ) in infertile women.

**CONCLUSION:** Considering the effectiveness of emotion regulation techniques in reduction of anxiety, hopelessness, and worry in infertile women, these techniques could be applied for improvement of mood in infertile women.

**KEYWORDS:** Emotion Regulation Techniques; Mood; Worry; Hopelessness; Anxiety; Infertile Women

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### Introduction

Infertility is a general health problem that has caused 15% of couples in the world.<sup>1</sup> In addition, in Iran, 22% of infertile patients experience mental and social consequences.<sup>2</sup> In fact, infertility is a complicated event in an

individual's life that is threatening and stressful psychologically. Hence, many scholars have considered psychological outcomes of infertility similar to grief reactions.<sup>3</sup> Infertility is a process that affects body, job, personality, and mentality and through this, it can have negative effects on emotions, personality, and cognition.<sup>4</sup> Besides, infertility could lead to depression and anxiety in infertile women.<sup>5-7</sup>

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Emotion regulation plays a key role in adaptability of people with the stressful events of life. Obtained results from studies demonstrate that people's capacity to control their emotions can affect their psychological, physical, and interpersonal happiness. Any deficit and disorder in emotion regulation can decrease the abilities of individuals in management and control of negative and intense emotions.<sup>8</sup>

In a study on Korean infertile women, 40% of infertile women suffered from worry, 23% from anxiety, and 17% from major depression and one of the effective psychological interventions was emotion regulation.<sup>9</sup>

According to relevant studies, infertile women are vulnerable to hopelessness, imperfection, isolation, anxiety, and depression, and emotion regulation skills could enable them to tolerate distress.<sup>10</sup> The present study has been conducted with the purpose of assessing the effectiveness of emotion regulation techniques in depression, hopelessness, worry, and anxiety symptoms in chronic infertility in women.

## Methods

This was a semi-experimental study in the form of pretest-posttest with control group. The statistical population consisted of all infertile women with at least a five-year history of infertility who referred to clinics for women in 2017. Initially, three clinics were randomly selected from those that were assigned to treat infertility. Then, all patients who referred to the clinics with a 5-year history of infertility filled out the Beck Anxiety Inventory (BAI), Beck Hopelessness Scale (BHS), and the Penn State Worry Questionnaire (PSWQ). 30 people were selected randomly and were divided into experimental and control groups (15 people in each group).

Inclusion criteria included age of 20-45 years old, minimum educational level of secondary school certificate, being resident in Tehran, lack of serious psychological disorders

such as psychotic and bipolar disorder and lack of addiction, diagnosis of infertility since 5 years ago, and consent to participate in the study. Exclusion criterion included not willing to participate in the study. Experimental group received emotion regulation intervention individually in eight sessions (each session: 45 minutes).

The training package for training patients was derived from Dialectical Behavior Therapy of McKay et al.<sup>10</sup> The data were analyzed using multivariate analysis of covariance (MANCOVA) statistical method and SPSS software (version 22, IBM Corporation, Armonk, NY, USA).

**BHS:** BHS is a 20-item instrument that can measure the severity of negative thoughts about the future. This scale assesses the extent of hopelessness and can predict suicide risk.<sup>11</sup> The Iranian version of this scale has validity of 48.9%.<sup>12</sup>

**BAI:** The BAI is a 21-item scale. Each item on the scale describes signs and symptoms of anxiety. Kaviani and Mousavi have obtained validity of the inventory to be 0.72 in Iranian population and validity coefficient of test-retest with interval of 1 month to be 0.83; they have obtained Cronbach's alpha to be 0.92.<sup>13</sup>

**PSWQ:** The PSWQ is a good scale for assessing pathological worry in both patients and normal populations. The PSWQ is a 16-item inventory designed to identify excessiveness and severity of pathological worry. In Iranian population, the validity coefficient of test-retest with interval of 1 month was found to be 0.83 and Cronbach's alpha to be 0.84.<sup>15</sup>

## Results

According to demographic information table, number of participants was equal to 30 people with age range of 29 years old and in terms of educational level, 3 people had Master of Arts (MA) degree, 10 people Bachelor of Arts (BA) degree, 7 people post diploma, 6 people diploma, and 4 people below diploma.

