Psychology and Personality Types of Infertile and Fertile Women

ألحالة النفسية وأنواع الشخصية لدى النِساءِ العقيماتِ والخصباتِ

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المستخلص

الهدف: تحديد مدى انتشارَ العوامل المؤدية للحالة النفسية ونوع الشخصيةَ بين النِساءِ العقيماتِ والخصباتِ اللاتى راجعن مستشفى الإمام الخميني.

المنهجية: ١٥٠ إمرأة عقيمة مِنْ مركزِ بحوث الصحةِ الانجابية (ظالي العصر) و١٥٠ إمرأة خصبات مِنْ عيادةِ الطبّ النسائي في مستشفى الإمام خميني في طهران / ايران تم اختيارهن بطريقة عشوائية بسيطة . البيانات تم الحصول عليها بإستعمال اداة (آيزينك) للشخصية واستفتاءاتَ الباحثَ الخاصة.

النَتائِج: بينت الدراسة معتمدة على استفتاء (ايزينك) للشخصية ، ظاهرة عدم إستقرار الشخصيةِ كَانَ أكثر شيوعاً بين النِساءِ العقيماتِ مِنْ النِساءِ الخصباتِ؛ هذه العلاقةِ كَانتْ ذات دلالة الأحصائية (P <0.001). وان ربّات البيوت كُنّ في الخطرِ الأعلى مِنْ حدوث الإضطرابات النفسيةِ وعدمِ إستقرار الشخصيةِ بالمقارنة مع النِساءَالعاملات. هذه النتائج كَانتْ ذات دلالة الأحصائية أيضاً (P <0.001).

التوصيات: آخذين بنظر الأعتبار الإنتشارِ العالي للمشاكلِ الشخصيةَ والإضطرابات النفسيةَ بين النِساءِ العقيماتِ، مما يستوجب اهتمام أكثرِ جديّة مِنْ قبل اخصائيات النسائية ، أطباء النفسية وعلماء النفس لمعالجةِ هذه الإضطراباتِ. و إستعمال العلاج النفسي، بالوسائل المساندة خاصة، و يجب أنْ يؤخذ بنظر الإعتبار كجزء مِنْ الإطارِ العلاجّي العامّ للعُقُم.

Abstract

Objective(s): To determine the prevalence and predisposing factors of psychology & personality types among infertile and fertile women attending in Complex Imam Khomeini Hospital.

Methodology: A total of 150 infertile women from Vali-Asr Reproduction Health Research Center and 150 fertile women from the Gynecology Clinic of Imam Khomeini Hospital in Tehran / Iran were chosen by simple randomization. Data was obtained by using Eysenck personality (EPQ) and structured researcher questionnaires.

Results: showed that based on Eysenck personality questionnaire (EPQ), personality instability was more common among infertile women than fertile women; this relationship was statistically significant (P<0.001). Housewives were at higher risk of developing psychological disorders and personality instability as compared to occupied women. These findings were also statistically significant (P<0.001).

Recommendations: Considering the high prevalence of psychological disorders and personality problems among infertile women, it seems that more serious attention is required from gynecologists, psychiatrists and psychologists for treatment of these disorders. The use of psychotherapy, especially supportive methods, should be considered as part of the general therapeutic framework of infertility.

KeyWords: Personality Types; Infertility; Eysenck personality test (EPQ)

Introduction:

