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Systematic Review Article

Emotional adjustment in infertile couples

Fatemeh Ramazanzadeh*[1] *M.D., Ahmad Ali Noorbala*[2] *M.D., Nasrin Abedinia*[1] *M.Sc., Mohammad Mehdi Naghizadeh*[3] *M.Sc.

1 Vali-e-Asr Reproduction Health Research Center, Imam Khomeini Hospital Complex, Tehran University of Medical Sciences, Tehran, Iran.
2 Psychiatric and Psychology Research Center, Roozbeh Hospital, Tehran University of Medical Sciences, Tehran, Iran.
3 Fassa University of Medical Sciences, Tehran, Iran.

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Abstract

Background: This study assessed emotional adjustment of infertile couples and the psychological outcomes of infertility (depression, anxiety, relationship and sexual problems, and personality disorders) in different phases of treatment. References used include studies which have been performed within the last two decades. The articles were invested on data bases at Pub med, Scholar, Google, Scpous and Amazon and key words include (infertility OR pregnancy OR depression OR anxiety OR psychology disorder OR marital satisfaction OR psychiatric & psychology interventions AND personality disorder or ….). Each one of them was used in abstract and keywords, according to articles selected which were published before 2006. Almost all of accessible articles were obtained, and other inappropriate articles were not considered.

Results: Results derived from most studies show that more than half of infertile people (women, men, and couples) learn to cope with this problem to some extent.

Conclusion: However, a significant percentage of people show clinical signs such as inability to adjust with the problem and inappropriate emotional reactions, which highlights the importance of psychological inventions and psychotherapy.

Key words: *Infertility, Emotional adjustment, Depression, Anxiety, IVF.*

Introduction

Infertility encompasses both medical and emotional problems. While physical medical improvement is significant (1), couples consider the emotional aspect as very stressful (2). For most couples, unsuccessful IVF or ICSI therapy mean an end to medical treatment. IVF is a multidimensional stressful problem; therapy alone lays the foundation for primary stress and is most probably associated with anxiety. Another unpredictable consequence of IVF therapy is the main stress factor, which most probably arouses feelings of anxiety (4). For this reason, during the last two decades, the psychological aspects of infertility and psychiatric interventions, which help come aside with the problem, have gained increasing importance. Infertility is a complicated and psychologically threatening and challenging crisis. This may be the reason why many authors have simulated the psychological consequences of infertility with general grievance reactions (5-7). Until 30 years ago, most researches on infertility were concentrated on the psychological differences between fertile and infertile women. There is much information about the psychological problems of infertile women, including Staber (1982) and Splack and Cura (1968) who found that infertile women attained higher neurotic scores in the Madzeli questionnaire as compared to fertile women (8). Later studies focused more on the psychological consequences

Corresponding Author:
Nasrin Abedinia, Vali-e-Asr Reproduction Health Research Center, Imam Khomeini Hospital Complex, Tehran University of Medical Sciences, Tehran, Iran.
E-mail: abedinia_nasrin@yahoo.com

of infertility than on personal differences between fertile and infertile women. The following study focuses on failure of emotional adjustment in respect to three main areas: Anxiety and depression, relationship and sexual problems, personality disorders, and psychological interventions.

