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THE INVESTIGATION HOLISTIS STRESS IN INFERTILE WOMEN AND RELATION TO DEMOGRAPHIC CHARACTERISTICS IN WOMEN WHO REFERRED TO YAZD INFERTILITY CENTER

Fatemeh Ghavi[1], Leili Mosalanejad[2*], Masomeh Golestan[3], Nahid Yari[3], Sahabeh Etebariy[3], Saeed Abdollahifard[4]

[1]Associated Professor, Medical Education Department, Center for Social Determinants of Health, Jahrom University of Medical Sciences, Jahrom, Iran.
[2]Assistant Professor, Mental Health Department, Research Center for Social Determinants of Health, Jahrom University of Medical Sciences, Jahrom, Iran.
[3]Research & Clinical Center, Shahid Sadoughi University of Medical Sciences, Yazd, Iran.
[4]Medical Student, Student Research Committee, Shiraz, Iran.

***Author for Correspondence: Leili Mosalanejad**
Associated Professor, Medical Education Department, Center for Social Determinants of Health, Jahrom University of Medical Sciences, Jahrom, Iran.

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ABSTRACT

Aim: Investigation holistic Stress in infertile women and relation to demographic Characteristics in women who referred to Yazd infertility center by cross sectional descrpitive study. Methods: This study was carried on 400 infertile women who referred to Yazd Infertility Center between 2013-2014. These participants were selected by purposive sampling method. Data were collected using demographic characteristics' questionnaire, Coudron Stress Test and Perceived Stress Test. Relation between demographic variables and stress obtained from Inferential statistics. **Results**: Mean score of perceived stress and all level of life, personality and health stress is higher than other causes, when the causes is related to common causes, but there are not any significant difference between them. There are significant difference in stress mean score from duration of infertility. ($p<0.05$).Positive perceived stress in common causes of infertility and negative perceived stress in unknown causes were higher than other one. There was not any significant difference between educational level, age and stress ($p>0.05$). **Conclusion**: Results highlights infertility has a significant impact on the infertile women's mental health. It is important psychological approach consider as an important part of treatment inside other medical treatments.

KEYWORDS: Infertility, Perceived stress, Depression, Anxiety, Stress.

INTRODUCTION

Infertility is a major life crisis that leads to serious psychological problems and stressful experiences for infertile people(Sadock et al., 2003).According to the World Health Organization(WHO), fertility rates vary in different parts of the world, but its average is 20 percent (Ramezanzadehet al., 2004a).Wichman et al Studies show that infertility is such a complex experience in terms of psychology that can increase depression in some women(Wichmanet al., 2011). Gourounti et al also suggest that infertility and its treatment are severe stress derivers (Gourountiet al., 2012).Some researchers such as Connolly et al speculate that damaging psychological factors play a major and pathogenic role in infertility. Connolly et al in their research also suggest that infertility causes many mental health problems of infertile cases that these problems can consequently contribute to some infertility treatments. For instance, the stress derived by delaying o rpreventing ovulation may affect the outcome of medical treatment(Connollyet al., 1992). Infertility-induced stress is defined as the interaction between the physical conditions that lead to infertility and medical interventions, reactions of others and mental characteristics of the individual that may accompany the individual for along time and relapse with any diagnostic or therapeutic intervention including treatment for IVF and other infertility treatments. Numerous medical tests and limb inspection, the long-term treatment of infertility, low rate of treatment success as well as the economic problems caused by infertility treatments include severe stressors for infertile individuals(Covington, Hammer, 2007).

Mollaiy Nezhad et al in their study found that all infertile couples suffered from infertility stress to varying degrees and about 46 percent of them didn't have marital compatibility (Mollaiy Nezhadet al., 2000).Studies have shown that8 6percent of infertile women are involved with infertility stress in their lives(Ramezanzadehet al., 2004).Newton et al in their study showed that infertile

