

Marital adjustment and emotional symptoms in infertile couples: gender differences

Verda TÜZER¹, Altuğ TUNCEL², Sema GÖKA³, Süheyla DOĞAN BULUT¹,
Fatih Volkan YÜKSEL⁴, Ali ATAN², Erol GÖKA¹

Aim: To determine the psychosocial and demographic factors related to marital adjustment and emotional symptoms in infertile couples according to gender differences.

Materials and methods: The study sample, consisting of 60 primary infertile couples, was assessed using the Beck Depression Inventory, State and Trait Anxiety Inventory, and Dyadic Adjustment Scale. The scores derived from men and women were compared according to infertility factor. Multiple regression analysis models were used to explore the linkages between emotional symptoms and marital adjustment.

Results: Statistically significant gender differences were noted in affectional expression and sexual satisfaction domains of the Dyadic Adjustment Scale ($P < 0.05$). Our analyses showed that various aspects of marital adjustment have predictive power on anxiety and depressive symptoms of infertile men, especially when the infertility is due to male factor.

Conclusion: Results of this study emphasize the importance of psychological and sexual counseling in the course of infertility treatment.

Key words: Marital adjustment, male infertility, anxiety, depression, psychological stress

İnfertil çiftlerde evlilik uyumu ve duygusal belirtiler: Cinsler arası farklılıklar

Amaç: Bu çalışmanın amacı infertil çiftlerde evlilik uyumu ve duygusal belirtilerle bağlantılı psikososyal ve demografik faktörler bakımından kadın ve erkekler arasındaki farklılıkları belirlemektir.

Yöntem ve gereç: Birincil infertilitesi olan 60 çiftten oluşan çalışma örnekleminiz Beck Depresyon Envanteri, Durumluk ve Sürekli Kaygı Envanteri ve Çift Uyum Ölçeği ile değerlendirildi. Erkekler ve kadınlardan ayrı ayrı elde edilen puanlar infertilite faktörüne göre karşılaştırıldı. Duygusal belirtilerle evlilik uyumu arasındaki bağlantıları belirlemek için çoklu regresyon analizi modelleri kullanıldı.

Bulgular: Çift Uyum Ölçeğinin duyguların ifadesi ve cinsel doyum alanlarında cinsiyetler arasında istatistiksel açıdan anlamlı farklar gözlemlendi ($P < 0,05$). Sonuçlar, özellikle infertilite erkek faktörüne bağlı olduğunda evlilik uyumunun çeşitli alanlarının, infertil erkeklerdeki anksiyete ve depresif belirtiler üzerinde yordayıcı etkisi olduğunu ortaya koymaktadır.

Sonuç: Bu çalışmanın sonuçları infertilite tedavisi sırasında psikolojik ve cinsel danışmanlığın önemini vurgulamaktadır.

Anahtar sözcükler: Evlilik uyumu, erkek infertilitesi, anksiyete, depresyon, psikolojik stres

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¹ First Department of Psychiatry, Ankara Numune Training and Research Hospital, Ankara - TURKEY

² Third Department of Urology, Ankara Numune Training and Research Hospital, Ankara - TURKEY

³ First Department of Psychiatry, Dışkapı Yıldırım Beyazıt Training and Research Hospital, Ankara - TURKEY

⁴ Department of Psychiatry, Antalya Manavgat State Hospital, Antalya - TURKEY

Correspondence: Verda TÜZER, UNFPA, Birlik Mahallesi, 2.Cadde No : 11, Çankaya, Ankara 06610 - TURKEY

E-mail: verda65@yahoo.com

Introduction

Infertility or the inability to conceive a pregnancy after 1 year of regular sexual relations without the use of contraceptives affects up to 1 in 6 couples of childbearing age (1). Infertility prevalence increases with age, especially in women. In Turkish cohort, female and male factors in infertility have both been reported to be as prevalent as 40% each, while concurrent male and female factors have been reported in 20% of the cases (2). Infertility has been reported as an important stressor and life crisis in different cultural settings (3-5). When a couple discovers that they may not be capable of having biological children, it is stressful, unexpected, and often a life-changing experience (6). Finding a solution to a fertility problem is often difficult, time-consuming, and expensive as well.