Special attention has been paid to psychological health of infertile couples during the last few years. Infertility is doubtlessly a severe distressful experience for many infertile couples. Noorbala et al. reported that 50% of couples considered infertility as the most disappointing experience in their lives [(1)]. Another study performed by Mahlstedt showed that 80% of infertile couples described infertility as a stressful or very stressful experience [(2)] .Other researchers have paid special attention to areas such as health problems, lack of self-confidence, feeling of grieve, threat, depression, sin and disappointment and marital problems and they believed that the above factors had some relation with fertility [(3-5)]. During the past few years, many researches have been devoted to anxiety and depression associated with in virto fertilization (IVF), especially during egg retrieval or embryo transfer; this includes fear of treatment failure and lack of hope of having a child, which lead to psychological problems among infertile women [(6-9)]. The results of a study shows that high levels of anxiety among women who conceive by IVF can lead to more complications in the newborn from the time of delivery and even thereafter as compared to the control group [(10)]. Overall prevalence of psychological problems among infertile couples has been estimated to be around 25%-60% [(11-12)] .The diagnosis of psychological problems in infertile couples is a complicated issue and is influenced by many factors such as gender, etiology and duration of infertility, as well as the use of specific therapeutic methods [(13-15)]. Different factors including, flexibility and mood stability, or psycho-social and marital relationship during IVF therapy play important roles in helping women to cope with infertility and to bring about satisfaction towards infertility treatment methods [(6)]. On the other hand, counseling and supportive psychotherapy are very effective in decreasing the rate of anxiety among couples undergoing infertility treatment [(15)]. Since there is a relationship between anxiety-depression and the hypothalamus-pituitary-adrenal axis (anxiety causes hyperprolactinemia) [(7,16)], thus psychological interventions must be considered for couples who fail to conceive. In this way, the chance of pregnancy may rise by improving mental state of the women. Thus there is scanty works about the prevalence of psychiatric morbidities among infertile women in the area. The objectives in conducting this study are to compare the prevalence of psychological and personality disorders and their predisposing factors among fertile and infertile women. The results of this study can beyond any doubt, help to identify various mental disorders as well as to help organizing programs for their prevention and treatment thereby improving mental health of child bearing women.

Methodology:

This study was performed on 150 infertile women who attended the Infertility Clinic of Vali-e-Asr Reproduction Health Research Center, Tehran, Iran, and 150 fertile women who attended the Gynecology Clinic of Imam Khomeini Hospital, Tehran, Iran, "between" March 2009 through June 2010. The participants were selected by consecutive sampling. A psychologist informed the participants about the aims of the study and after obtaining written consent, they were included in the study. Data was recorded in Symptom Checklist-90-Revised (SCL-90-R), Eysenck, and structured researcher questionnaires. SCL-90-R is a 90-item questionnaire designed to assess psychological symptoms. It was initially used to show the psycho-cognitive aspects of functional and somatic disorders and was initially developed by Derogatis, Lipman and Cori in 1973 and subsequently altered based on clinical experience and psychoanalysis (Derogatis, Rickels, Rak, 1976). There are three suggested global indices for the SCL-90-R: the global severity index (GSI: the average score of the 90 items of the questionnaire); the positive symptom distress index (PSDI: the average score of the items scored above zero); and the positive symptoms total (PST: the number of items scored above zero). For the Tehran (Iran) population, a mean GSI greater than one was suggested as indicating psychiatric disorder 17. Eysenck personality test is one of the most routinely used questionnaires for research studies and it determines introvert-extrovert, and stability-instability of personality. Its use in researches and on different groups indicates its validity. The questions in this questionnaire completely cover the personality aspects of Eysenck's hypothesis and it has content validity

in the study performed by Poorshahbaz in 1993, the reliability of the test was calculated and results is as follows: Extrovert scale (0.74), stability scale (0.82). The third tool was a special questionnaire conducted by the researchers which assesses, personal, social, familial, infertility history and other predisposing factors, psychological and personal data and it is comprised of 34 open-ended and closed questions. The questionnaires were completed by a psychologist. After initial assessment and interview with 20 patients, primary data was obtained and organized and its reliability was confirmed by academic experts. This research was approved in Ethic Committee of Tehran University of Medical Science and was registered in Vali-e-Asr Reproductive Health Research Center. Comparison between study groups was made with Chi-square test.

Statistical analysis

A multiple logistic regression was used to evaluate the relationship between instable personality and potential predictor variables included age (years), marriage duration (years), educational level (primary school /secondary (high)school/diploma/university degree), occupation (housewife/working), economic status (low/medium/high), history of psychiatric visits (yes/no), history of taking psycho- therapeutic medications (yes/no), and fertility (infertile /fertile). A forward model was used for this analysis, and the criterion for including a variable into the model was a P value less than 0.05. Odds ratios with 95% confidence intervals (CI) of variables in the model are reported. P values less than 0.05 were considered as statistically significant. All computations were carried out with SPSS 13 (SPSS Inc., Chicago, IL).

