Clinical Research

Survey frequency of the depression and anxiety levels of infertile women in western Iran

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ABSTRACT

BACKGROUND Infertility among couples is a painful emotional problem, which results in the feeling of grief in the form of psychological problems such as depression and anxiety. The present study was aimed to survey the frequency of depression and anxiety levels of infertile women in western Iran in 2017.

METHODS This cross-sectional study used a simple random sampling method for selecting the sample. The study population consisted of all infertile women who went to Farhangian health center in Ilam. The Beck's Depression Inventory, Beck's Anxiety Inventory, and demographic characteristics questionnaire were used for collecting the data. The questionnaires were distributed among midwife experts and patients. The collected data were analyzed by the chi-square test and variance analysis using SPSS version 20.

RESULTS Among 200 infertile women, 53.5%, 32%, 11%, and 3.5% suffered from severe, moderate, mild, and no anxiety, respectively. However, there were 85.5% showing a clinical anxiety. In addition, 42%, 19.5%, 14.5%, and 24% suffered from severe, moderate, mild, and no depression, respectively. However, there were only 61.5% showing a clinical depression. Women who had a lower than diploma education level and primary infertility suffered from higher anxiety levels.

CONCLUSIONS There was a high level of anxiety and depression in infertile women; therefore, it is necessary to pay attention to these disorders in the process of treatment of infertile women.

KEYWORDS anxiety, depression, fertility, infertility, Iran

Infertility is defined by most doctors as the inability to conceive a pregnancy after a year of regular sexual relations without contraception.[1] According to the World Health Organization, more than 75 million couples worldwide and more than 1.5 million couples in Iran are suffering from infertility. Its prevalence in different parts of the world is 10–15%, affecting one out of every six couples in their reproductive age.[2–4] It was reported that about 40% of infertility problems are related to men, 40% to women, and 20% to both factors.[5] Infertility affects various aspects of life and is one of the major stressful events in people's lives. It is a negative and frustrating incident for couples, especially for women, as it is associated with physical, social, psychological, and economic stress.[6]

The collapse of marriage, which is one of the challenges of family life and the present age, is a complication of infertility and also one of the major

causes of separation in Iranian couples.[7] This problem is a medical issue that affects the lives of infertile couples in all health dimensions.[8] Researchers have reported different psychological problems such as anxiety, depression, impulsive behavior, and dispersed stresses, feeling of helplessness, and worthlessness among young people. Depression is observed in the form of sadness, persistent fatigue, sleep and nutrition disorders, anxiety, and restlessness.[9–11] The feeling of depression and frustration can reduce infertile women's satisfaction with the past, present, and future life.[12] Psychological counseling should be provided as part of the treatment in infertile couples. There is no specialized infertility center in Ilam, so infertile couples receive infertility treatment alone without psychological consultation as part of the therapeutic support. Considering depression and anxiety as the most important causes of disability in women, this study was aimed to investigate their prevalence and related factors among infertile women in Ilam.

METHODS

Participants

The study population consisted of all infertile women who went to Farhangian health center in Ilam in 2017. This was a cross-sectional study. Two hundred infertile women who were eligible for the inclusion criteria were selected as samples of the study. The inclusion criteria included infertility, at least 18 years of age, the ability to complete a questionnaire, consent to participate in the research, and no history of physical and mental illness.

Infertility or a couple's failure to fertilize after 1 year of regular sexual contact without using contraception is divided into two categories: primary and secondary. Primary infertility is defined as a woman's inability to conceive within a year of marriage or unprotected sex with no history of pregnancy and even abortion at all. Secondary infertility means that the woman has conceived at least once but can no longer become pregnant.[1]

The participants were asked to complete three questionnaires: (1) individual characteristics questionnaire, which includes the age, education level of husbands and women, occupation, duration of infertility, and age of marriage; (2) Beck Depression Inventory (BDI) questionnaire; and (3) Beck Anxiety Inventory (BAI) questionnaire. These questionnaires are the most common and valid psychological tests that may be applied among all social settings and do not rely on culture.

Setting and data collection

A two-part researcher-made questionnaire and Beck's anxiety and depression tests were used to collect data. The validity of the researcher-made questionnaire was confirmed by content validity method. In this study, Cronbach's alpha coefficient for the researcher-made questionnaire was 90%, indicating that it has acceptable reliability. The first part of the questionnaire contained questions about individual characteristics and the second part about the participants' medical status and fertility history. The age, age of marriage, literacy level, husband and wife's occupation, infertility type (primary and secondary), and infertility duration were included. Depression levels were measured using the Beck's questionnaire.

