

*Original Article*

## The Effectiveness of Emotion Focused Therapy on Infertility Stigma, Marital Intimacy and Perceived Stress of Infertile Women Referring to Medical Centers in Tehran

Fatemeh Pouraram<sup>1</sup>, Mahdiah Rahmanian<sup>2\*</sup>, Ezzatollah Kordmirza Nikoozadeh<sup>3</sup>

<sup>1</sup>Master of Psychology, Department of Psychology, Payame Noor University, Tehran, Iran

<sup>2</sup>Associate Professor, Department of Psychology, Payame Noor University, Tehran, Iran

<sup>3</sup>Associate Professor, Department of Psychology, Payame Noor University, Tehran, Iran

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### Abstract

**Background and Aim:** The main aim of this research was to investigate the effectiveness of emotion-focused therapy on infertility stigma, marital intimacy and perceived stress of infertile women visiting medical centers in Tehran.

**Materials and Methods:** This is an experimental study with a pre-test/post-test design with a control group. The research sample was 34 infertile women in Tehran (17 people in each group) who were selected via purposive sampling and assigned to two experimental groups and one control group. In order to collect data, the well-being questionnaire of infertility stigma, marital intimacy and perceived stress was used. One group received emotion-focused therapy and the control group did not receive any form of therapy.

**Results:** The results of covariance analysis showcased that emotion-focused therapy has significantly reduced the negative feeling of marital stigma, so that the participants' sense of self-worth increased, their feeling of withdrawal decreased, and the negative feelings of family stigma and public stigma also decreased. Moreover, this treatment increased the marital intimacy of infertile women. In addition, the amount of negative perceived stress of these women was significantly reduced and their positive perceived stress was also improved ( $P < 0/05$ ).

**Conclusion:** It is concluded that emotion-focused therapy is a useful and effective treatment for reducing negative stress, infertility stigma and increasing and improving marital intimacy of infertile women and this treatment can be used to increase marital satisfaction and reduce divorce.

**Keywords:** Emotion focused therapy, Infertility stigma, Marital intimacy, Perceived stress

\*Corresponding Author: Associate Professor, Department of Psychology, Payame Noor University, Tehran, Iran. Tel: (+98) 912-2367857. Email: m.rahmanian@pnu.ac.ir.

ORCID: 0000-0002-6745-1426

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## Introduction

**F**ertility is a vital component of population dynamics that plays a significant role in shaping the size and composition of a specific populace (1). Conversely, infertility can have numerous adverse effects on both the family and society. According to the World Health Organization (WHO), infertility is characterized as the inability to conceive despite two years of cohabitation and exposure to pregnancy, or the failure to achieve clinical pregnancy after 12 months or more of regular unprotected intercourse (2). Causes of infertility include ovarian and uterine disorders, nutritional deficiencies, anemia, thyroid dysfunction, genetic disorders and mental health problems such as anxiety and depression (3).

On average, the prevalence of infertility among couples worldwide ranges from 8-12%. According to WHO, more than 180 million couples in developing countries suffer from infertility. According to the Center for Disease Control 1.5 million women in the United States (6%) are infertile, and 25% of infertile couples have multiple factors contributing to their infertility (4). In Iran, the prevalence rate of infertility has been documented at 13.2% (5). Infertility can be classified as primary or secondary. Primary infertility pertains to couples who have never been able to conceive, while secondary infertility refers to the inability to conceive subsequent to a previous pregnancy in the absence of contraception, breastfeeding, or postpartum amenorrhea (5).

This issue can cause additional issues for this group of women. One consequence is the presence of the stigma of infertility, which is considered an important structure in the field of mental health. According to Goffman, stigma originates from the perceived difference between personal virtue and identity standards that each person applies to themselves. Whether this stigma is overt or concealed, a person may experience discrimination. Stigma of infertility causes an infertile person to experience discrimination from their spouse or other family members (6), their friends might insult them or engage in gossip behind their backs (7), or they may be mistreated. (8). All of these

problems contribute to psychological distress in infertile women (9).