Results:

A total of 150 fertile women with (age range 17-45 years, mean =31.6 years; SD± 5.5) and 150 infertile women (age range 18-42 years, mean= 27.7 Years; SD±5.2) were enrolled. Duration of marriage was between 1-28 years (mean=12 years, SD± 5.5) in fertile women and between 2-25 years (mean= 7.0 years, SD ± 4.6) in infertile women. Duration of infertility was between 1-25 years (mean= 6.1 years, SD± 4.4) in infertile women.

Table 1. Frequency and percentage of demographic factors in study groups

	Infertile	Fertile
Education Level		
Primary school	33 (22.0 %)	25 (16.7 %)
Secondary-High school	33 (22.0 %)	38 (25.3 %)
High school diploma	63 (42.0 %)	47 (31.3 %)
University degree	21 (14.0 %)	40 (26.7 %)
Occupation		
Housewife	119 (79.3 %)	104 (69.3 %)
Working woman	31 (20.7 %)	46 (30.7 %)
Economic status		
Low	45 (30.0 %)	41 (27.3 %)
Medium	85 (56.7 %)	82 (54.7 %)
High	20 (13.3 %)	27 (18.0 %)
History of visiting psychiatrist	19 (12.7 %)	24 (16.0 %)
History of taking psychotherapeutic drugs	19 (12.7 %)	26 (17.3 %)*
Cause of infertility		
Female factor	107 (71.3 %)	--
Male and female factor	31 (20.7 %)	--
Unknown	12 (8.0 %)	--
History of infertility treatment		
Yes	86 (57.3 %)	--
No	64 (42.7 %)	--

Two patients had a history of taking psychotherapeutic medication without referring to psychiatrist, %=percent.

Table (1) shows the demographic characteristics of the study groups. The prevalence of psychological disorders (GSI > 1) was compared between the groups under study and results showed that 44% (66 women) of infertile and 28.7% (43 women) of fertile group had psychological disorders, so the prevalence of psychological disorders was significantly higher among infertile women as compared to fertile women. (X^2=7.623, p=0.006). Using Eysenck test to determine the introvert and extrovert aspects of personality types of the subjects, 50.0% (75 women) of infertile group were found to be introverts and 50% (75 women) were extroverts, also among fertile group 50.7% (76 women) were introverts and 44.3% (74 women) were extroverts. Regarding distribution of introvert or extrovert personality there was no statistical significant difference between the two groups (X^2=0.013, p=0.908). This pattern also showed separately in housewives and working women (Table 2-3).

Table 2. Personal characteristics based on Eysenck test (introvert-extrovert personality) in study groups with different occupation

Occupation	Personal characteristics	Infertile	Fertile	
Housewife	Introvert	57 (47.9 %)	54 (51.9 %)	x^2 = 0.359
	Extrovert	62 (52.1 %)	50 (48.1 %)	p = 0.549
Working woman	Introvert	18 (58.1 %)	22 (47.8 %)	x^2 = 0.778
	Extrovert	13 (41.9 %)	24 (52.2 %)	p = 0.378
Total	Introvert	77 (50.0 %)	76 (50.7 %)	x^2=0.013
	Extrovert	77 (50.0 %)	47 (49.3 %)	p=0.908

%=percent, x^2=chi-squared test , p=probability level

Table 3. Personality stability based on Eysenck test in study groups with different occupation

Occupation	Personality characteristics	Infertile	Fertile	
Housewife	Stable	13 (10.9 %)	41 (39.4 %)	x^2 = 24.562
	Instable	106 (89.1 %)	63 (60.6 %)	p < 0.001
Working woman	Stable	12 (38.7 %)	23 (50.0 %)	x^2 = 0.952
	Instable	19 (61.3 %)	23 (50.0 %)	p = 0.329
Total	Stable	25 (16.7 %)	64 (42.7 %)	x^2=24.298
	Instable	125 (83.3 %)	86 (57.3 %)	P<0.001