Anxiety and depression

Reproduction and the desire of man to set up a family is one of the natural needs of humans and one of the important pillars of social life. Infertility not only has a reproduction aspect but mental and social aspects as well. In other words, psychological, physiological, environmental and interpersonal relationships can affect each other and infertility cannot be simply considered as organ malfunction, rather, other aspects are also important which require further attention. The prevalence of infertility varies in different parts of the world. In one study (Rayan *et al* 1995), the prevalence of infertility was estimated to be around 10%-15%, which means that one in every 6 couples throughout the world is faced with infertility which is psychologically threatening and emotionally stressful (9). This may be the reason why many authors consider the psychological consequences of infertility to resemble general grievance. In addition to facing problems in the body organs, infertile couples experience psychological problems such as depression, anxiety, aggression, guilt feeling, criticism, fright, feeling of discontent, jealousy, solitude, lack of self esteem, somatic complaints, obsession, interpersonal relationship difficulties, lack of confidence, feeling of being unwanted, lack of flexibility with their partner, and sexual dissatisfaction. Fredman *et al* (1985) showed that around 50% of women and 15% of men consider infertility as the most stressful experience in their lives. In addition, Dumber, Zater, Master and Fredman (1993) stated that around 63% of the subjects, who had experienced divorce, believed that infertility was a more stressful experience. Anxiety and depression are regarded as general consequences of infertility and they have a significant relationship with infertility. Another research shows that around 40.8% and 86.8% of infertile women have depression and anxiety respectively (5). Matsubayashi *et al* (2001) reported that depression is more common among infertile women as compared to fertile or pregnant women (10). The results of the studies performed by Newton (1990) and Wischmann (2005) showed that the prevalence of depression is higher among infertile women than infertile men and it causes loss of self confidence (11, 12). One of the largest studies, which were in the form of a review article, studied emotional adjustment of infertile women during the last 25 years (Varhak *et al* 2007). They selected 27 out of 706 studies which assessed emotional adjustment of infertile women towards fruitless IVF therapy. Results showed that the difference in emotional adjustment is mild at the onset of study, while unsuccessful treatment intensifies negative emotions like anxiety and depression, which persist after consecutive unsuccessful cycles. Overall, most women fail to satisfactorily adapt to IVF therapy. Nevertheless, a significant number of subjects show clinical emotional problems. Once IVF therapy results in pregnancy and negative emotional reactions begin to fade, the fact that stress caused by treatment is significantly related to fear of treatment failure becomes more evident (13-19). Varhak *et al* (2005) studied the effect of IVF therapy and its associated factors in a longitudinal study on 148 infertile patients and emotional adjustment prior to and six months after treatment was noted. Measured factors included anxiety, depression, personal characteristics, confrontation, marital relationship and social support prior to treatment. Results showed that anxiety and depression rates among women rose after unsuccessful and decreased after successful treatment. However, these rates did not vary after successful or unsuccessful treatment among males. There was no particular improvement among females six months after treatment failure. Follow-up showed that 20% of women had signs of anxiety and/or depression (3). Noorbala *et al* (2007) used Beck's questionnaire to study the prevalence of depression and the effect of psychiatric intervention on the rate of depression of 638 infertile couples (319 couples) in Vali-e-Asr Infertility Research Center. Findings showed that 48% of women and 23.8% of men suffer from various degrees of depression. Among the 48% of women, 30% suffered from mild, 12.5% from moderate, and 5.3% from severe depression and among the 23.8% of males, 16.6% suffered from mild, 4.7% from moderate and 2.5% from severe depression (20, 21). It seems that the prevalence of depression is higher in Iran as compared to other countries. The most important reason may be the importance of having a child in Iranian society. This study also showed that the prevalence of depression was two-fold among infertile women as compared to fertile women. The prevalence of psychiatric disorders was studied using the SCL-90-R test and Eysenck personality questionnaire (EPQ) in a comparative study between a group of 150 infertile women receiving treatment in the infertility clinic of Vali-e-Asr Infertility Research Center and 150 fertile women attending the gynecology clinic of Imam Khomeini Hospital. Results show that psychiatric disorders exist in 44% of infertile women and 28.7% of fertile women; this difference was significant in respect to interpersonal sensitivity, depression, phobia paranoid thoughts, and psychocitism and based on EPQ, fertile women were significantly more stable than infertile women (22). The fact that psychological disorders were twice as common among infertile women as compared to fertile women indicates the importance of conceiving in Iran. The higher rates detected in infertile women are in accordance with other studies (23-26). In another study, Ramazanzadeh *et al* (2003) studied the relationship between anxiety and depression with duration of infertility in 270 infertile women. Results showed that 40.8% and 68.8% of infertile women suffered from depression and anxiety, respectively. Furthermore, a significant relationship was found to exist between anxiety or depression and duration of infertility (5). The results derived from these studies, indicate the higher prevalence of psychological disorder especially depression and anxiety in infertile Women.

Relationship and sexual problems

Four types of interactions between sexual problems and infertility are stated in research literatures (Meyma van, 1993).