The relationship between emotional distress and infertility has been studied by several authors (7,8). The most frequently reported psychiatric symptoms in infertile couples are anxiety and depression (9-11). In most studies women have been on the focus and it is emphasized that men are less prone to display psychiatric symptoms due to cultural and social reasons (12,13). Although they are considerably fewer in the literature, studies focusing on problems of the infertile couples have reported that sexuality (14), marital adjustment (6) and self-esteem (15) have been negatively affected.

Social, psychological, and infertility-related issues as well as gender may be of relevance in determining the impact of infertility on marital relationships. Several studies have agreed that women experience infertility as being more stressful than men. Depression, anxiety, and health complaints are more commonly seen in infertile women than men (16). On the other hand, it has been reported that the marital relationship is not affected if the infertility stress is shared among the partners (1), and marital satisfaction is bigger if the desire to become a parent is equally shared among the partners (11). The emotional responses could be more negative if the cause for infertility stems from the male partner (13).

The limited number of studies on infertile couples in Turkey report that anxiety and depression are more frequent in women and the discord in marital and

sexual relationships are linked to infertility (17); women report emotional troubles and receive social support more frequently, while men have more difficulties regarding sex and sufficient support ameliorates emotional symptoms (18). Anxiety and depression are reported to be higher in infertile women when they are faced with negative attitude of their partners and partners' families (19).

Although infertility is stressful for most individuals, it is clear from the literature that infertility is more devastating for some individuals than for others. Stress should be high only when the situation is perceived as harmful or threatening, and the individual feels she or he has insufficient resources to cope effectively (20).

We aimed to explore the interaction between the marital relationship and the emotional distress aggravated by infertility, and determine possible cultural and gender specific differences. We hypothesized that the women in married couples with primary infertility experience deeper emotional distress compared to men and their emotional situation worsens when male factor is linked to the infertility. Furthermore, we examined the levels of depressive symptoms, anxiety, and marital adjustment in both sexes.

Materials and methods

Procedures

The sample for this study was comprised of women and men, diagnosed with infertility, who were referred to a teaching and research hospital urology clinic for evaluation of the infertility factor. Methods of data collection were reviewed and approved by a review board for research involving human subjects. In addition, prior to data collection, written informed consent was obtained from all study participants.

Data were collected over a 4-year period (2003-2007). Couples were asked to complete the self-rating questionnaires separately. Study participants needed to complete each of all 3 questionnaires to be included in the present study.

A total of 120 individuals (60 couples) completed the materials. Only participants with primary infertility (i.e. no children in prior or current

relationships) were included in the study. Difficulties in understanding the study tools or inquiries to study team about the questions were defined as exclusion criteria for the study, which was mainly stemming from low educational and socioeconomic status of some of the study participants. Eleven couples were excluded due to incomplete answers, refusal to participate in the study, or difficulties in completing the questionnaires.

Instruments

Beck Depression Inventory (BDI) and Spielberger State and Trait Anxiety Scales (STAI-S and STAI-T) were used to assess the individual emotional symptoms. Dyadic Adjustment Scale (DAS) was used to assess the marital adjustment status of the couples.

The emotional load due to infertility has been frequently iterated in the context of anxiety and depressive symptoms in the literature. The selection of BDE and STAI-S/T for assessing the 2 symptom clusters was based on this observation.

Dyadic Adjustment Scale (DAS): The DAS is a 32-item scale developed by Spanier (21) and measures the overall adjustment individuals experience within their relationship. The DAS contains 4 sub-scales: Dyadic Satisfaction (marital satisfaction, the amount of quarrels, trusting one another, general happiness in a relationship), Dyadic Cohesion (having discussions together, having interests in common), Dyadic Consensus (agreement on spending spare time, financial matters, general view of life), and Affectional Expression (sexual desire, expressions of love). The spouses were asked to assess their marital relationships on a 6-point scale ranging from 0 to 5. High total and subscale scores indicate positive appraisal of the marriage. Mean overall scores of 100 or greater typically indicate well-adjusted couples. The measure has demonstrated good internal consistency and acceptable content validity, criterion-related validity, and construct validity (21). Reliability and validity study of the Turkish version was conducted by Fisiloglu and Demir (22). The DAS provides a reliable and valid measure of marital adjustment for a Turkish sample (internal consistency reliability 0.92; split-half reliability coefficient 0.86).