The BDI, which was designed by Beck et al[13] in 1961, was used in this study. The reason for using this questionnaire was that it has an available standardized Persian translation and it has been used in recent international studies. The questionnaire has 21 questions, which are graded from 0 to 3 and standardized by Mansour and the Dadsetan. Therefore, the total score of this questionnaire ranges from 0 to 63 (no or minimum level=0–13, mild=14–19, moderate=20–28, and severe=29–63).

The BAI is a self-report questionnaire designed to measure the severity of anxiety.[14] This questionnaire has high validity. Its internal consistency coefficient (alpha coefficient) is 92, its validity through the test-retest reliability method is 0.75 after 1 week, and the correlation between its items ranges from 0.30 to 0.76.[15] The questionnaire is a 21-item scale designed to measure the severity of anxiety symptoms. The subjects were asked to choose one of four options on each item. The four options for each question are scored from 0 to 3. Each test item describes one of the common symptoms of anxiety (mental, physical, and panic symptoms). Therefore, the total score of this questionnaire ranges from 0 to 63 (nothing or minimum level=0–7, mild=8–15, moderate=16–25, and severe=26–63).[16]

Ethical consideration

After being approved by the Ethics Committee of Ilam University of Medical Sciences, the purpose of the project was explained to the participants, and written consents were obtained for participation in the study (code of ethics=1395.205).

Statistical analyses

Statistical analyses were performed using the statistical package for the social sciences (SPSS) software version 20 (descriptive and analytical statistics). In descriptive statistics, the frequency and percentage were calculated, and central indicators and dispersion were used. In analytical statistics, independent t-test and nonparametric test of Mann–Whitney were used to investigate the relationship between quantitative and qualitative variables of the two states in a normal situation. Also, analysis of variance test and nonparametric test of Kruskal–Wallis were used between quantitative and qualitative multivariate variables in a descending condition. To measure the relationship between qualitative variables, the chi-square and Fisher tests were used. The significance level of the test was 0.05.

RESULTS

The mean (SD) age of infertile women was 35.91 (6.01) years, the mean (SD) duration of infertility was 10.84 (6.20) years, and the mean (SD) age of marriage was 23.24 (3.49) years. The frequency of the depression and anxiety levels and demographic characteristics are reported in Table 1.

Investigating the relationship between the anxiety and type of infertility, education levels of women, education level of husband, and occupation of women, it was found that there is a significant relationship between the anxiety and education level of husband, education level of women, and type of infertility ($p<0.05$). The women who had lower than diploma education level and had primary infertility suffered from higher anxiety levels (Table 2).

Also, the study of depression level considering the type of infertility, education level of women, education level of husband, and occupation of women showed that there is a significant relationship between the type of infertility and depression level ($p<0.05$). The women with primary infertility suffered from higher depression levels than those with secondary infertility. In addition, the rate of depression was higher among those with an education degree lower than a diploma than those with a diploma or higher; this difference was not statistically significant (Table 2).

Also, the mean duration of infertility in women with severe depression and anxiety was higher than those without depression and anxiety; this was statistically significant. However, there was no significant relationship between levels of depression and anxiety and age of marriage (Table 2).

Table 1. Demographic characteristics and the depression and anxiety levels of infertile women who went to the health center in Ilam

Variables	n (%)
Woman occupation	
Housewife	164 (82)
Employed	36 (18)
Women's education	
Under diploma	101 (50.5)
Top diploma	99 (49.5)
Husband's education	
Under diploma	94 (47)
Top diploma	106 (53)
Anxiety level	
No anxiety	7 (3.5)
Mild	22 (11)
Moderate	64 (32)
Severe	107 (53.5)
Depression level	
No depression	48 (24)
Mild	29 (14.5)
Moderate	39 (19.5)
Severe	84 (42)

DISCUSSION

Infertility or a couple's failure to fertilize after 1 year of regular sexual contact without using contraception is divided into two categories: primary and secondary. Primary infertility refers to a woman who has never conceived within a year of marriage or unprotected sex and has no history of pregnancy and even abortion at all. Secondary infertility means that the woman has been pregnant at least once but can no longer conceive.[1] Infertility is one of the most important problems around the world and may impose major stress on infertile couples. It may have many reasons. Psychologically and physiologically, a woman needs pregnancy; it manifests the self-actualization and identity of women. Culture and society value pregnant women, and it is considered to be the main goal of marriage.[17] Several studies have reported that the psychological problems in infertile women are two times more than fertile women.[18,19] One study found that 76% of patients suffered from various degrees of depression with 61.5% from clinical depression, and 96.5%

Table 2. Relative levels of depression and anxiety among infertile women considering their infertility type, education level, occupation, duration of infertility, and age of marriage