A. Sexual causes of infertility in males and females (vaginismus, impotence, premature ejaculation, failure of ejaculation).

B. Effects of tests and treatments given for infertility

C. Effects of infertility on sexual attention and prior vague feelings (blame, low self esteem, anger, and passive behavior).

D. Psychiatric and sexual effects in relation to pregnancy and delivery with the help of medical methods results in sexual separation of men and women, if the human body is thought of as a single machine (27).

Infertility is usually associated with marital problems and disputes. Many studies performed on infertile couples show that most disappointment is towards themselves and their marriage (28). Also, many other studies (Saleh *et al* 2003; Reid 2004; Nen *et al* 2005; Ozkan and Baisal, 2006; Ramazanzadeh *et al* 2006), have focused on the relationship between sexual problems and infertility (29, 30). The stress caused by infertility has direct effect on marital problems and it lowers sexual self-esteem, sexual satisfaction and frequency of intercourse. In addition, infertility-related stress worsens the relationship between couples both directly and indirectly through marital factors, health assessment, self-efficiency and love and affection between the couples and it has more detrimental effect on the quality of life of women as compared to their husbands (31). Infertile subjects state that their sexual relationship has become like a duty and compulsory deed rather than a joyful task. The sexual relationship therefore, inevitably becomes "sexual intercourse due to needs". The inability to reproduce arouses a feeling of sexual failure. In the study performed by Berger (1980) on 16 infertile couples, all of whom had male factor infertility, 11 of the male subjects reported that they had passed through periods of impotency and depression after being diagnosed as infertile (10). Ramazanzadeh *et al* (2006) studied 200 infertile couples and they compared the level of sexual satisfaction and sexual desire in males prior to and after being diagnosed with infertility. In another study performed by Lee *et al* (2001) in order to determine the effect of diagnosis of infertility on sexual and marital satisfaction and feelings of failure and depression, they studied 138 Taiwanese couples in whom the factor of infertility was dispersed a variable in both sexes (female factor infertility in 43 couples, and male factor infertility in 53 couples and both male and female factors in 21 couples). Results showed that amongst couples with both male and female infertility factors, women had less sexual and marital satisfaction as compared to their husbands. Also, women with female factor infertility had lower self esteem and they had feelings of sin and shame as compared to women with male factor infertility (33-34). Sir Golzari *et al* (2001) studied 30 infertile women who attended the Montazerieh Hospital in Mashhad in order to determine the prevalence of psychosexual problems and depression in infertile couples. Estimated correlation rate and Hamilton's classification scale showed that 96.7% of the infertile couples suffered from various degrees of depression. In addition, sexual function was significantly lower in these subjects as compared to normal women (35).

Personality disorders

In addition to studies that assess negative feelings (anxiety, depression) and communication and sexual dysfunction among infertile subjects, some studies deal with the effect of infertility on the personality of infertile subjects. Ramazanzadeh *et al* (2007) performed a study which compared the prevalence and predisposing factors involved in personality disorders among infertile and fertile women. Two groups of 150 fertile and infertile women were studied using Eysenk questionnaire. Results showed that more infertile women suffered from personality instability as compared to fertile women and this instability was more prevalent among infertile housewives than infertile working women. These findings are in agreement with those of Wishman *et al* (2001) and Lu *et al* (1995) (36-38). In another study, Amanati (2006) studied the quality of life and its associated factors in infertile women attending the Reproduction Health Research Center (n=147 subjects). Results showed that there is a significant relationship between the woman's quality of life and level of education, husband's level of education and employment status, history of treatment of infertility, pressurization by friends and family members to have children (39). Dafie *et al* (1998) studied the relationship between combating methods and personal characteristics or psychological health in infertile couples (358 couples) attending the infertility centers in Yazd City. Results showed that women used weaker confrontation methods as compared to men. In addition, a significant relationship exists between use of confrontation methods and mental health of infertile couples such that use of methods against their religion, active opposition, programmed comparison, prevention of sudden confrontation with problems, and positive redefinition are associated with mental health and use of denial methods, concentrating on feelings and showing their feelings, negative thinking, and superstitious thoughts, have association with poor mental health ($p < 0.001$) (40).