Conversely, the experience of infertility is linked to a decline in marital intimacy. Intimacy is a multi-dimensional concept that primarily refers to a close interpersonal relationship characterized by a strong desire to provide care, engage in self-disclosure, and enjoy being close to one another. However, infertility leads to social withdrawal and excessive stress in marital, interpersonal and social relationships, reducing self-confidence and ultimately increasing marital exhaustion in couples, especially in women (10). In such a way that the issue of infertility in couples may give rise to an increase in marital conflict, which may lead to extramarital affairs and ultimately divorce (11). In other words, infertility may prompt couples to restrict their interactions with others, particularly friends who are expecting or have children. Nevertheless, they are unable to entirely avoid the conflicts that arise as a result of infertility within their marital relationships (12). Stress caused by infertility, whether directly or indirectly, damages the marital relationships of infertile people and may lead to divorce (13).

Furthermore, infertility can be perceived as a stress-inducing factor in and of itself (14). Evidently, the stress associated with infertility is a collection of symptoms that manifests itself after the diagnosis of infertility in people and appears as a combination of five components, namely social anxiety, sexual anxiety, communication anxiety, the desire for parenthood, and the inability to accept a childless lifestyle (15). These components have the potential to impact marital compatibility and relationships (16).

In developing countries, there is a notion that childless couples are infertile. Thereby rendering infertility, a threat to marital stability within these countries (17). In fact, the increase in psychological distress and constant stress that these women experience during this period causes them to have a low quality of life and mental health (18).

Consequently, one of the most prevalent crises faced by these individuals is extensive and exhausting stress. Thus, infertility stress is the interplay between physical conditions that predispose to infertility, medical interventions, reactions from others, and inherent

psychological traits that may persist for an extended duration (19).

Within this context, a study was used to investigate the stress, anxiety, and depression of infertile couples with poor results of intrauterine insemination (IUI) and in vitro fertilization (IVF). The results revealed that the stress of either the man or the woman in the relationship is related to the low probability of achieving clinical pregnancy and giving birth to a live baby (20). In recent decades, certain psychotherapists have endeavored to use new approaches in psychotherapy for this specific demographic. One such approach is emotion-focused therapy, wherein the alteration of emotions is deemed fundamental to understanding the origin and treating the patients' problems (21). This therapeutic approach stands out as one of the few models that combines client-centered therapeutic approach, Gestalt therapy and cognitive principles and is considered as a structural-experimental approach within the realm of psychotherapy activities and contemporary psychological theories (22).

According to the emotion-focused therapy guide, this therapy is performed in three stages: emotion identification, emotion regulation, and behavioral measures (23). In the emotion identification stage, an attempt is made to make the patients understand the relationship between their ignored emotions and experiences with the symptoms of their disease. At this stage, the therapist tries to encourage the patient to verbally express their feelings regarding their experiences and provide the necessary psychological space for them to express their emotions. In the emotion regulation stage, practical techniques such as relaxation techniques are taught to empower patients to take control of their negative emotions and build confidence in their recovery. In the third stage, which is based on the principle of change through emotional shifts, the therapist asks the patient to list the activities that are naturally enjoyable, select a number of them based on their practicality and use them when they have negative feelings (23). The studies that were conducted in this field are indicative of its effectiveness. For example, Rostami *et al.* (24) showcased in research that emotion-focused therapy was effective in increasing the indicators of couples' marital satisfaction. Yavari

Kermani *et al.* (25) found in a study that the emotional freedom technique intervention has reduced trait anxiety among women who participated in the treatment phase, resulting in an impressive improvement rate of 75.38%. In addition, the effectiveness of this treatment on increasing marital intimacy (26), reducing stress (27,28), stigma and labeling (24,29) have been proven. According to the aforementioned issues, it is imperative to investigate the prevalence of infertility worldwide, particularly in Iran, and its resulting psychological impacts (30). In fact, past studies have shown that 69.19% of infertile women feel stigmatized and 53.08% of infertile women suffer from infertility stigma (31).

