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The Effectiveness of Positive Psychotherapy on Mental Endurance, Self-Compassion and Resilience of Infertile Women

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ABSTRACT

Background: Infertility creates many psychological problems for infertile women. This study aimed to evaluate the effectiveness of positive psychotherapy on mental endurance, self-compassion and resilience of infertile women.

Methods: This study was a randomized controlled clinical trial. The statistical population of the present study included infertile women in Tehran in 2017 who visited the infertility centers of Hope and doctor Shariati. In this study among the infertile women who referred to infertility center of Tehran, 30 women were selected and placed randomly in the test group and the control group. The test group received the intervention in two and a half months at ten sessions of 90 minutes. However, the control group did not receive this intervention during the research process. The questionnaire used in this study included Psychological distress tolerance questionnaire. Resilience Scale and self-compassion questionnaire. The data were analyzed through analysis of covariance using statistical software $SPSS_{24}$.

Results: The results of the analysis showed that positive psychotherapy has been effective on mental endurance, self-compassion and resilience of infertile women (P-value < 0.001). Therefore, it has been able to improve mental endurance, self-compassion and resilience of infertile women .

Conclusion: Based on the findings of this study, it can be concluded that positive psychotherapy can be used as an effective treatment for mental endurance, self-compassion and resilience of infertile women.

Keywords: Mental Endurance, Self-Compassion, Resilience, Infertility, Positive

Introduction

One of the main motivators of the life of a family is having baby. However, some women are due to infertility and cannot have a child. This process affects the structure of the psychological and personality disorders and causes emotional and psychological problems for them. Infertility is considered a crisis ,and a great loss and stress is one of the great factors affecting life and causes temporary or chronic distress in couples.[1] Among many families, infertility is a big problem and as one of the most important crises of life, causes stressful experiences and serious mental problems.[2] The intensity of the stress of infertility is so serious that if we compare it to other stressful life events such as, the death of mother, father and wife, infertility is placed fourth and this shows the psychological pressure that it can cause.[3] In 2015, the World Health Organization considered infertility as a public health problem throughout the world and has stated that one in four couples, is infertile in developing countries.[4, 5] According to Kazemijaliseh et al.' studies (2015) the prevalence of infertility in Iran in 2015, was 17.3 percent.[6]

According to the researches, a wide range of psychological disorders such as increased levels of stress, anxiety, depression, loss of self-esteem, resilience, irritability, decreased mental endurance, self-humiliation, feeling inefficient, sexual dysfunction, sexual problems, and marital conflict are associated with infertility.[7-11] Accordingly, infertility decreases mental endurance in women. Reduce in the mental endurance is affection dependent on the position that occur when people due to tensions caused by illness, feel invalid. Moreover it is considered an adaptive response to environmental factors (external) that has many the physical, behavioral, cognitive and psychological consequences for the person.[12]

Furthermore, according to the studies, infertile people, including infertile women, face various psychological problems such as reducing resilience in them. Resilience is defined as maintaining competence in threatening and stressful conditions and recovery after a psychological loss andimprovement despite the existence of high risk. A person's resilient is determined through dealing with problems, risks and individual protective factors.[13, 14] A large numbers of studies suggest that resilience is a critical mediator in the development of most mental disorders and is considered an essential factor in some groups at risk.[15] Resiliency is one of the factors that keeps individuals safe against cognitive disorders and difficulties and helps in dealing and coping with difficult and stressful life situations.[16]

Also, it should be reminded that infertility causes low self-compassion in infertile women.[4] By definition, self-compassion is a loving and receptive stance towards the negative aspects of oneself and their lives with three main components. The firstis self-kindness, the second component is self-understanding against difficulties, and the third component is self-understanding against insufficiencies. The concept of self- compassion, also covers common humanity and states that suffering and defeat, are the inevitable dimension of shared experiences of most people and finally, self-compassion is a balanced awareness about one's feelings, the ability to face (instead of avoiding) painful thoughts and feelings, without exaggeration, drama or pathos.[17, 18] Self-compassion as a negative predictor of depression, anxiety, stress which can reduce psychological damage.[19, 20]