Psychological interventions

Different studies have shown the beneficial effects of psychiatric and psychological treatments not only in adapting to unsuccessful treatments but also in reducing stress and bringing about successful pregnancy. The rehabilitation of ones life after unsuccessful treatment for infertility is a cognitive model (Daniel, 2001) in which the infertile subject is assisted in trying their best for having children or in adapting to the condition of being childless. Studies show that knowledge before treatment of distress and acceptance of the probability of being left childless are factors which determine the emotional response which occurs in response to infertility treatment failure. Infertility specialists can help improve the process of acceptance of such situation by discussing the problems of infertility with couples so that they can handle the condition in a better way such as the opportunities that exist in case of treatment failure (Buauine *et al* 2001, Kontenich *et al*, 2002). Clinicians must also help couples in becoming emotionally ready for facing unsuccessful treatment in case it occurs. Psychocognitive teachings such as opening the situation for infertile couples can probably help them in overcoming and controlling the natural emotional distress brought about by treatment failure (41-43). Other researchers have also pointed to the importance of psychocognitive intervention in preparing for pregnancy. The results of studies performed by Damer *et al* (2000), Noorbala *et al* (2007), Terziogla (2001) and Newton *et al* (1992), which show the effect of psychological intervention and psychotherapy on psychiatric disorders and the rate of success of pregnancy among infertile couples, show that the intervention group had lower anxiety and depression and higher pregnancy and marital satisfaction rates (44-48). Other reports show that psychocognitive therapy (behavioral, cognition and psychotherapy) during the process of diagnosis and treatment, especially prior to IVF therapy and pregnancy testing, can result in higher rates of pregnancy and the use of psychological treatment can increase the chance of pregnancy even after six months follow-up (49-52). Regarding the results derived from these studies, which indicate the higher prevalence of psychological disorders in infertile women we propose the followings:

1. Gynecologists should be made aware about the prevalence of psychiatric and personality disorders among infertile women and the necessity of referring patients to psychologists or psychiatrists.
2. Counseling methods, especially supportive psychotherapy, should be considered for infertile women in order to improve their mental health and increase their chance of conceiving.
3. The nature of infertility mandates all infertility treatment centers to setup psychiatric counseling centers in order to facilitate the close teamwork of gynecologists and psychologists.
4. The media should make the public, especially infertile women, aware about the importance of combined use of psychotherapy and routine treatments of infertility. This may have an important role in improving the quality of life in infertile patients.
5. Family members of infertile women should be aware about the importance of morality and the help and support they can give to these individuals to decrease the mental stress.
6. The Social Welfare Society and other related centers should cooperate in order to facilitate the process of child adoption in these individuals.

Table I. Studies related to psychology disorder in fertile and infertile groups.