Furthermore, the issue of infertility is considered as one of the important issues in the process of occurring demographic changes in Iran. Therefore, the quality of the relationship between the family, particularly the spouse, and the individual facing infertility, as well as the support provided by them in this crisis situation, has a significant effect on the mental well-being of the infertile person. On the other hand, it is possible to prevent the psychological damage of this problem by performing psychological interventions. Additionally, since such research has not been done in Iran under this specific title, the current study is considered new and novel from this point of view. Therefore, in order to reduce the negative consequences of infertility, the present study aims to assess the effectiveness of emotion-focused therapy on the stigma of infertility, marital intimacy and perceived stress of infertile women referring to medical centers in Tehran.

## Methods

The current study used a semi-experimental study method with a pre-test/post-test design. The statistical population of the study consisted of all women diagnosed with primary and secondary infertility who referred to medical centers in Tehran in 2001. In order to determine the sample size of this study, G-Power software program was utilized.

Taking into account that the Cronbach's alpha was 0.05, the acceptable level of test power was equal to 0.80 and the effect size was 0.50, 15 people were obtained in each group. Thus, after identifying the

infertile women who referred to specialized infertility centers in Tehran in 1401, a total number of 34 infertile women whose infertility problem was due to themselves were selected as a sample with their personal consent. By the use of random selection, they were divided into two groups (17 people in the control group and 17 people in the experimental group and were subjected to emotion-focused therapy in the form of eight 90-minute sessions.

The inclusion criteria consisted of: obtaining a score above the cut-off point of the questionnaires used in the research, being literate, being in the age range of 25 to 45 years, giving written consent to participate in the research, not having a history of brain injury, head trauma or other severe psychiatric disorders and underlying diseases, not receiving any psychological treatment until the start of the research, having a history of drug treatment for less than two years, and failure to achieve a successful pregnancy with unprotected intercourse for 12 months or more. The exclusion criteria consisted of: being unwilling to cooperate, the questionnaire being incomprehensible, being absent in more than 2 sessions, and simultaneously using other treatments. After the intervention and the post-test, the data were analyzed through one-way covariance analysis and by using the SPSS version 26 statistical software.

The current research at Payam Noor University of Tehran has an ethics code (IR.PNU.REC.1402.222).

## Materials

### Infertility Stigma Scale (ISS)

This scale was made as an index of perceived stigma and self-stigmatization of women who deal with infertility diagnosis and treatment. This scale was compiled by Fu et al. (32) and includes 27 items, with options on a 5-point Likert scale which consists of completely disagree = 1, somewhat disagree = 2, not sure = 3, somewhat agree = 4, and completely agree = 5. The minimum and maximum score in this tool is 27 and 135, respectively. In the Persian version of this comparison, the Cronbach's alpha reliability coefficients of the whole scale and the four extracted factors were satisfactory. The retest coefficient (two weeks apart) is 0.58 and there

is a significant correlation between this scale with Rosenberg's self-esteem scale and general self-efficacy beliefs as a divergent validity coefficient. This scale also correlates with the self-criticism scale as a convergent validity coefficient. (33).

### Perceived Stress Scale (PSS)

Perceived Stress Scale was constructed by Cohen, Kamarck and Mermelstein (34) and has 14 items that are used to measure the amount of stress that a person has experienced during the previous month. In this test, a 5-option scale is used which consists of: never, almost never, sometimes, fairly often, and very often. The subjects get a score between 0 and 4 based on the option they choose. Questions 4, 5, 6, 7, 9, 10, 13 are graded in reverse (never = 4, almost never = 3, to sometimes = 2, fairly often = 1, and very often = zero) and the total is calculated by summing the scores of other questions of the scale with the scores of these questions. The reliability of this test is reported to be between 0.84 and 0.86 using the internal consistency method through Cronbach's alpha. Generally, the validity criteria of this scale were not affected by gender and age, and it has good validity (34). This scale was presented by Ghorbani et al. (35) in cross-cultural research of standardization and they showcased that the Cronbach's alpha was equal to 0.81 in Iranian subjects and 0.86 in American subjects.