To improve the psychological components of infertile women psychological and therapeutic methods have been used. Positive Psychotherapy is a new therapy that its clinical efficacy in various researches has been confirmed. As the findings of studies such as Flink et al (2015), Proyer et al. (2016), Shoshani et al. (2016), Uliaszek et al. (2016) showed, psychotherapy can improve positive psychological components in different people.[21-24] Positive psychotherapy literature review has shown that this approach for a range of different people and situations has clinical effectiveness.[25, 26] Regardingthe theoretical foundations of positive psychology, we can say

that this treatment is derived from the scientific study of optimal human functioning and with a better understanding of the functions and using them we can work for the prosperity of communities.[27]

This study is necessary because infertile women undergo much psychological pressure which damages psychological, relational, familial, and social componentsso, due to the psychological stresses, pregnancy is postponed to a greater extent. As various studies have shown infertility causes agitation, depression, despair, frustration, anxiety, and feelings of worthlessness.[28] In addition, marital compatibility is also challenged and ultimately can lead to divorce.[29] For this reason, the necessity of the use of psychological interventions for improving mental component is fully evident.

Due to psychological damage to infertile women,[8-11, 30] the necessity of the use of effective treatment for these people, and also according to effectiveness of positive psychotherapy in reducing psychological damage to people and the lack of research on the effectiveness of positive Psychotherapy on mental endurance,[23, 24, 31, 32] self-compassion and resilience of infertile women, the researchers decided to study the effect of this treatment on mental endurance, self-compassion and resilience of infertile women. As a result, this research aimed to investigate whether positive psychotherapy can affect mental endurance, self-compassion, and resilience of infertile women.

Methods

The method of this study was a randomized controlled clinical trial. Independent variable was positive psychotherapy and dependent variables were mental endurance, self-compassion, and resilience of infertile women respectively. The statistical population of the present study included infertile women in Tehran in 2017 that referred to the infertile Centers of Omid and Dr. Shariati. In this research, non-inferential and random sampling method was used. 30 Women who were willing to participate in the research from both centers were chosen and placed randomly in the test group and the control group (15 patients in the test group and 15 in the control group). This placement was done by lottery. The use of 15 samples for each test and control groups, was based on standard scientific resources as Biabangard (2010) stated that in randomized clinical trial research, 15 participants in each group would suffice. Inclusion criteria included the diagnosis of infertility by a gynecologist, the absence of another acute or chronic disease, having at least a middle school education, and consenting to participate in the study. Exclusion criteria included a history of psychiatric, medications, receiving psychological treatment at the same time, being absence for more than two sessions, and not doing the homework assigned in therapy sessions. The test group (positive psychotherapy) received interventions within three months at ten 90-minute session. This is while people in the control group did not receive this intervention during the research process. It should be noted that the consent of participants was taken in all stages of intervention and they were informed. The control group was also assured that they will receive these interventions after the completion of the research process.

Psychological Distress Tolerance Scale

15 item psychological endurance scales is a self-evaluative questionnaire by Simons and Gaher prepared in 2005. Statements of this scale, evaluate psychological distress endurance based on the ability of a person to endure emotional distress, mental distress evaluation, attention to processing emotions and negative psychological processesin case of an incident adjustment actions to tolerate psychological distress. Statements of this scale are scored on the basis of a five-point Likert scale (I totally agree: score 1 to totally disagree : score 5). Therange of scores is between 15 and 75. High scores on this scale indicate that psychological distress tolerance is high. Cronbach's alpha coefficients for this questionnaire by Simons and Gaher was estimated 0.82.[33] Gale Girian (2013)

Navidian and Bahari (2008) also reported Cronbach's alpha of the questionnaire 0.67 and retested reliability, 0.79.[34], [35] In this study, alpha coefficients obtained for the questionnaire was 0.82.