Variables	Severity of anxiety					Severity of depression				
	None, n (%) (n=7)	Mild, n (%) (n=22)	Moderate, n (%) (n=64)	Severe, n (%) (n=107)	p	None, n (%) (n=48)	Mild, n (%) (n=29)	Moderate, n (%) (n=39)	Severe, n (%) (n=84)	p
Type of infertility,					**0.0001***					**0.0001***
Primary	1 (14.3)	2 (9.1)	23 (35.9)	95 (88.8)		4 (3.3)	7 (24.1)	28 (71.8)	82 (97.6)	
Secondary	6 (85.7)	20 (90.9)	41 (64.1)	12 (11.2)		44 (91.7)	22 (75.9)	11 (28.2)	2 (2.4)	
Women's education					**0.019***					0.083*
Under diploma	1 (1)	9 (8.9)	27 (26.7)	64 (63.4)		17 (16.8)	14 (13.9)	21 (20.8)	49 (48.5)	
Top diploma	6 (6.1)	13 (13.1)	37 (37.4)	43 (43.4)		31 (31.3)	15 (15.2)	18 (18.2)	35 (35.4)	
Husband's education					**0.01***					0.143*
Under diploma	0 (0)	11 (11.7)	24 (25.5)	59 (62.8)		17 (18.1)	15 (16)	16 (17)	46 (48.9)	
Top diploma	7 (6.6)	11 (10.4)	40 (37.7)	48 (45.3)		31 (29.2)	14 (13.2)	23 (21.7)	38 (35.8)	
Women's occupation					0.134*					0.087*
Housewife	5 (3)	16 (9.8)	49 (29.9)	94 (57.3)		37 (22.6)	24 (14.6)	28 (7.1)	75 (45.7)	
Employed	2 (5.6)	6 (16.7)	15 (41.7)	13 (36.1)		11 (30.6)	5 (13.9)	11 (30.6)	9 (25)	
Duration of infertility (years), mean (SD)	6.5 (3.9)	10.3 (6.4)	8.3 (4.4)	12.7 (6.6)	**<0.001**†	8.7 (4.4)	9.4 (5.7)	10.6 (6.9)	12.6 (6.2)	**0.003**†
Age of marriage (years), mean (SD)	20.5 (1.3)	22.8 (3.6)	23.5 (3.6)	23.3 (3.4)	0.187†	23.5 (3.2)	23.7 (3.9)	22.4 (3.4)	23.2 (3.5)	0.402†

*chi-square test; †independent t-test; p<0.05 was considered as significant. SD=standard deviation

suffered from various degrees of anxiety with 85.5% from clinical anxiety. This is consistent with the study of Haririan et al,[20] which showed that 42% of subjects had no evidence of depression symptoms, 37% had mild, 10% had moderate, and 11% had severe. In other words, 58% of infertile women suffered from some degree of depression, in which 21% had clinical depression. Kalkhoran et al[21] showed that the frequency of anxiety and depression in infertile women is higher than fertile women. A study by Shahordy et al[22] concluded that infertile women have more serious psychological problems compared with fertile women. Pour et al[23] showed that the level of psychological, physical, and economic violence in infertile women was significantly higher than fertile women.[23] Probably, these problems are caused by a failure in treatment and waste of cost and time.

This study also showed that the prevalence of depression and anxiety was higher in housewives than in employed women; however, this was not statistically significant. On the other hand, other studies showed that psychological problems were higher among housewives. Therefore, infertile women who conduct various social activities may experience less depression and anxiety because of financial independence, a job identity, lack of

isolation, and being skillful in responding to stress.[20,24] In this study, the higher education level of both women and their husbands was associated with a reduction in anxiety and depression levels. This relationship was significant in relation to the severity of anxiety but was not significant in relation to depression. This is consistent with the findings of Haririan et al[20] they also showed that the higher education level of both women and their husbands is associated with a reduction of psychological problems. It seems that high-educated husbands behave appropriately with their infertile wives; this is an appropriate protective factor against psychological problems including anxiety and depression. This study showed that the relationship between the duration of infertility and the levels of depression and anxiety is significant; women with longer infertility duration suffered from significant depression and anxiety. This is consistent with the findings of a study that was conducted on 338 infertile women in Boston[25] and is inconsistent with the findings of Haririan et al.[2]

The prevalence of depression and anxiety is high among infertile women. Therefore, it is necessary to pay attention to these disorders in the process of treatment of infertile women. These are among the limitations of this study: it used Beck's questionnaires to diagnose the clinical signs of depression and anxiety. In future studies, it is better to conduct a clinical interview to diagnose depression and anxiety after the test. The research was conducted at Farhangian health center in Ilam, which means that some patients may go to a private clinic for treatment and the findings do not represent the total population of infertile women.

Conflict of Interest

All the authors declared that they have no conflict of interest.

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