### Bagaroozi's Marital Intimacy Questionnaire

This questionnaire consists of 40 questions and its purpose is to evaluate the eight dimensions of marital intimacy (emotional, psychological, intellectual, sexual, physical, spiritual, aesthetic, and social-recreational intimacy). The scoring of the questions is also between 1 (there is no need at all) and 10 (there is a great need). (36). Therefore, the range of scores are between 40 and 400. In Iran, Etemadi (37) reported the total reliability of this questionnaire as 0.94 and concurrent validity as 0.58. In the study of Khamse and Hosseinian (38), in determining the reliability of the questionnaire by using the test-retest method, the Cronbach's alpha coefficient was found to be 0.89 for emotional intimacy, 0.83 for psychological intimacy, 0.81 for intellectual intimacy, 0.91 for sexual intimacy, 0.81 for social-recreational intimacy, 0.76 for aesthetic intimacy, 0.80 for physical intimacy, 0.65 for spiritual

**Table 1.** Treatment protocol Emotion-Focused Therapy (21).

Treatment stage	Treatment content
First session	Conducting the pre-test, getting to know and establishing a therapeutic relationship, getting to know the general rules of treatment, evaluating the nature of the problem and relationship, and evaluating the patients' goals and expectations from the treatment.
Second session	Recognizing the negative interactive cycle and creating conditions where the patients reveal their negative interactive cycle. Evaluation of the patients' relationship and bond of attachment, familiarization of the patients with the principles of emotion-focused therapy and the role of emotions in interpersonal interactions, reconstruction of interactions, and increasing the patients' flexibility.
Third session	Reshaping the problem in terms of underlying feelings and attachment needs, emphasizing the patients' ability to express emotions and show attachment behaviors to the patients, informing the patients about the effect of their fear and defense structures on cognitive and emotional processes, and describing the receiving cycle and the context of attachment.
Fourth session	Giving encouragement to identify rejected needs and aspects of self that have been denied. Attracting the patients' attention to the way of interacting with one another and reflecting their interaction patterns with respect and empathy, expressing attachment needs and identifying denied needs, and increasing acceptance.
Fifth session	Informing the patients about the underlying emotions and revealing the position of each person in the relationship, emphasizing on accepting experiences, patients and new ways of interaction, tracing known emotions, highlighting and re-explaining attachment needs and pointing to the fact that they are healthy and natural.
Sixth session	Facilitating the expression of needs and desires, creating emotional conflicts, developing the initial emotional experience in the field of attachment, recognizing internal needs and relationships, and creating new attachments with a secure bond between the patients.
Seventh session	Creating new interactive situations between the patients and ending the old interactive patterns, clarifying the interactive pattern, and giving a reminder of attachment needs.
Eighth session	Strengthening the changes made during the treatment, highlighting the differences between current interactions and old interactions, forming a relationship based on a safe bond in such a way that discussing problems and searching for solutions does not harm them, evaluating changes, and conducting a post-test.

intimacy, and 0.82 for the whole questionnaire.

**Emotion-Focused Therapy**

Shows in Table 1.