Psychological Resilience Scale

Resilience scale was designed by Connor-Davidson in 2003, to assess the resilience of people. The scale has 25 items in which the subjects determined their answer on a 4-point Likert scale from completely false (zero) to always right.[4] The total score on this test is from 0 to 100. Higher scores on this scale indicate resilience in the subject. Connor and Diodeson reported the internal scale stability resiliency using Cronbach's alpha reliability to be 0.89 and retest reliability, 0.87.[36] Mohammadi (2005), estimated the reliability of the Conner and Davison scale 0.89, using Cronbach's alpha, and also its validity was satisfactory.[37] The reliability of the questionnaire in this study using Cronbach's alpha was calculated 0.88.

Self-Compassion Questionnaire

Self-compassion questionnaire is provided by Raes et al. (2011).[9] This scale includes 12 items to evaluate the three components of self-kindness (2 items) versus self-judgment (2 items), common humanity (2 items) versus isolation (2 items) and mindfulness (2 items) versus extreme simulation (2 items). Items are based on a 5 point Likert scale from almost never = 1 to almost always = 5, and higher score shows higher self-compassion. Meanwhile, items 1, 4, 8, 9, 11 and 12 are reversely scored.[38] In Shahbazi et al.' study (2015), coefficient Alpha for overall score Scale was 0.91.[38] Moreover, Coefficients Alpha Cronbach for subscales of self- kindness, self-judgment, common human experiences, isolation, mindfulness, and excessive simulation are respectively, 0.83, 0.87, 0.91, 0.88, 0.92 and 0.77. The concurrent and converging validity of the questionnaire has been reported to be desirable.

Results

After coordination with Omid and Shariati infertility center and giving explanations to the participants in the study, those in test groups, received positive psychotherapy interventions during ten session of 90-minutes over three months in groups of 5, while the control group did not have any interventions during the implementation process.

In this study, descriptive and inferential statistics were used to analyze data. In descriptive statistics, the mean and standard deviation and the covariance analysis test (to control pre-test scores) were used for inferential statistics. Statistical analysis was done using $SPSS_{24}$.

Findings from demographic data showed that study subjects were between the age ranges of 26 to 44. The age range in the test group was 31 to 34 (29%), and the age range in the control group was 28 to 31 years (33%). On the other hand, in both groups, most of the women were housewives 68% and 59%. Moreover, participants' degrees were from middle school to the bachelor degree in the test group 36%, and in the control group, the associate degree had the highest frequency 40%. Results indicate that between test and control groups there was no significant difference in demographic variables (P-value > 0.05).

Before presenting the results of analysis of covariance test, the assumptions of parametric tests were measured. Accordingly, Shapiro-Wilk test results showed that the assumption of the normal distribution of sample data is established (P-value > 0.05). Besides, the assumptions of homogeneity of variances were examined by Levine test, and the results showed that there was homogeneity of variances in variables of mental endurance, self-compassion, and resilience (P-value > 0.05). The results of the inferential table are discussed below.

Teaching independent variable (positive psychotherapy) could lead to meaningful difference in average scores of Dependent Variables (mental endurance, self-compassion and Resilience in infertile women) in post test with 0.05 errors (Table 3). The conclusion is that with controlling intervening variables, the average scores of the variables of mental endurance, self-compassion and

resilience in infertile women has changed due to positive psychotherapy. In accordance with the descriptive findings, the impact of this form of psychotherapy was that it could significantly improve mental endurance, self-compassion, and resilience in infertile women. The amount of the impact of positive psychotherapy on mental endurance, self-compassion and resilience in infertile women, was respectively 0.52, 0.65 and 0.64. That means respectively 52, 65 and 64 Percentage changes of variables mental endurance, self-compassion, and resilience in infertile women by membership in group (positive psychotherapy). The average scores of adjusted variables scores of mental endurance, self-compassion, and resilience in infertile women in the training group is more than the control group (Table 4).