Beck Depression Inventory (BDI): The Beck Depression Inventory (23) was used to assess

participants' severity of depression. In accordance with the testing guidelines, a score of 10 or greater indicates the presence of depressive symptoms. Reliability and validity study of the Turkish version used in this study was carried out by Hisli (24).

Spielberger State and Trait Anxiety Scale (STAI-S/T): Spielberger's (25) State and Trait Anxiety Scale comprises 40 questions. The first 20 questions assess the anxiety level of the individual at a given moment and the resulting score is labeled as the state anxiety. The second 20 questions measure the general anxiety inclination of the individual and the resulting score is labeled as trait anxiety. In both subscales, total scores below 42 are interpreted as normal while scores exceeding that are regarded as an indication of anxiety. STAI-S was used to measure the anxiety level of the infertile individual at the time of seeking for medical help, while STAI-T was used to measure the longer-term stressor effects of infertility and the individual's tendency towards anxiety. Reliability and validity study of the Turkish version was completed by Oner and LeCompte (26).

Data analysis

This study used quantitative statistical methods to answer the proposed research question. Independent samples Student's t-test, Pearson's chi-square, and stepwise linear regression analysis were used for statistical analysis.

Results

The sociodemographic characteristics of the sample are given below. Mean length of marriage was 5.58 ± 4.28 years and mean duration of infertility was 3.29 ± 3.21 years for the study couples. There were no significant differences between men and women regarding age or level of education, though men generally had reached a higher educational level (Table 1).

Assessment of the causes of infertility showed that in the study group, 35% of the infertility cases were attributable to women, 15% of the cases were idiopathic (e.g. unexplained) and 55% were attributable to men (e.g. low sperm count). Additionally, 5% of the cases had more than one cause for infertility.

Table 1. Sample characteristics.

	Men (n = 60)	Women (n = 60)	t	dF	P
Mean age	32.72 ± 5.88	30.96 ± 6.27	1.586	118	>0.05
Mean years of education	10.58 ± 3.82	9.73 ± 4.27	1.149	118	>0.05

Initially the emotional symptoms and marital adjustment status of the whole group was examined. Mean scores of women and men derived from BDI, STAI-S/T, and DAS are compared in Table 2.

As seen in Table 2, there were no significant differences between men and women with regards to emotional symptomatology or marital adjustment. However, statistically significant difference was observed ($P = 0.02$) between men and women in their perception about their sex lives. According to the responses of the participants to the last question in BDI, 43.6% of women state that their interest in sex had decreased, while only 20% of men confirmed the change.

Similar comparisons were repeated after selecting the subset of couples with male infertility factor (Table 3). Within this subset, a significant difference was observed between men and women, in the Affectional Expression subscale of the DAS ($P = 0.04$).

When the same analyses were conducted on the subset of couples without male infertility factor, no statistically significant differences were observed between men and women in any of the variables assessed.

Similar comparisons were made between men with male infertility factor and men without male infertility factor, as well as women with male infertility

Table 2. Gender differences in depression, anxiety, and marital adjustment.