**Results**

In the present study, 37 people participated which were divided into two groups (the experimental and control groups), with each group containing 17 people. The sociological results showed that 64% of the experimental group had primary infertility and 36% had secondary infertility. It also showed that 76% of the control group had primary infertility and 24% had secondary infertility. In terms of economic status, the results showed that 41% of the experimental group had poor, 47% had average and 12% had good income. In the control group, 23% had

poor, 59% had average and 18% had good income. In the following (Table 2) the descriptive statistics of the investigated variables are reported. As can be seen in Table 2, the mean and standard deviation of each variable have been checked. In the following, one-way covariance analysis was used to check the obtained inferential results. In this context, the Kolmogorov-Smirnov test was used to check the normal distribution, which was normal ( $P > 0.05$ ).

The Box's test was used to check the equality of covariance of the dependent variable, and its non-significance ( $P > 0.05$ ), which indicated the convergence of variance-covariance matrices. The Levine's test was used to check the homogeneity of regression of dependent variables, which confirmed this assumption ( $P > 0.05$ ). In addition, the results of Wilks' lambda for each of the desired variables showed that after adjusting the pre-test, there is a

statistically significant difference between the experimental and control groups in terms of dependent variables. Meaning that, at least in terms of one of the dependent variables, a difference can be found between the two groups. Correspondingly, the obtained results are reported in Table 3.

The results of one-way covariance analysis via the

use of Bonferroni's corrected alpha indicate the fact that after adjusting the pre-test between the experimental and control groups, in terms of the post-test scores of infertility stigma ( $P < 0.001$ , Eta coefficient=0.42 and  $F=22.46$ ), marital intimacy ( $P < 0.001$ , Eta coefficient=0.78 and  $F=114.01$ ), negative perceived stress ( $P < 0.001$ , Eta

**Table 2.** Mean and standard deviation of marital intimacy, infertility stigma and perceived stress in the experimental and control groups in the pre-test, post-test and follow-up stages.

Research variables	Group	Pre-test		Post-test		Follow-up			
		M	SD	M	SD	M	SD		
Marital intimacy	Emotional intimacy	Experimental	21.11	6.59	28.58	4.73	25.29	3.91	
		Control	20.23	5.19	20.47	5.20	20.00	4.91	
	Psychological intimacy	Experimental	23.00	6.79	25.17	5.34	24.11	3.35	
		Control	22.82	5.93	22/94	5.73	21.76	6.35	
	Intellectual intimacy	Experimental	23.46	5.20	30.00	4.60	28.41	4.93	
		Control	22.35	4.07	23/58	3.72	23.70	3.63	
	Sexual intimacy	Experimental	19/46	6.06	26.17	3.35	23.17	3.18	
		Control	19.05	4.93	19.94	4.52	21.05	4.23	
	Spiritual intimacy	Experimental	16.64	4.48	25.58	4.93	23.47	4.25	
		Control	18.23	4.99	21.00	4.80	21.76	5.97	
	Physical intimacy	Experimental	17.29	6.46	24.47	4.12	22.64	3.6	
		Control	18.05	5.21	18.88	5.8	20.88	6.6	
Aesthetic intimacy	Experimental	19.70	6.51	25.70	6.29	24.88	6.21		
	Control	17.47	4.58	19.64	4.71	20.35	5.52		
Social-recreational intimacy	Experimental	17.47	5.56	24.29	5.92	23.94	5.52		
	Control	16.29	4.44	18.64	5.47	20.35	5.12		
Marital intimacy (total)	Experimental	158.64	26.59	210.00	23.50	195.94	2.45		
	Control	154.52	16.18	165.11	17.58	169.88	17.84		
Infertility Stigma	Feeling worthless	Experimental	30.05	6.88	18.41	4.44	18.58	4.51	
		Control	29.70	7.04	23.35	7.35	26.76	6.77	
	Social withdrawal	Experimental	29.71	5.26	19.29	5.32	18.94	4.34	
		Control	28.35	5.35	26.29	5.28	26.41	4.62	
	Public stigma	Experimental	11.70	3.17	8.70	2.14	8.11	2.44	
		Control	12.00	2.95	11.70	2.99	12.76	5.78	
	Family stigma	Experimental	11.17	3.59	7.47	2.00	10.23	2.13	
		Control	11.29	3.73	11.11	3.53	11.29	3.9	
	Infertility stigma	Experimental	82.64	17.8	53.88	10.29	53.88	10.29	
		Control	81.35	16.48	76.47	16.65	65.94	19.26	
	Perceived stress	Negative stress	Experimental	13.82	3.38	10.70	3.17	10.00	3.14
			Control	15.17	4.64	15.47	3.69	14.64	2.49
Positive stress		Experimental	16.70	3.60	19.23	2.84	20.29	2.66	
		Control	16.11	2.71	16.17	2.62	15.64	2.59	

