

The Relationship between Self-Efficacy and Psychological Distress among Infertile Women

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ARTICLE INFO	ABSTRACT
<p><i>Article type:</i> Original article</p>	<p>Background & aim: Infertility, as an important stressful factor in women's lives, leads to an increase in psychological distress. Self-efficacy is one of the determinants, which is considered one of the basic structures of mental health. This study was conducted to measure the relationship between self-efficacy and psychological distress in infertile women.</p>
<p><i>Article History:</i> Received: 14-Feb-2022 Accepted: 21-Jan-2023</p>	<p>Methods: This descriptive correlational study was done on 205 infertile women attended Milad Infertility Research Center in Mashhad, Iran, who were selected via convenience sampling. Data were collected using a demographic questionnaire, the Tara Infertility Self-Efficacy Questionnaire, and the Akios Infertility Distress Questionnaire. Infertile women who met the inclusion criteria completed the questionnaires in a self-report basis. The data was analyzed with SPSS 20 using descriptive statistics as well as Pearson and Spearman correlation coefficient tests.</p>
<p><i>Key words:</i> Self-efficacy Psychological Distress Infertility Women</p>	<p>Results: The mean score of self-efficacy was moderate (51.70 ± 12.29) and the mean score of infertility-related distress was relatively high (81.38 ± 13.14). There was a direct and significant relationship between self-efficacy and infertility-related distress ($P = 0.001$), i.e., higher self-efficacy was associated with less infertility-related distress. There was no significant relationship between either self-efficacy or infertility-related distress with women's age, education, length of marriage, duration of infertility, and duration of infertility treatment.</p> <p>Conclusion: It is recommended to incorporate self-efficacy promotion programs into the treatment process of infertile couples in order to control the adverse psychological effects of infertility such as infertility distress.</p>

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Introduction

Infertility is a serious crisis that threatens the mental health of infertile couples and has several social dimensions (1). The World Health Organization (WHO) has identified infertility as a reproductive health problem worldwide (2). The prevalence of infertility worldwide is estimated at 186 million, most of them in developing countries. According to the research conducted in Iran, the overall mean of infertility is 13.2% (3). Although infertility is a medical problem, its consequences go beyond the biophysical aspects and lead to psychological and social problems (4-5).

It has been reported that about 50% of infertile couples describe infertility as their most distressing life experience (6). Psychological factors can play a role in the results of some infertility treatments and even lead to a reduced fertility rate (7).

According to the report of Noorbala et al. (2008), due to the high level of anxiety in women who were conceived by in vitro fertilization, the infants had more problems during or even after delivery (8). In many societies, infertility is often associated with stigma and guilt (9). The prevalence of psychiatric disorders in infertile women is about

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twice as high as that in fertile women, and approximately 32% of infertile women are at risk for mental health problems. Several documented studies have shown that infertile women have more stress than their husbands (10).

Infertility stress is a set of symptoms that occur following infertility in people and is similar to many symptoms of disorders caused by post-traumatic stress. Distress is a physiological and psychological reaction (i.e., cognitive, behavioral, or coping reactions) that occurs as a result of stressors. Women's distress levels can be higher because a large proportion of infertility treatments are performed on women. (2014), referring to the studies, acknowledge that 34% of cases of cessation of treatment by infertile people are due to emotional distress (7).

Infertility also has a negative effect on sexual relations because infertile people have more stress and tension in their relationships with their spouses (5).

Farazmand et al. (2015) found that holding quality-of-life therapy training sessions can be used to reduce marital burnout and psychological distress in infertile women (11).

According to Bandura's theory, self-efficacy means the person's judging his ability to perform an action, which can enable people to adopt health-promoting behaviors and leave harmful health behaviors, as well as, self-efficacy can play a role in managing distress. (12-13).

In the study by Turner et al. (2013), among 44 infertile women treated with in vitro fertilization (IVF), the pregnancy rate was higher in women with higher self-efficacy (14). According to the theory of self-efficacy, when a person is in a potentially stressful and threatening situation that he can control himself, he sees it as less stressful, less threatening, and more predictable (6).