%=percent , x^2=chi-squared test , p=probability level

Eysenck test showed that personality instability was significantly more common among infertile women than fertile women, (X^2=24.298, p<0.001). In housewives prevalence of personality instability in infertile group was higher than fertile group, 89.1% versus 60.6%, separately (X^2=24.562, p<0.001) whereas prevalence of personality instability in fertile and in fertile workingwomen was not statistically different (X^2=0.592, p=0.329) (Table 3)

In women with psychiatric disorders prevalence of personality instability in infertile group was higher than fertile group, 98.5% versus 83.7%, separately (X^2=8.345, p=0.006) also prevalence of personality instability in infertile was higher than fertile women without psychiatric disorders (X^2=11.977, p=0.001) (Table 4)

Table 4. Personality stability based on Eysenck test in study groups with and without psychiatric disorders

Psychiatric disorders	Personality characteristics	Infertile	Fertile	
No	Stable	24(28.6%)	57(53.3%)	X^2 = 11.977
	Instable	60(71.4%)	50(46.7%)	p = 0.001
Yes	Stable	1(1.5%)	7(16.3%)	X^2 = 8.345
	Instable	65(98.5%)	36(83.7%)	p = 0.006

%=percent, x^2=chi-squared test, p=probability level

In table 5 nine common stress factors among infertile women was listed are related to the negative reaction of other people, feeling of loneliness, and treatment for infertility…etc From the stress factors, Intervention of family and others related persons (p=0.190), stress factors related to treatment for infertility (p=0.062), financial problems (p=0.079), wanting a child (p=0.267) had a same frequency between infertile women

Table 5. Comparison of stress factors among stable and instable infertile women

	personality characteristics based on Eysenck test		Total	p-value
	Stable	Instable		
Intervention of family & others	18(72.0%)	104(83.2%)	122(81.3%)	0.190
Feeling of loneliness	12(48.0%)	99(79.2%)	111(74.0%)	0.001
Treatment for infertility	11(44.0%)	80(64%)	91(60.7%)	0.062
Incomplete family	7(28.0%)	71(56.8%)	78(52.0%)	0.009
Identity disorder	6(24.0%)	70(56%)	76(50.7%)	0.003
Financial problems	8(32.0%)	64(51.2%)	72(48.0%)	0.079
Women wanting a child	13(52.0%)	50(40%)	63(42.0%)	0.267
Lack of hope	4(16.0%)	58(46.4%)	62(41.3%)	0.005
Woman named as infertile (Labeling)	5(20.0%)	54(43.2%)	59(39.3%)	0.030

%=percent, p=probability level

With stable and unstable personality, but feeling of loneliness (p=0.001), destructed family (p=0.009), identity disorder (p=0.003), lack of hope (p=0.005) and labeling as infertile (p=0.030) were more common in instable infertile women.

Infertility duration in introvert infertile women was lower than extrovert infertile women (X^2=8.970, p=0.011), but there were no difference between stable and instable infertile women (X^2=0.737, p=0.737) according to Eysenck test (table 6).

Table 6. Infertility duration and personality disorders based on Eysenck test among infertile women

Duration of infertility (Years)	Personality characteristics based on Eysenck test			
	introvert	extrovert	stable	instable
lower 5	35(46.7%)	47(62.7%)	12(48.0%)	70(56.0%)
6 - 10	33(44.0%)	16(21.3%)	9(36.0%)	40(32.0%)
11 and more	7(9.3%)	12(16.0%)	4(16.0%)	15(12.0%)
p-value	0.011		0.737	

%=percent, p=probability level

In addition, present study results show that the stable personal characteristic was not associate with level of education (X^2=1.153, p=0.185).