coefficient=0.50 and  $F=30.78$ ) and positive perceived stress ( $P<0.001$ , Eta coefficient=0.29 and  $F=12.44$ ), there is a statistically significant difference.

Based on the obtained partial Eta-squared, 49% of post-test changes in infertility stigma scores, 78% in marital intimacy, 50% in negative perceived stress and 29% in positive perceived stress scores are due to the therapeutic intervention.

**Table 3.** Results of one-way covariance analysis in MANCOVA's text on the post-test scores of infertility stigma, marital intimacy and perceived stress.

Variable	Source	Sum of squares	Degrees of freedom	Mean of squares	F	Significance level	Eta coefficient	Power
Infertility Stigma	Group	4379.22	1	4379.22	22.46	0.001	0.42	1
	Error	849.5	29	29.29	--	--	--	--
Marital intimacy	Group	14578.01	1	14578.01	114.01	0.001	0.78	1
	Error	946.38	29	32.63	--	--	--	--
Negative stress	Group	127.92	1	127.92	30.78	0.001	0.50	1
	Error	98.67	29	3.40	--	--	--	--
Positive stress	Group	70.33	1	70.33	12.44	0.001	0.29	1
	Error	33.64	29	1.13	--	--	--	--

there is a statistically significant difference.

Based on the obtained partial Eta-squared, 14% of the follow-up changes in infertility stigma scores, 42% in marital intimacy, 52% in negative perceived stress, and 44% in positive perceived stress were due to the therapeutic intervention. The obtained results show the stability of the therapeutic accomplishments two months after the end of the treatment sessions.

**Table 4.** Results of one-way covariance analysis in MANCOVA's text on the post-test scores of infertility stigma, marital intimacy and perceived stress.

Variable	Source	Sum of squares	Degrees of freedom	Mean of squares	F	Significance level	Eta coefficient	Power
Infertility Stigma	Group	1271.05	1	1271.05	5.27	0.001	0.14	1
	Error	379.9	29	13.1	--	--	--	--
Marital intimacy	Group	4697.47	1	4697.47	22.96	0.001	0.42	1
	Error	1027.41	29	35.42	--	--	--	--
Negative stress	Group	167.96	1	167.96	32.97	0.001	0.52	1
	Error	144.24	29	4.97	--	--	--	--
Positive stress	Group	145.81	1	145.81	23.96	0.001	0.44	1
	Error	56.31	29	1.94	--	--	--	--

Hence, the null hypothesis is rejected and the research hypotheses are confirmed. The follow-up test is discussed in table 4.

The results of one-way covariance analysis (obtained through the use of Bonferroni's corrected alpha) indicate the fact that after adjusting the pre-test between the experimental and control groups, in terms of infertility stigma's follow-up scores ( $P<0.001$ , Eta coefficient=0.14 and  $F=5.27$ ) and marital intimacy ( $P<0.001$ , Eta coefficient=0.42 and  $F=22.96$ ) and negative perceived stress ( $P<0.001$ , Eta coefficient=0.52 and  $F=32.57$ ) and positive perceived stress ( $P<0.001$ , Eta coefficient=0.44 and  $F=23.96$ ),

## Discussion

The objective of this study was to examine the effectiveness of emotion-focused therapy on infertility stigma, marital intimacy, and perceived stress of infertile women referring to medical centers in Tehran. One outcome that was obtained was that emotion-focused therapy yielded a significant decrease in the stigmatization of infertility among infertile women, both in the post-test and follow-up stages. Consequently, the findings of this study align with the research conducted by, Rostami *et al.* (24) and Stynes

et al. (29).