Self-efficacy, like some psychological structures, affects biological indicators of reproductive health. Bandura's self-efficacy theory shows that people with high self-efficacy are confident, resilient, and find solutions to problems. Self-efficacy beliefs reduce the influence of stressful situations and can act as a mediator between stressors and negative

emotions. Thus, self-efficacy is a vital feature to meeting the challenge of infertility and should be measured before and during infertility treatment (4, 15).

In recent years, special attention has been paid to the mental health of infertile couples and the relationship between self-efficacy and psychological distress in various diseases has been investigated (16). However, since limited studies on infertility have been conducted in Iran, this study was conducted to determine the relationship between self-efficacy and psychological distress in infertile women.

Materials and Methods

This descriptive-correlational study was performed on 205 infertile women referred to Milad Infertility Research Center in Mashhad, Iran. The study was approved by the ethics committee at Mashhad University of Medical Sciences (Code: IR.MSUMS.MED.REC.89099), and all participants signed a consent form before being included in the study.

Due to the lack of a similar study in this field, a pilot study was used to estimate the sample size. To calculate the sample size, the correlation between self-efficacy and infertility distress was calculated on 20 infertile women who had the characteristics of the participants ($P < 0.001$, $r = 0.650$). Then, using the correlation formula and the obtained correlation, the sample size of 205 infertile women was calculated considering the confidence degree and test power of 95% ($\alpha = 0.05$) and the confidence degree and test power of 80% ($\beta = 0.2$). Participants were selected using the convenience sampling method.

Inclusion criteria were being Iranian and Muslim, having a minimum level of literacy in reading and writing, not using drugs, not having an adopted child, not suffering from medical or mental illness, being at the first marriage, having confirmed diagnosis of infertility after one year of unprotected intercourse by a gynecologist and infertility specialist, the absence of serious events (death of first-degree relatives, accidents, burglaries) in the last six months, and intense family quarrels in the last week.

The tools used in this study included participant demographic questionnaire, The Tara Infertility Self-Efficacy Questionnaire (2006) and The Akios Infertility Distress

Questionnaire (2006). The Tara Infertility Self-Efficacy Questionnaire (2006) (9) includes 16 items in the field of a person's perception of his ability in three parts, cognitive, emotional, and behavioral skills related to the medical treatment of infertility. The range of scores varies from 16 to 90, and each phrase is scored on a 5-point Likert scale, from the not at all sure (score 1) to the absolutely sure (score 5). The higher score indicates greater self-efficacy. The Akios Infertility Distress Questionnaire (2006) (1) consists of 21 phrases. Each phrase is scored on a 5-point Likert scale from "never" (score 1) to "always" (score 5), and the range of scores varies from 21 to 105. This questionnaire has 16 positive phrases and 5 negative phrases so, the phrases 3, 10, 13, 14, and 21 had an inverse score. The higher score indicates lower infertility distress. The validity of the questionnaires was determined by the content validity method. The reliability of the questionnaires was calculated by the internal consistency method by calculating Cronbach's alpha coefficient as 0.889 for Tara's self-efficacy questionnaire and 0.884 for the infertility distress questionnaire.

After getting permission from the Milad Infertility Research and Treatment Center, the researcher referred to this center and chose the eligible participants based on the participant's selection checklist. At first, the research objectives and methods were explained to the participants in a quiet place in the waiting room, and the participants were assured that their information would be kept confidential.

If individuals expressed their willingness to collaborate, and met the inclusion criteria, the researcher explained them how to complete the questionnaires, and it was emphasized that each person has the right to have her own beliefs and there is no right or wrong answer. The participants were also asked to study the questionnaires carefully and choose only the answers that were closer to their current situation, beliefs, and attitudes. Then the questionnaire related to the demographic characteristics of the participant, self-efficacy in infertility, and infertility distress was given to the eligible infertile women. The response time of the participants was an average of 30 minutes, and considering the waiting time for

each of the treatment stages for infertile couples, there was enough time for them to fill out the questionnaires. The period of data collection lasted for 6 months.