couples in particular experience the stress of infertility indifferent aspects including the stress related to the need for being a parent(Newtonet al., 1999).Other researchers showed that due to the low success rate of IVF treatment, involvement in infertile women with infertility stress is understandable(Seible, 1997). Litzinger & Gordonstated that 80% of infertile patientssuffer fromapsychologicaldisorder, includingmarital dissatisfaction, disturbance in relationships especially between the couples, the rageand negative emotional effects(Litzinger, Gordon, 2005).Several mechanisms have been proposed for the effects of stress on fertility including impairing secretion of gonadotropins, also anxiety leads to infertility intensification by an increase in cortisol, prolactin(Cooperet al.,2007; Karlidere et al., 2008). Women in infertile couples reported greater psychological symptoms (anxiety & depression) and more decreased marital adjustment than men in infertile couples; but the couples did not show any significant difference with those in control groups regarding these common parameters(Burns, Covington, 2000).Due to the relatively high incidence of infertility and relation between psychosocial symptom and cultural basis in infertile people, we were to examine the complete stress of infertile women (in the dimensions of life, personality and health stress) and to determine its relationship with demographic factors such as duration of infertility, duration of marriage ,cause of infertility, age, occupation and education.

Aim

This study was performed with the aim of examining the holistic stress in infertile women and its association with demographic factors(Sn- causes of infertility-duration of marriage, age, education& job) on women referring toYazd Infertility Center. The data gathering tools have included demographic data and as second section of the questionnaire included perceived stress and holistic coudron stress.

METHODS

Design

This cross sectional study was carried out on 400 infertile women who referred to Yazd infertility center between 2013-2014.

Sample

The research population was considered all infertile women referring to Infertility Center in Yazd and the research samples were about 400 individuals regarding the prevalence of infertility.

Data collection

The data gathering tools were a questionnaire of perceived stress scale and Coudron stress test. Cohen et al. perceived stress questionnaire was made in 1983. Thescalehas14itemsand each item is answered on the basis of a five-point Likert scale(none, low, medium, high and very high); these options are scored in the order of0, 1, 2, 3 and 4 and include positive and negative sub scales of perceived stress.

Internal consistency reliability coefficients of the scale have been achieved through Cranach's alpha coefficient in the range of 0.84to 0.86in two groups of students and a group of smokers who were on the giving-up smoking program. This scale is auseful tool for assessing overall stress experienced in different age groups. Cranach's alpha coefficients for this scale are obtained 0.88and 0.81, respectively.

For reviewing holistic stress in various areas, Coudron stress questionnaire was used. This questionnaire is standardized and has good reliability and validity in several studies.

In repeated use of the questionnaire, validity and reliability of instruments were in all cases higher than7.0andwas8/0, respectively. The applied tools consist of several sections that investigate life, personality– health and institutional stresses. Given that a large portion of the samples were house wives and it was not possible to study workplace stress in them, therefore, this part of the questionnaire was removed and only the other three sections were evaluated. The first sectioncontained23questions that measured personality-driven stress and Intellectual habits of the patients. In this section, some cases such as dissatisfaction with life, worry about the future, feelings of internal anxiety and guilt have been assessed. The second part consisted of16 questions that were used to measure the level of stress in personal life, more over, cases such as divorce, relationship and family conflicts, economic and job concerns were explored. The grading of this type of stress is as follows: lower than 15 as normal, between 15 and 40 as not having a satisfactory life and higher than 40 means that you live in stressful condition so there is the possibility of burnout.

The questions were two-choice questions in a “Yes”, “No” fashion. For grading the questions, standard grading method of the questionnaire will be used. This means that for each positive response in the level of stressful thought habits, 1 point will be considered and finally, with respect tothe obtained scores, the score higher than5is considered as a stressful personality. And then the last part of this questionnaire examines health stresses. This questionnaire contains17 questions and measures the stress caused by compliance with health issues.

Health stress which is defined as stress toward one’s own life is classified as lower than 30 (care in personal health),

between 30 and 60 (health in not such that can be controlled) and higher than 60 (life-health brings disturbance).

Data analysis

For data analysis, descriptive statistics such asmeans and standard deviation and then correlation coefficient were used to examine the distribution of stress and analytical tests were applied to examine mean differences in terms of demographic factors.

RESULTS

The results showed that most people aged less than 20 years and they have married for less than5yearsso they have less than a 5-yearhistory of infertility.(Table 1).

Table2 shows that the mean score of stresses is higher than in other cases when the stress factor is in both cases. Moreover, when the cause of infertility is unknown, the mean score of stresses has been reported to be higher than that of masculine causes. (Table 2).

The results of another research indicate that the level of stress varies in accordance with infertility duration, and this fact shows that there is a significant difference in positive perceptions of stress on the basis of infertility duration.(Table 3).

Table 4shows that there is no significant difference in people's stress based on infertility factor.(table 4).