This study has limitations such as the limited scope of the infertile women in Tehran, lack of methods for random sampling and lack of follow up, so, for better generalization of the results at research level, other studies should be carried out in other cities and areas with different cultures on other women with follow up and random sampling to increase generalizations.

Table 1. Interventions for positive psychotherapy intervention training[39]

Number of sessions	Therapeutic content in each positive intervention session
First session	Introducing the members of the group and primary familiarization, reviewing the group's rules, the structure and objectives of the meetings, providing a perspective of the plans for future meetings.
Second session	Giving Clients a framework based on positive psychotherapy, asking the client to write positive stories to introduce themselves, and then assigning homework.
Third session	A summary of the previous session and receiving feedback, reviewing the positive story of self-introduction, and identifying and discussing potentials inside the story, asking the clients to design. A specific plan to work on capabilities, and then assigning homework.
Fourth session	A summary of the previous session and receiving feedback, focusing on forgiveness as a tool to eliminate negative emotions, and then assigning homework.
Fifth session	A summary of the previous session and receiving feedback , focusing on gratefulness and introducing its psychological, physical, interpersonal benefits and especially the increase in life satisfaction, and then assigning homework.
Sixth session	A summary of the previous session and receiving feedback, training clients to accept instead of idealism, engaging the client in a task to increase life satisfaction, assigning homework.
Seventh session	A summary of the previous session and receiving feedback, focusing on the theme of hope and optimism, teaching the concept of to clients, providing internal, person, overall, and stable to clients to increase their optimism and hope, and then providing homework.
Eighth session	A summary of the previous session and receiving feedback, focusing on love and attachment, advise clients to communicate and bond with others, providing homework
Ninth session	A summary of the previous session and receiving feedback, to familiarize clients with a sense of taste, teaching clients to participate in enjoyable activities, and then providing homework.
Tenth session	Checking homework, getting feedback from members, reviewing the progress made and achievements obtained summary and conclusions, discussing the findings and implications of generalizations and practicality in real life, and then carrying out the test.

Table 2. Descriptive Statistics results of mental endurance, self-compassion Psychological and resilience in infertile Women

Groups	Variables	Pre-test		Normality	Post-test		Normality
		Mean	SD	P-value	Mean	SD	P-value
Test Group	mental endurance	34.93	9.09	0.16	46.86	7.87	0.17
	self compassion	29.40	4.33	0.23	37.06	5.24	0.36
	Resiliency	44.80	6.88	0.17	54.66	7.54	0.09
Control Group	mental endurance	28.93	5.53	0.01	30.26	6.66	0.17
	self compassion	29.53	4.23	0.29	28.40	4.61	0.001
	Resiliency	44.80	5.18	0.55	46.26	5.02	0.22

Table 3. Results of covariance analysis of positive Psychotherapy effect on mental endurance, self-compassion and resilience in infertile women

Variables	Statistics of Variables	Total Squares	Degree of Release	The Stigma of These Squares	F	Level Of Significant	Degree of Effect	Power of Test
Mental Endurance	Pretest	1.29	1	1.29	0.03	0.86	0.001	0.06
	Joining The Group	1190.6	2	593.3	28.53	0.0001	0.52	1
	Error	1126.5	27	41.72				
Self Compassion	Pre Test	3.83	1	3.83	0.35	0.55	0.01	0.09
	Joining Group	564.80	2	564.80	51.74	0.0001	0.65	1
	Error	294.69	27	10.91				
Resiliency	Pre Test	54.53	1	54.53	5.11	0.03	0.16	0.58
	Joining Group	529.20	2	592.20	49.66	0.0001	0.64	1
	Error	287.73	27	10.65				

Table 4. Adjusted Average of dependent variables in the posttest

Variables	Groups	Mean	Standard Error
Mental Endurance	Test Group	43.98	1.73
	Control Group	30.35	1.73
Self Compassion	Test Group	37.07	0.85
	Control Group	28.93	0.85
Resiliency	Test Group	54.66	0.84
	Control Group	46.26	0.84