After collecting and coding, the data were entered into the computer, and after ensuring the accuracy of the data entry, data analysis was performed using SPSS software version 20. Thus, the Kolmogorov-Smirnov test was the first to determine the normality of quantitative variables. Descriptive statistics, including measures of central tendency, dispersion (mean and standard deviation), and frequency distribution, were used to describe the characteristics of the participant. To meet the objectives of the study, the Pearson correlation test was used to investigate the relationship between self-efficacy and infertility distress if the data distribution was normal, and the Spearman correlation test was used if the data distribution was not normal. In performing the tests, a 95% confidence level and significance level of 0.05 were considered.

Results

The personal characteristics of the individuals participating in the study are shown in Table 1. Based on the results of this study, the mean age of all participants was 28.5 ± 4.8 years, with a range of 19-42 years.

Table 1. Frequency distribution of demographic characteristics of infertile women

Personal profile	N (%)
Education	
primary	16(7.7%)
Elementary	37(17.9%)
High school	88(42.5%)
Associate degree and Bachelor	57(27.5%)
Master's degree and higher	7(5.3%)
job	
Housewife	165(80.5%)
Employees	33(16.1%)
Self-employed	7(3.4%)
Infertility factor	
Female	61(29.5%)
Male	79(38.2%)
Both	29(14%)
Unknown	36(17.4%)

In terms of education, the highest frequency was related to high school, and the lowest frequency was a master's degree and higher. Also, the mean durations of marriage, infertility,

and treatment of infertility in all participants were 6.9 ± 4.1 with a range of 1-25 years, 5.1 ± 4.0 with a range of 1-19 years, and 3.2 ± 3.3 with a range of 1-17 years, respectively (Table 1).

Based on the results of this study, the mean self-efficacy score was moderate (51.7 ± 12.29) and the infertility distress score was relatively high (81.38 ± 13.14) which indicates low distress (Table 2).

Table 2. The correlation between self-efficacy and infertility distress of infertile women

variable	Mean± SD	Maximum	Lowest	Spearman correlation
Self- efficacy	51.70±12.29	90	25	r=0.680
Infertility distress	81.38± 13.14	105	37	P<0.001

The results of the Spearman and Pearson correlation coefficient showed that there is no significant relationship between age, duration of marriage, duration of infertility, duration of infertility treatment with self-efficacy, and infertility distress ($P > 0.05$).

Also, according to the results of the Spearman correlation coefficient, there was no significant relationship between either self-efficacy or infertility distress with education and job ($P > 0.05$).

Discussion

This study was performed to determine the correlational relationship between self-efficacy and psychological distress in infertile women. Based on the results of this study, a direct and significant relationship was observed between the self-efficacy of infertile women and infertility distress. Also, infertile women had moderate levels of self-efficacy and low levels of infertility distress.

The results of the studies by Farazmand et al. (2018) and Sreshthaputra et al. (2008) showed that infertile couples experienced high levels of stress (15, 17).

The difference between the results of Sreshthaputra's study and the current study can be explained by the fact that, according to the available evidence, each person may react differently to infertility and its treatments. Although having children in families is very important in Iran, considering the cultural background of different ethnic groups and the religious attitudes of individuals and trust in God and satisfaction with divine predestination, this level of infertility distress can be justified.

In line with the aim of this study, "Determining the relationship between self-efficacy and infertility distress in infertile women", the results of the Spearman correlation coefficient showed a direct and significant relationship between mean self-efficacy score and infertility distress ($P < 0.001$). This means that as the self-efficacy score increased, the infertility distress score also increased (Table 2).

Akioz (2008) acknowledges in his study that the most common responses include anger, decreased self-esteem, disrupted relationships, decreased life satisfaction, anxiety, and distress (1).

In various studies, it has been shown that during the treatment process, the emotional needs of infertile couples are sometimes neglected, while the important goal of infertility treatment is to support infertile couples' desire to have children. Therefore, it is necessary to determine the psychosocial status of infertile couples; for example, the evaluation of infertility distress, which was addressed in this study, is essential (1).

Following the determination of psychosocial status, the next step is to strengthen coping strategies such as self-efficacy by citing specific studies in this field. In the present study, infertile women had moderate self-efficacy, which is consistent with the results of the study by Faramarzi et al. (2014). The results of this study confirm that by strengthening the self-efficacy level of infertile women, the psychological burden of infertility can be reduced because self-efficacy ideas form the basis of human actions (18). As in the present study, a relatively acceptable level of self-efficacy was associated with low distress. Peyman et al. (2007) have also acknowledged that people with a low sense of self-efficacy have a one-dimensional and superficial view of the problems they face (19).