This graph represents that,when infertility exists with an unexplained cause, the mean of negative perception of stress has been observed more than others cases. (Figure1 cite here).While a positive perception of stress is observed to be higher than other cases when both couples are causes of infertility.(Figure 2).

Table 1: Demographic distribution in infertile women.

Demographic Data	Categories	Frequency (%)
Age	Lower than 20	228(58.5%)
	21-30	116(29.7%)
	31-40	36(9.2%)
	41-50	10(2.6%)
	Total	390(100%)
Duration of marriage	Lower than 5	182(46.8%)
	6-10	140(36%)
	11-15	52(13.4%)
	More than 16	15(3.9%)
	total	389(100%)
Case of infertility	Lower than 5	111(28.4)
	6-10	80(20.6%)
	11-15	147(37.6%)
	More than 16	53 (13.6%)
	total	391(100%)
Education level	Primary	86(21.7%)
	Diploma	177(43.3%)
	higher	135(34%)
Job	Employer	66(16.6%)
	Household	332(83.4%)

Table 2: Distribution of stress from causes of infertility N=398.

Perceived stress	Causes of infertility	Mean	SD	CI
Negative conception	Male factor	10.14	5.97	(9.01-11.26)
	Female factor	11.03	5.16	(9.87-12.18)
	unknown	10.61	5.100	(10.62-12.30)
	Both	11.46	5.83	(8.97-12.25)
Positive conception				
	Male factor	13.65	5.31	(12.65-14.66)
	Female factor	14.15	4.54	(13.29-15.32)
	unknown	14.30	4.72	(13.37-14.93)
	Both	14.80	5.38	(13.29-16.32)
Cordon stress				
Life stress	Male factor	2.02	0.70	(1.88-2.10)
	Female factor	1.95	0.72	(1.78-2.11)
	unknown	2.26	0.69	(2.05-2.28)
	Both	2.70	0.69	(2.06-2.46)

Health stress	Male factor	1.66	0.60	(1.54-1.77)
	Female factor	1.57	0.52	(1.45-1.69)
	unknown	1.72	0.67	(1.61-1.83)
	Both	1.82	0.59	(1.65-1.99)
Personality stress	Male factor	0.7	0.45	(0.68-0.80)
	Female factor	0.66	0.47	(0.55-0.77)
	unknown	0.72	0.45	(0.65-0.79)
	Both	0.78	0.41	(0.66-0.90)

Table 4: Stress in infertile women from causes of infertility.

Perceived stress	Causes of infertility	N	Mean of rank	Z	Significance
Negative conception	Male factor	110	174.88	5.03	0.16
	Female factor	79	193.66		
	unknown	144	206.43		
	Both	52	193.12		
	Total	385			
Positive conception					
	Male factor	110	185.45	1.44	0.69
	Female factor	79	199.23		
	unknown	144	190.92		
	Both	52	205.28		
	Total	385			