	Men (n = 60)	Women (n = 60)	t	dF	P
BDI	8.25 ± 7.67	10.33 ± 7.81	-1.471	118	>0.05
STAI-S	38.75 ± 10.97	40.72 ± 10.44	-1.007	118	>0.05
STAI-T	38.60 ± 10.30	41.14 ± 8.45	-1.477	118	>0.05
DAS Marital Adjustment score	119.89 ± 14.44	117.97 ± 13.79	0.745	118	>0.05
DAS Satisfaction subscale	40.35 ± 5.08	40.87 ± 5.19	-0.555	118	>0.05
DAS Cohesion subscale	15.87 ± 5.49	15.24 ± 4.37	0.695	118	>0.05
DAS Consensus subscale	53.82 ± 8.15	52.24 ± 7.14	1.129	118	>0.05
DAS Affectional Expression subscale	10.26 ± 1.98	9.81 ± 2.22	1.172	118	>0.05

Table 3. Gender differences in depression, anxiety, and marital adjustment among couples with male infertility factor.

	Men (n = 33)	Women (n = 33)	t	dF	P
BDI	7.50 ± 5.98	10.38 ± 8.14	-1.638	64	>0.05
STAI-S	37.91 ± 10.23	40.52 ± 9.61	-1.068	64	>0.05
STAI-T	38.86 ± 9.98	41.21 ± 9.08	-1.001	64	>0.05
DAS Marital Adjustment score	119.21 ± 11.86	118.10 ± 13.03	0.362	64	>0.05
DAS Satisfaction subscale	40.84 ± 4.88	41.76 ± 5.91	-0.690	64	>0.05
DAS Cohesion subscale	15.15 ± 6.19	15.65 ± 4.67	-0.370	64	>0.05
DAS Consensus subscale	53.65 ± 8.05	52.30 ± 6.70	0.741	64	>0.05
DAS Affectional Expression subscale	10.40 ± 1.50	9.35 ± 2.27	2.217	64	0.04

factor and women without male infertility factor. No statistically significant differences were observed among any groups assessed as such.

In order to better understand the interactions between emotional symptoms and marital adjustment in infertile couples, a series of stepwise multiple regression analyses were performed. In each analysis, scores derived from 3 scales (BDI, STAI, and DAS) and personal variables, such as age, length of

marriage, duration of infertility treatment, was entered into the regression model as independent variables. The dependent variable was rotated among BDI, DAS, and 2 subscales of STAI in each discreet analysis. Statistically significant results of the regression analyses are presented in Table 4.

Our findings show that, when the infertility is due to male factor, DAS and its subscale scores are not significant predictors of emotional symptoms in men

Table 4. Results of the stepwise multiple regression analyses (n = 120).

Couples with male infertility

Men				
Dependent Variable	Predictor	Beta	r2	P
STAI-S	BDI	0.874	0.850	0.001
	Duration of treatment	0.348	0.850	0.05
STAI-T	BDI	0.759	0.576	0.01
BDI	STAI-S	0.729	0.729	0.02
Women				
Dependent Variable	Predictor	Beta	r2	P
STAI-T	BDI	0.850	0.845	0.001
	DAS Affection Exp.	0.311	0.845	0.04
BDI	STAI - T	0.865	0.749	0.001

Couples without male infertility

Men				
Dependent Variable	Predictor	Beta	r2	P
STAI-S	BDI	0.480	0.922	0.004
	DAS	1.160	0.922	0.005
	DAS Consensus subscale	-1.760	0.922	0.009
STAI-T	BDI	0.642	0.868	0.002
	DAS Consensus subscale	-0.478	0.868	0.009
BDI	STAI - T	0.447	0.844	0.04
	Age	-0.558	0.844	0.018
Women				
Dependent Variable	Predictor	Beta	r2	P
STAI-S	DAS Satisfaction subscale	-0.801	0.641	0.005
STAI-T	BDI	0.905	0.889	0.001
	Duration of treatment	-0.411	0.889	0.02
DAS	BDI	-0.829	0.687	0.006
BDI	STAI-S	0.931	0.911	0.001
	Length of marriage	-0.372	0.911	0.02

or women, except for the affectional expression subscale scores, which significantly predict the trait anxiety in women ($\beta = 0.311$, $P = 0.04$). On the other hand, when the infertility is not due to male factor, both DAS scores and the consensus subscale score had a predictive power on state anxiety in men ($\beta = 1.160$, $P = 0.04$, and $\beta = -1.760$, $P = 0.009$, respectively) while satisfaction subscale had predictive power on anxiety in women ($\beta = -0.801$, $P = 0.005$). In the same group, age was a significant predictor of depressive symptoms in men ($\beta = -0.558$, $P = 0.018$) while marriage duration had predictive power in women ($\beta = -0.372$, $P = 0.023$). The tested variables in most cases explained over 80% of the variance in predicting the emotional symptoms (i.e. anxiety and depression scores).