According to the study by Massoudnia (2007), people with high self-efficacy use more coping strategies (20). In the present study, people with

higher self-efficacy used a coping strategy to reduce their infertility distress.

Galhardo et al. (2013) and Alirezaei et al. (2014) also showed that the ability to deal with infertility-related problems is associated with a higher sense of self-efficacy and mental health in infertile people (21-22). In the study of Cross et al. (2006), the results showed that people with high self-efficacy and a source of internal control feel that they have control over their health and have the ability to perform behaviors that help maintain their health (12).

Infertility self-efficacy, or the perception of infertile women of their ability to use psychological skills to control the emotions associated with the diagnosis and medical treatment of infertility, can change during treatment. According to Cousinio et al. (2006), improving infertility self-efficacy increases health behaviors, improves health status, and may even increase the likelihood of pregnancy. There is a significant positive correlation between self-efficacy and health and a significant negative correlation between self-efficacy and infertility-induced distress. On the other hand, long periods of infertility stress can damage a couple's interpersonal relationships. When a couple experiences infertility stress, their lives are dominated by avoiding negative infertility-related thoughts; the avoiding strategy takes up a lot of the infertile couple's time and energy and ultimately leads to feelings of helplessness and a lack of control over their lives (23).

Chu et al. (2021) conducted a study in China entitled perceived social support and life satisfaction in infertile women under treatment: a modified model. The findings showed that higher infertility self-efficacy increases the effect of perceived social support on self-compassion. This suggests that infertile women with higher infertility self-efficacy have greater efforts to facilitate infertility coping. Given that infertile women often do not receive adequate support from conventional sources such as family, medical professionals, and online resources, counseling support appears to be necessary to ensure life satisfaction in infertile women. According to the study by Massoudnia (2007), people with high self-efficacy use more coping strategies (20). In the present study also, people

with higher self-efficacy can reduce their infertility distress as a coping strategy.

In addition, self-compassion training improves psychological well-being because autonomy promotes dominance of the environment, personal growth, positive communication with others, a purpose in life, and self-acceptance (24).

Khalid et al. (2020) in a study aimed at investigating the relationship between social support, self-efficacy, and cognitive coping with mental disorders showed that social support, self-efficacy, and active practical adaptation have a significant negative relationship with psychological distress and recommended that structured programs be edited to increase social acceptance and reduce negative attitudes toward infertility (25).

In the present study, unlike the study of Akios et al. (2008), education level was not associated with infertility distress, which could be related to the difference in education level and culture between the two research communities(1).

One of the limitations of the present study is that it only evaluated infertile women, which, according to the study of Maroufizadeh et al. (2021), is the use of a data analysis approach in which the couples as a unit is recommended. The results of his study showed that the quality of life of infertile couples is affected by the rate of reproductive self-efficacy. He also suggested that psychological interventions to improve self-efficacy and quality of life in the field of infertility should consider couples as a unit (26).

One of the strengths of this study was using of reliable and valid tools, which according to the culture of Iranian society, the results would be applicable in Iranian context.

Considering that other factors such as internal and external sources of distress control could influence the relationship between infertility distress and self-efficacy, the lack of evaluation all these factors is one of the limitations of this study (27).

On the other hand, considering that studies based on psychosocial conditions must be evaluated in each culture separately, and limited studies in this field have been conducted on infertile people in Iran. It is suggested that more research be done in this field and the mediating effect of distress control source factors and

internal and external adaptation are investigated. Also, by conducting interventional studies and controlling intervening factors, the effects of self-efficacy promotion on infertility distress in infertile men and women should be investigated and explained (28, 29,30).

Conclusion

Given that increased self-efficacy is associated with reduced infertility-related distress, it is recommended to get advantage from counselling programs in fertility clinics in order to increase infertile women's self-efficacy.

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Conflicts of interest

The authors declared no conflicts of interest.

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