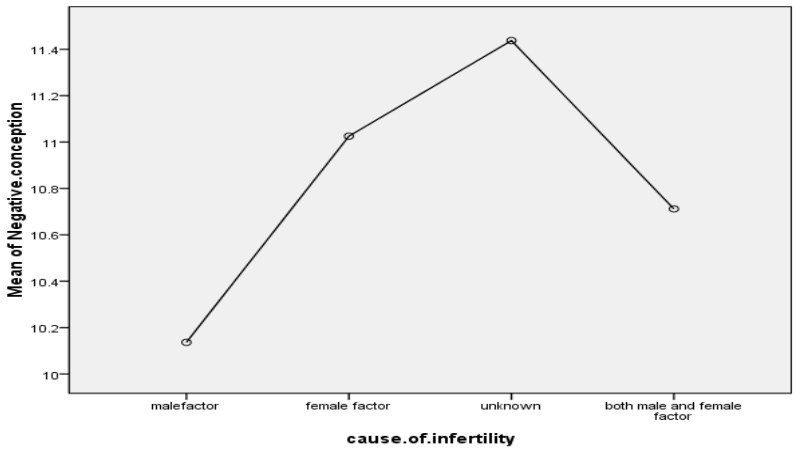
a. Kruskal Wallis Test

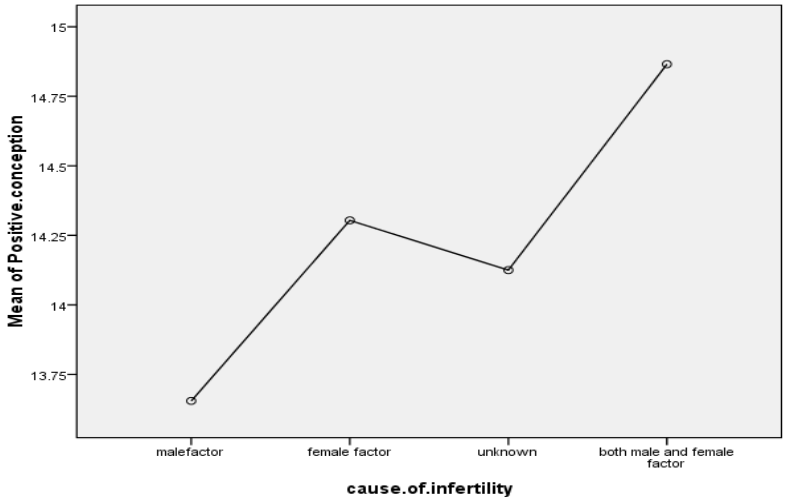
Cordon stress						
Life stress						
Causes of infertility		**Normal**	**No satisfaction**	**Exhaustion**	**X^2**	**value**
	Male factor	25(23.6%)	54(50.9%)	27(25.5%)	8.73	0.18
	Female factor	22(28.6%)	37(48.1%)	18(23.4%)		
	unknown	24(16.7%)	71(49.3%)	49(34%)		
	Both	80(15.7%)	23(45.1%)	20(39.2%)		
Health stress		Normal	Moderate	High		
	Male factor	43(40.6%)	55(51.9%)	8(7.5%)	11.73	0.06
	Female factor	34(44.2%)	42(54.5%)	1 (1.3%)		
	unknown	59(41%)	67(46.5%)	18(12.5%)		
	Both	14(28%)	31(62%)	5(10%)		
Personality stress	Personality not source of stress		personality as a source of stress			
	Male factor	31(29.2%)	75 (70.8%)	1.66	0.64	
	Female factor	26(33.8%)	51(66.2%)			
	unknown	40(28%)	103(72%)			
	Both	12(23.5%)	39(76.5%)			

Table 3: Stress in infertile women from duration of infertility

Variables	**Duration. Of infertility**	**N**	**Mean Rank**	**X^2**	**Significance**
Perceived stress test					
Negative. Conception	lower than 5 years	222	193.64	0.64	0.99
	6-10	116	190.87		
	11-15	36	190.36+		
	more than 16	10	193.90		
	Total	384			
Positive .conception					
	lower than 5 years	222	203.98	11.36	0.01
	6-10	116	170.21		
	11-15	36	211.08		
	more than 16	10	129.25		
	Total	384			

courdon stress						
Life stress						
Duration of infertility		**Normal**	**No satisfaction**	**Exhaustion**	**X^2**	**value**
	lower than 5 years	51(23.1%)	116(52.5%)	54(24.4%)		0.001
	6-10	21(18.6%)	57(50.4%)	35(31%)	23.37	
	11-15	5(14.7%)	11(32.4%)	18(52.9%)		
	more than 16	2(22.2%)	0	7(77.8%)		
Health	Moderate		High			
Health stress	lower than 5 years	99(44.8%)	103(46.6%)	19(8.6%)	28.26	0.001
	6-10	32(28.6%)	74(66.1%)	6 (5.4%)		
	11-15	16(47.1%)	15(44.1%)	3(8.8%)		
	more than 16	1 (11.1%)	4(44.4%)	4(44.4%)		
Personality stress	Personality not source of stress		personality as a source of stress			
	lower than 5 years	69(31.7%)	149(68.3%)	3.1	0.36	
	6-10	30(26.3%)	84(73.7%)			
	11-15	8(22.9%)	27(77.1%)			
	more than 16	1 (11.1%)	8(88.9%)			





DISCUSSION

According to the results of the present study that aims to examine holistic stresses in infertile women and its association with demographic factors ,the mean score of perceived stress (in both positive and negative perceptions subscale) was more likely than other cases when stress factors were in both individuals. The results of the study by Ogawa et al on 83 infertile Japanese women showed the effect of two factors of age and male infertility on their psychological distress and women

whose husbands were infertile had significantly lower scores on psychological distress than women whose husbands were not infertile, the results of this study were inconsistent with those of the present study (Ogawaet al.,2011).