To explain this finding, it can be said that the stigma of infertility in women can evoke negative emotions such as feelings of inadequacy, worthlessness, shame and fear. These negative emotions can cause psychological distress. The psychological distress resulting from infertility causes infertile women to employ fewer positive emotions and a greater number of negative emotional strategies to overcome problems, thereby diminishing the quality of their marital relationships. Emotion-focused therapy with an emphasis on emotion tries to make infertile women have a lot of emphasis on negative emotions associated with infertility, due to their unpleasant experience of infertility. Moreover, these emotions hinder their capacity to experience positive and healthy emotions once more. In other words, infertile individuals are confronting one of the most important crises in their lifetimes, which creates psychological issues and profoundly stressful encounters. Furthermore, when confronted with the stigma of infertility, they are incapable of experiencing positive emotions or identifying positive aspects related to their predicament. They cannot master their emotions and feelings, and are unable to exert control over them. In such taxing situations, people may blame themselves or others, perceive the situation as catastrophic, and drown in their own thoughts, which ultimately damages their mental health. However, emotion-focused therapy facilitates emotional regulation, and the ability to regulate these emotions diminishes the likelihood of experiencing the stigma associated with infertility.

In this context, emotion-focused therapy assumes a crucial role in the emotional well-being of women experiencing stress related to childbearing by attributing significance to emotional perceptions. In general, emotion is like an internal compass that orients our world and equips us with important information about the significance of events that pertain to the individual.

Emotions inform us about our wants and needs, and practical decision-making would be nearly impossible without their influence. For instance, anger serves as a source of energy for fighting and defending oneself against potential harm. Notably, emotion-focused therapy places considerable

emphasis on communication and building relationships.

Establishing and maintaining a collaborative alliance in which both partners feel understood, empathized, heard and not blamed is an essential element that is emphasized in this treatment. By focusing on enhancing marital satisfaction, these factors collectively contribute to alleviating the negative emotional burdens associated with infertility, thereby fostering improved communication among infertile couples. When couples can control their negative emotions and direct their attention towards their positive emotions, they enhance their sense of worth and reduce the impact of societal stigmas that may be imposed upon them. Additionally, the findings of this study showed that the implementation of emotion-focused therapy improved the marital intimacy among infertile women, both in the post-test and follow-up stages. To explain this finding, the theoretical foundation of emotion-focused therapy can be used. Since this therapy emphasizes the emotional infrastructure in relationships, especially in troubled couples, it can be considered that in troubled couples, an event that attracts negative emotions causes the couple's interactions to become dry and limited. Consequently, these factors prevent the couple from engaging in healthy emotions (37).

In cases where infertile couples experience both social stress and marital conflicts, it is recommended to intensify the frequency of therapy sessions. Emotion-focused therapy makes couples more responsive, available, and emotional toward each other. These factors pay attention to the inner needs of couples for communication, support and security. Ultimately, this leads to a significant enhancement in marital intimacy for these couples. On the other hand, it can be assumed that emotion-focused therapy effectively identifies negative cycles of interaction as they arise within the same session and elucidates how these cycles perpetuate attachment insecurities. The emotion-focused therapist observes the cyclical nature of attachment dynamics and sheds light on and mirrors behaviors exhibited by infertile women, such as getting angry, nagging, protesting, and feeling despair and getting distant. Thus, by solving these conflicts, the necessary ground for increasing marital intimacy is provided.