Reference	Population size	Duration of measurements	Measurements	Results
Ozkan and Baysal (2005) Turkey	n = 50 infertile women n = 40 fertile women	Last treatment during past 3 years	Anxiety: STAI; Depression: BDI Madzelli marital questionnaire	Descriptive analysis: anxiety, depression and signs of psychopathology higher than control group. Control group: sexual relationship is more negative than treatment period
Verkak *et al* (2001, 2005) Holland	n = 65 unsuccessful treatments n = 85 successful treatments	T_1 : prior to cycle 1 T_2 : 4 weeks after last cycle T_3 : 6 months after last cycle	Anxiety: STAI; Depression : BDI	Unsuccessful treatment of Anxiety: $T_1 > T_2 = T_3$; Anxiety : $T_1 > T_2 = T_3$ successful treatment of Anxiety : $T_1 < T_2 = T_3$;Depression $T_1 < T_2 = T_3$; MANOVA
Halmstead *et al* (2004) Sweden	n=55 women with IVF n=40 women without IVF	T_1 : first pregnancy T_2 : 2 months after treatment T_3 : 6 months after treatment	Parental stress: Swedish parental stress questionnaire	No difference between groups with parental stress
Seyed Sejo *et al* (2002) Sweden	n=110 pregnant women after IVF therapy n = 180 normal pregnancies	T_1 : 15 – 20 weeks gestation T_2 : 12 months after treatment	Parental stress and satisfaction with life General health: GHQ. Depression: BDI	Wanted consequences more in women with IVF as compared to pregnant women after normal pregnancy
Luke *et al* (2002) China	n= 372 unsuccessful treatments	T_1 : prior to IVF therapy T_2 : 4 weeks after IVF therapy	General health: GHQ Index of satisfaction with life	Unsuccessful treatment Depression $T_1 > T_2$; General health: $T_1 > T_2$; ANOVA
Hamerberg *et al* (2001) Australia	n= 108 unsuccessful treatments n=121 successful treatments	T_1 : 2.5 - 3.5 years after IVF therapy	Anxiety: STAI; Depression : BDI	Satisfaction with life more common among women with successful IVF therapy as compared to women with unsuccessful IVF therapy. No difference in GHQ was noted
Clack and Greenfield (2000), USA	n = 74 pregnant women after IVF therapy n = 40 normal pregnancies	T_1: 12 weeks gestation T_2: 28 weeks gestation	Anxiety: STAI; Depression : BDI	No differences in anxiety and depression between the two groups at 12 weeks and 28 weeks gestation
Slad *et al* (1997) UK	n = 14 unsuccessful treatments n = 42 successful treatments	T_1: prior to first cycle T_2: 6 months after last cycle Mood: POMS Personality disorders : EPQ	Anxiety: STAI; Depression : BDI	No statistical test was available for recurrent measurements except Mann Whitney U test
Ramazanzadeh *et al* (2003) Iran	n=150 infertile women n=150 fertile women	during infertility treatment period		Infertile women are less stable than fertile women. Infertile housewives are less stable than infertile working women
Noorbala *et al* (2005)	n=70 infertile couples (intervention group) n = 70 infertile couples (control group)	during infertility treatment period	Depression BDI Holmz Raher classification scale Depression: BDI Ketl Anxiety test	Depression was more frequent among infertile women than men. Psychiatric treatment and psychotherapy proved beneficial in improving depression
Ramazanzadeh *et al* (2003) Iran	n=370 infertile women	during infertility treatment period	Anxiety: STAI General health:HSC	Anxiety and depression were related to duration of infertility
Veyser *et al* (1994) Holland	n=53 unsuccessful treatments n=12 successful treatments	T_1: prior to first cycle T_2: 4 weeks after last cycle	General health: SCL 90	Unsuccessful treatment. Anxiety:$T_1 = T_2$ Depression : $T_1 < T_2$ Successful treatment of anxiety and depression : $T_1 = T_2$
Van Balen & Trimboscamper (1993) Holland	n = 108 women with prolonged infertility	Last treatment during the past 2 years		Wilkacson paired test descriptive analysis: anxiety and depression higher than normal? 50% of women continued the treatment Emotional adaptation in infertile women
Heinz *et al* (1992) Australia	n= 100 unsuccessful treatments n=73 control group	T_1: prior to treatment cycle T_2: 4 weeks after cycle	Anxiety: Anxiety scale Mischelle. Krankit and Moose	Unsuccessful treatment of depression: $T_1 < T_2$; ANOVA
Newton *et al* (1990) Canada	n= 187 unsuccessful treatments n = 26 successful treatments	T_1: 3 months before cycle T_2: 4 weeks after first cycle	Anxiety: STAI Depression: BDI	Unsuccessful treatment: increase in anxiety and depression successful treatment: No data exists; MANOVA
Freeman *et al* (1987) USA	n = 87 women after IVF failure n=37 women with normal pregnancy n=37 pregnant women after IVF therapy	Last treatment during the past 6-32 months	general health: HSC	Depression more frequent in unsuccessful treatment group. Personality questionnaire. MMQ Madezli Marital questionnaire

BDI: Becks depression questionnaire (Beck *et al*, 1961) GHQ: General Health Questionnaire (Goldberg, 1972). HSC: Hopkins Symptomatic check list (Derogatis *et al*, 1974) SCL – 90 symptomatic check list (Derogatis *et al* 1973) STAI Speiberg Tense Anxiety questionnaire (Spielberg, 1983) POEMS partial mood (MC Nayer *et al* 1971) EPQ Eiseng.

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