**Table 1. Frequency and percent of demographic information**

		N	n (%)	Valid percent	Cumulative percent
Age (year)	20-30	30	14 (46.7)	46.7	46.7
	30-40		12 (40.0)	40.0	86.7
	40		4 (13.3)	13.3	100
Job	Employed	30	11 (36.7)	36.7	36.7
	Housewife		19 (63.3)	63.3	100
Marriage duration (year)	5-10	30	14 (46.7)	46.7	46.7
	10-15		10 (33.3)	33.3	80.0
	15-20		6 (20.0)	20.0	100
Beginning of fertility treatments	< 2	30	3 (10.0)	10.0	10.0
	2-5		6 (20.0)	20.0	30.0
	5-10		21 (70.0)	70.0	100
Type of infertility therapy	Pharmacotherapy	30	15 (50.0)	50.0	50.0
	IVF		8 (26.4)	26.7	76.7
	Traditional medicine		7 (23.3)	23.3	100

IVF: In vitro fertilization

Moreover, 11 participants were employed and 19 women were housewives. Other information could be observed in table 1.

Our main hypothesis was that infertile women who completed the treatment would show statistically significant differences on outcome measures at post intervention when compared with their own pre-intervention scores. There were significant main effects for time on all within-subject's comparisons. Besides, pre-intervention and post intervention effects were: BHI:  $F_{(1,30)} = 8.69$ ,  $P < 0.05$ ,  $d = 0.390$ ; BHS:  $F_{(1,30)} = 6.32$ ,  $P < 0.01$ ,  $d = 0.57$ ; PSWQ:  $F_{(1,30)} = 8.29$ ,  $P < 0.05$ ,  $d = 0.71$  for these results.

**Table 2. Frequency and percent of demographic information**

Measure	Mean ± SD	D	F	D	P
BAI-11			8.69		0.05*
Pretest	18.60 ± 7.60				
Post-test	9.12 ± 6.80				
BHS			6.32		0.01**
Pretest	95.70 ± 5.30				
Post-test	3.20 ± 3.20				
PSWQ					
Pretest	56.43 ± 12.77				
Post-test	43.78 ± 8.70				

$p < 0.05$ \*\*\*  $p < 0.01$

BAI: Beck Anxiety Inventory; BHS: Beck Hopelessness Scale; PSWQ: Penn State Worry Questionnaire; SD: Standard deviation

## Discussion

The current study results showed that

emotion regulation intervention could significantly reduce symptoms of anxiety, hopelessness, and worry in infertile women. The results have been in consistence with findings of Asmand et al. in 2015. They showed in their studies that emotion regulation intervention could reduce anxiety in patients.<sup>15</sup> Emotion regulation as a critical technique could reduce tension and anxiety; therefore, infertile women could have better quality of life. The results of current study showed reduced hopelessness by emotion regulation skills. This finding is in consistence with findings of Khani et al. They showed that emotion regulation skills could reduce hopelessness.<sup>16</sup> This reduction is due to identifying and changing automatic thoughts and doing pleasant activity. Moreover, the results of this study are in consistence with findings of Chi et al. about the efficacy of emotion regulation techniques in reduction of worry and anxiety symptoms.<sup>9</sup> Infertile women can control their negative emotions, worry, and preoccupations if they earn distress tolerance skills. It could be mentioned that training emotion regulation techniques could decrease depression, anxiety, hopelessness, and worry in infertile women. In this regard, teaching these techniques to infertile women with mood disorders can improve their mental health

and quality of life.

### Conclusion

Distress could increase somatic problems and process of infertility treatment. Infertile women can control their negative emotions such as worry, negative thought, and preoccupations if they earn distress tolerance skills. It could be mentioned that training emotion regulation techniques could decrease depression, anxiety, hopelessness, and worry in infertile women. In this regard, teaching these techniques to infertile women with mood disorders can improve their mental health and quality of life.

### Conflict of Interests

Authors have no conflict of interests.

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