Discussion

We studied marital adjustment and emotional distress in infertile couples. Studies on infertile couples in the literature report mixed results about one of the indicators of emotional distress, namely, the frequency of depressive symptoms. While the depressive symptoms were found to be more frequent in women in some studies (6,18), others reported that depressive symptoms in women decreased when infertility was due to male factor (14) or there was no difference in emotional response of women whatever the reason for the infertility was (13). We found no statistically significant difference between men and women with regards to frequency of depressive symptoms. The finding was similar when infertility was due to male factor, as well. However, it should be noted that regardless of the cause of infertility, women usually are subject to more invasive interventions than men during the course of infertility treatment. Therefore, women may be prone to emotional responses, such as heightened anxiety or depression, due to invasiveness or adverse effects of the treatment.

Mean scores indicating state and trait anxiety in both men and women were at normal levels regardless of the cause of infertility. Some studies claim that anxiety levels do not differ among men and women according to the cause of infertility (18) while others report higher levels of anxiety among women (16,27). Our findings suggest that, when the infertility is due

to male factor, the anxiety encountered during the initial assessment process (state anxiety) increases significantly in proportion with the duration of treatment ($P < 0.05$), while this is not the case for women. This may be because the repeated procedures, such as sperm collection, might cause an increase in treatment-related anxiety in men; while women experience less anxiety as the treatment duration is extended since they feel less threatened about the invasiveness and adverse effects of the treatment because they get used to them through repeated exposure. On the other hand, the increase in anxiety as the treatment is prolonged in men with male factor may be because men attribute greater importance to the problem, becoming part of it. Prolonged infertility and repeated experience of treatment failure are reported to be important risk factors in predicting distress (28). Furthermore, we found that the depressive symptoms in both men and women predict heightened anxiety experienced during infertility treatment ($P < 0.01$). Cost of the infertility treatment and the number of repeated procedures have also been reported as stress related variables in the course of infertility (20).

When male factor is not the cause for infertility, the state anxiety was found to increase parallel to marital adjustment. This may indicate that men feel more concern about marital processes instead of infertility related issues, when the cause is not related to them. Marital satisfaction has been reported to improve in relation to decreased infertility related stress (3). On the other hand, although infertility related stress decreased in men using distancing as a coping strategy, the marital adjustment declined as well. Distancing as a coping strategy might decrease anxiety by causing a sense of less connectedness and cohesion with their partners, but this causes a decline in marital adjustment as well. The direct influence of decreased marital adjustment on the lessened anxiety of men in our study might be due to men's tendency to detach themselves from the infertility predicament, when the infertility was not due to male factor, consigning full responsibility to their partners. The increase in the depressive symptom levels in women linked to lessened marital adjustment, when infertility is not due to male factor might support this hypothesis.

The men without male factor in the study reported decrease in both state and trait anxiety in proportion with the increased perception of dyadic consensus. Agreement on spending spare time, financial matters, and general views of life are among domains covered under the heading of dyadic consensus (21). Turkish men are traditionally expected to be more predominant in decision making within marital relationships and the lack of consensus on such issues might cause increased levels of anxiety, while they do not feel the infertility as their problem – at least compared to the men with male infertility factor. In a study conducted using a semi-structured interview guide, the gender identity of the men was found to be affected by the fear of not being able to fulfill the traditional male role (13). Furthermore, men have a tendency to mix up potency and virility, which makes them prone to interpret male factor in infertility as sexual impotence. When the infertility is not due to male factor, the inability to fulfill the expected gender role is closely linked to not being a satisfactory marital partner (13).