Furthermore, it is worthwhile to examine the impact of emotion-focused therapy on women's attachment patterns. As individuals undergoing this therapy become more confident and secure in their attachment bond with one of their life partners, they are less likely to be triggered by their limbic response. The security of one side of their life allows for greater flexibility and adaptability in the midst of difficult emotions or disorienting situations, which leads to greater emotional regulation (39). Enhanced emotional regulation, in turn, fosters increased marital intimacy. The EFT model tries to increase solidarity and safe attachment between couples by guiding them through the stages of de-stressing, re-engaging, softening and strengthening.

Ultimately, the results demonstrated that emotion-focused therapy caused the perceived stress of infertile women to change significantly following the intervention, both in the post-test and the follow-up stages. This result aligns with the findings of Yavari Kermani *et al.* (25), Naderian *et al.* (27) and Jamshad *et al.* (28).

To explain this finding, it can be said that each of these emotions has an inherent neurological basis and a social function that help us survive and influence others. Emotions act as a rich source of meaning and provide us with solid and strong feedbacks regarding how our environment impacts us. This feedback adjusts our responses and organizes our behaviors. Hence, the primary focus in emotion-focused therapy lies in the recognition of emotions and the rehabilitation of emotional functions. Infertile women, who face significant difficulties in controlling their negative emotions, or in other words, experience high levels of perceived stress, endeavor to realistically examine their emotions and acquire the ability to manage their negative stress by embracing the role of emotions in their life functions. On the other hand, the emotion-focused theory perceives emotions as rational and logical. Therefore, infertile women strive to differentiate between positive and negative stress and accept the presence of stress that fosters personal growth and excellence, ultimately enhancing their quality of life. It is also possible to look at this issue from a physiological point of view.

Stress response, both psychological and physical, can

be defined as an attempt to restore homeostasis after a disruptive environmental stimulus. While the short-term neuroendocrine response to stress provides adaptive advantages, chronic and repeated activation leads to physiological "wear and tear" across the body, including the brain. Thus, by effectively managing the body's cortisol response, emotion-focused therapy promotes relaxation and reduces human stress. Halchuk (40) suggested that couples' baseline salivary cortisol levels significantly decreased after taking four measurements throughout the day, both before and after performing a stressful task, and after completing the EFT counseling process. In addition, this study also showed that the EFT process, by increasing the amount of white matter in the anterior cingulate cortex (which is the area of the brain that connects the limbic system to the frontal cortex), caused structural changes in emotional circuits. The anterior cingulate cortex connects areas of the brain that detect and evaluate threat. Every study has its limitations. The lack of examination of marital satisfaction in couples and the impact of infertile men in this study, and the impossibility of controlling all influential variables (such as economic status, family problems, mental health), are among some of the limitations of the present study, which can potentially make the generalization of the current study's results difficult.

Accordingly, we recommend that this treatment also be investigated in men who have a history of infertility, or be done only in women who have primary infertility. This is due to the potential psychological differences between women with primary infertility and those with secondary infertility. We recommend that disturbing variables such as economic issues, family support, and mental health should be controlled for a more detailed investigation and its results should be examined in future studies. Finally, we propose that the physiological indicators related to stress be considered in future studies for a more detailed investigation. Based on the obtained results, it is also suggested that this treatment be used significantly in the gynecology department, fertility and infertility clinics. We also recommend that wide public awareness be given in the society to reduce the stigma of infertility, and that infertile women, who are unable to continue treatment after some time, be given a lot of attention from an economic point of view.

## Conclusion

Social support plays an important and essential role in promoting adherence to infertility treatment. Hence, it is advisable to form groups specifically for infertile women and to take a step towards social support for these people by emphasizing the enhancement of positive emotions and the regulation of negative emotions.

Lastly, infertile men should also be specifically investigated. Given that men do not express their emotions the same as women, it is crucial to take significant steps for this group of society as well.

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## Conflict of Interest

The authors declare that they have no conflict of interest.

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