Discussion

The current study evaluated the effectiveness of positive psychotherapy on mental endurance, self-compassion, and resilience in infertile women. The findings of the data analysis indicate that positive psychotherapy improves mental endurance, self-compassion and resilience in infertile women. The first finding on the effectiveness of positive psychotherapy was about mental endurance of infertile women which was consistent with, Flink et al. (2015) study that showed, positive psychotherapy improves pain threshold and mental endurance of infertile women.[21] In order to explain the present findings according to Senf and Liau (2013), it can be said that positive interventions by increasing positive thoughts,[40] emotions and behaviors and satisfying basic needs like love, self-autonomy, attachment, and relationship increases happiness and psychological wellbeing and reduces depression. Therefore, positive psychotherapy by increasing professional self-care or inner richness prevents burnout in infertile

women. This process helps infertile women improve mental endurance through exciting and positive thoughts from positive psychotherapy. The strengthening of happiness through attention to the problems and prosperity in all valuable areas life through positive intervention. It should be reminded that psychological intervention, self-care is equivalent to the inner richness and being more alert, focused, and having peace, comfort, compassion and readiness to deal with problems or barriers to prevent their happening again. Accordingly, infertile women by taking advantage of deep relaxation therapy and adaptive preparedness to deal with problems can show more mental endurance.

The first finding on the effectiveness of positive psychotherapy was about self-compassion in infertile women which was consistent with Uliaszek et al.'s studies (2016).[22] These researchers reported in their findings that positive psychotherapy causes optimism in person, and this process will lead him to be more kind to himself and others. It can be stated that positive psychotherapy can reduce clinical signs such as depression, rumination, and anxiety, leading to improved mental health and more self-care behaviors in infertile women. Due to positive psychotherapy, principles such as the acceptance and interest in one's body, the habits of happiness, humorism, ruminations principle, the principle of individual rationality, paying attention to one's positive points, failures, going beyond scheme and behaviors coming from family, healthy hobbies and some other principles help the infertile women change their attitude, emotion, and happiness and have more self care behaviors . In this way, it can be hoped that positive psychotherapy leads to more self-compassion.

The third finding on the effectiveness of positive psychotherapy was about resilience in infertile women which was in consistent with Shoshani et al. (2016) and Proyer et al. (2016) studies.[23, 24] These researchers reported that positive psychotherapy by increasing coping strength can improve psychological well-being and happiness. In order to explain the present findings, it should be noted that positive psychotherapy through the establishment and expansion of positive emotions shield against mental problems and hence increases the psychological well-being and happiness in people. This approach creates meaning in the lives of people, reduces mental problems and increases happiness and adaptive coping strength.[39] Positive psychotherapy with an emphasis on the experience of positive emotion, often by offering better ability in using capabilities and adaptability in coping with life's problems and challenges of family environment, improves adaptability, strength to cope with problems and resilience in infertile women. The use of interventions in positive psychotherapy increases individual and family psychological components, and by increasing positive emotions, positive challenges and meaning of life increase too.

Conclusion

The results indicate a significant impact of positive psychotherapy on mental endurance, self-compassion and resilience in infertile women. According to the findings of this study at the functional level, it is recommended that health centers for infertile women besides medical treatment, improve psychological components of infertile women by positive psychotherapy.

Conflicts of Interest

In this study, was not reported any potential conflicts of interest with the authors.

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Authors' Contribution

Conceptualization, R.K.M. and S.A.; Methodology, M.H.; Formal Analysis, M.H., Investigation, S.Sh.; Data Curation, S.Sh., Writing – Original Draft, S.A. and R.K.M.; Writing – Review and Editing, M.M.H Resources, S.Sh. and R.K.M.; Supervision, R.K.M.

All authors read and approved the final manuscript and are responsible about any question related to article.

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