Sheiner et al recognize the reason for stress reduction in women with infertile husbands in Japanese society is that women acknowledge themselves to be responsible for infertility (Sheineret al.,2003). Moreover, the mean score of stress has been reported to be higher than feminine or masculine causes when the cause of infertility is unknown. Other results of this study showed that there was no significant difference in the stress of individuals in terms of infertility causes; in addition, a significant difference was observed in the individuals' stress scores in both life stress and health stress groups. In our study, the mean negative perception of stress was reported to be higher than other cases when infertility existed with unexplained causes. While positive perceptions of stress were reported to be higher than other cases when both couples were the causes of infertility. Abbey et al & Domar et al found that infertility with an unknown cause increases the risk of psychological distress. (Domaret al.,1992; Abbey et al., 1992). In Franco's study, infertile women show higher rates of psychological symptoms than their partners, especially in feminine causes and their irrationality, because women have a more important role in the treatment and it is natural that they are affected more (Franco et al.,2003). In another study by Domar, psychological distresses were higher in women with unknown cause of infertility(Domar et al.,2000).Eszter Cserepes et al also showed that women have higher stress scores than men(Eszter Cserepes et al.,2013). Herrmannet al& Burns' research also suggests that infertility is a major mental health problem for women while men generally suffer less psychological distresses(Herrmannet al.,2011; Burnset al.,2006). All the aforementioned results confirm the results obtained in the present study. Parallel to the results of the present study regarding the higher level of stresses in women, the results of many studies confirm the mentioned case(Petersonet al.,2012;Greilet al.,2010).Other studies on infertile couples also suggest that psychological symptoms are higher in women than in men(Fatoyeet al.,2008;Eren Bodur et al.,2013; Syiem1, Jayashankar Reddy.,2013; El Kissi et al., 2013). Having conducted a study on 124 infertile couples in Malaysia, Ramli et al found that with psychological distresses were significantly higher in women compared to men(Ramlietal.,2014). In analyzing the higher level of stress in women, experts have raised several reasons. Among them is that, women undertake various methods of backbreaking infertility treatments to maintain their positions and perhaps this fact makes them more vulnerable to various psychological traumas(Grudzenetal.,2011; Halk Sagligi & Celal Bayer Univ., 2011). Noorbala et al believe that the most important factors that put pressure and stress on infertile women are the reaction of other people to infertility, loneliness and difficult infertility treatments(Noorbalaet al.,2007). Other researchers stipulate that there are significant gender differences in the perception of the infertile person of himself, it means that infertile women compared with fertile men, have a more negative conception of themselves and consider themselves as less valuable and worthy of blame; even worse, they may lose their identity as a woman(Galhardoet al.,2010). Other research results indicate that the level of stress may vary in accordance with infertility duration and in this case, there is a significant difference in positive perceptions of stress on the basis of duration of infertility. Domar et al have reported most psychological distresses in the second and third years of infertility and this rate decreases after six years of infertility, also Lok et al & et alKee, like Domar, have asserted that duration of infertility affects the couples' stress level(Domaret al.,1992; Loket al., 2002;Keeet al., 2000).In a study by Ogawa et al, no direct relation between duration of infertility and psychological distresses has been found(Ogawa et al.,2011). Kousalya et al suggest that the levels of psychological distresses, such as stress, increase with increasing duration of infertility and this result is contrary to the results of this study that Ramezanzadeh et al also have confirmed (Kousalya et al.,2013; Ramezanzadeh et al., 2004b).

CONCLUSION

results highlights infertility has a significant impact on the infertile women's mental health. Mental health professionals and consolers can educate couples regarding the ineffectiveness coping strategies as well as the stress management technique and psychological approach while experiencing the stress of infertility. Also it is important these approach consider as an important medical treatment inside medical treatments.

Ethical aspects

The study protocol was approved by the Ethics Committee of the Jahrom University of Medical Sciences, Jahrom, Iran

Conflict of interest

The authors report no conflicts of interest. The authors alone are responsible for the content and writing of the paper.

Author Contribution

F.GH was responsible for writing of paper, final editing and data analysis. L.M was responsible for idea of title, writing of paper, editing the manuscript and data analysis. M. G was responsible for sampling and overview of the manuscript.

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