Logistic regression analysis showed that age (p=0.047), a psychiatric disorder (P < 0.001), occupation (p=0.010) and infertility (P = 0.001) were predictors of instable personality, with no other variables remaining in the model. Personality instability were more frequently observed in women with infertility (OR = 2.84, 95%CI = 1.55, 5.23), housewives women (OR = 2.36, 95%CI = 1.23, 4.55) and in those with a psychiatric disorder (OR = 9.09, 95%CI = 4.00, 24.62), but women with greater age had less chance of instable personality (OR = 0.95, 95%CI = 0.90, 0.99).

Discussion:

The results of this study show that 44% of infertile women and 28.7% of fertile women have psychological disorders, which indicates that the prevalence of psychological disorders is two-fold among infertile women as compared to fertile women. In the study performed by Noorbala in Tehran, Iran, psychological disorders were found in around 27.85% of subjects, Bjorn et al (1992) reported these problems to be 35.2% among infertile women and Lu reported that 83.8% of the disorders were mild, and 52% were moderate-severe in intensity among infertile women as compared to women in the control group and psychological disorders are statistically significant among infertile women than fertile women [18-20].

Dyer stated that there was a significant statistical difference in the most items of the SCL-90-R questionnaire between fertile and infertile women and the highest mean values in the groups under study were found for depression and somatization [21].Wilson, Breg (1990) reported an increase in the mean scores for interpersonal factors and there is no significant difference between the 9 scales of the SCL-90- R questionnaire among fertile or infertile women [19-22]. Considering the results derived from this study as well as from other studies, it is clear that the prevalence of psychological disorders among infertile women in Iran is higher than western countries and lower than eastern (Asia & Arabic) countries.

The fact that psychological disorders were twice as common among infertile women as compared to fertile women in Iran indicates the importance of conceiving and having a child in our country. Generally infertile women experiences negative social consequences including marital instability, stigmatization and abuse. Infertility can have a serious effect on both psychological wellbeing and social status of women in our culture.

The current study also shows that personality instability is more common among infertile than fertile women. Instable personality is at higher risk of developing psychiatric disorders to be considered by physicians in the area, and psychological treatment considered especially during failure of physical treatment.

The findings of our study are in agreement with those of Lu (1995) and Wischmann (2002). The results of this study show that the most important stress factors which cause psychological and personality

problems in infertile women include the reaction of relatives and friends, feeling of oneliness, and treatment for infertility. Financial and sexual factors can also act as one of the most important factors in psychological and personality problems of infertile women. Also, other findings in our study showed that there is an association between personality (instability) disorders and high school level of education, and duration of infertility (using Eysenck test to identity introvert to extrovert personality). The result of our study also show that the prevalence of psychiatric and personality problems (Instability) is associated with occupation and it was seen that psychiatric disorders and personality instability was higher in housewives as compared to occupied women. In concordance with our findings, Noorbala et al (1999) reported that psychiatric disorders are more frequent among housewives than occupied women. However, in the study performed by Yaghoobi; et al (1995), the rate of psychiatric disorders was reported to be higher among occupied women. It seems that in this aspect, our findings show controversy with some other studies, which may be due to cultural differences, method of data collection, or other factors. Regarding the results derived from this study, which indicate the higher prevalence of psychological and personality problems in infertile women as compared to fertile women, thus special attention should be the importance of psychological support in these patients and in the treatment of infertility. This problem should be identified and psychiatric counseling, especially supportive therapy should be within the general framework of treatment for infertility. In this way the rate of psychiatric symptoms will fall and mental well being will improve the outcome of infertile women. Based on the findings of this study, we propose the following

Recommendations:

1. Raising awareness among gynecologists about the prevalence of psychiatric and personality disorders among infertile women and their need for referral to psychologists or psychiatrists for proper management.
2. Counseling methods, especially supportive psychotherapy, should be considered for infertile women so as to improve their mental health and increase their chance of conceiving.
3. Treatment of infertile women in all infertility treatment centers should be through a combined and close work of both gynecologists, and psychologists with psychiatric counseling centers should be set up in these centers so as to reach our goals practically.
4. The media should support the community, especially infertile women to be aware about the importance of combined use of psychological and physical treatment of infertility.

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