The mean marital adjustment scores in our study were supportive of the studies emphasizing that marital satisfaction is high in infertility (6,8). However, the marital adjustment of couples is reported to decrease after the 3rd year of infertility treatment (28). Another possibility to consider would be the propensity of the couples to reflect their marital adjustment better than it is, to leave a good impression on the treatment team.

Lack of difference between men and women with regards to marital adjustment scores was in accordance with the current literature (12). In a study on subjects presenting to an infertility clinic for the first time, no gender difference was observed in marital and sexual adjustment. It was emphasized that this finding might change in the course of the treatment (12). However, the mean duration of infertility was longer in our study and the marital adjustment seemed not to be affected from that. On the other hand, men scored significantly higher in the affectional expression domain of the DAS in couples with infertility due to male factor ($P < 0.05$), while women displayed increased levels of trait anxiety in proportion with higher scores in the same domain (i.e. sexual desire and expressions of love).

Considering that more women reported decrease in their sexual desires in our study compared to men, the increased sexual demands of men linking reproduction directly with sex and the lack of adequate response by women to their demands might have caused the women to contemplate negative consequences of their loss of interest in sexuality, thereby increasing their anxiety. In other words, women might feel that in addition to the infertility that might be construed as their fault, their expressed loss of interest in sexuality could be a major source of distress.

We found that the emotional symptoms in both women and men were related to decreased marital adjustment, when the infertility was not due to male factor. One possible reason for the heightened anxiety in women might be their blaming themselves for the lessened satisfaction about the relationship, as well as the infertility itself. Studies on Turkish group behavior have noted the value of fertility and having children, especially male children in the Turkish society. Fertility is considered as principal obligation of the women in all circumstances (29).

Various forms of sexual distress have been reported in infertile couples in the literature. One third of the infertile couples in one study reported that their sex lives had suffered during the infertility treatment (30) while in another study the sexual stress in infertile males was linked with performance anxiety (14). In our study, the interest in sexuality as measured by the last question of the Beck Depression Inventory showed that women had a statistically significant loss of interest in their sexual lives compared to men ($P < 0.05$). This may also be due to social and cultural aversion of men for disclosing their psychiatric symptoms while women may talk about their problems more easily.

The fact that most of the couples in our study had been under infertility treatment for over 3 years might have caused increased show of affection to partners, especially in couples with male factor infertility. The men's display of affection to partners could be interpreted as their effort to ease their burden since fertility is frequently seen as women's responsibility and the social pressure is on the women even when the infertility is due to male factor. This would be in line with the fact that infertility helps increase the

marital adjustment. Another possibility is men's increasing their show of affection to their partners especially in male factor infertility, because of the anxiety related to their sexual performance or they might be striving to present themselves in a better condition than the reality in a self-rated questionnaire.

This study had a number of limitations that might have influenced the results we have reached. First of all, the sample consisted of couples with primary infertility at different phases of their treatment process. Although a large number of them had been under prolonged treatment, the group was not homogenous with regard to the treatment phase. There was a little overlap between the male and female factor infertility groups (some couples had more than one factors) that might have a confounding effect. Moreover, using self-rating questionnaires for the assessment necessitates both self-awareness and willingness to report one's experience. Underreporting or misrepresentation might be possible because of minimization or denial of the facts.

The duration of the treatment process and the number of tries to overcome infertility might have a predictive effect on the emotional symptoms of the couples. Therefore, it would seem important for the studies examining the psychological factors in the infertility to target a homogenous group with regard to the duration of treatment and the number of tries. Furthermore, it might be relevant to establish control groups in future studies. Couples successfully completing a full-term pregnancy, couples with high-risk pregnancies or intrusive medical problems, or samples of couples that have not started treatment yet

or have completed a given time under treatment could be among possible target groups.

Newton et al. (3) have pointed that using self-rating assessment tools developed for determining anxiety and depression in general psychiatric patients in the absence of infertility-specific tools might be inadequate for measuring infertility related stress. On the other hand, studies assessing fertility-related stress have reported conflicting results since infertility is a multi-faceted life event and self-rating questionnaires can introduce bias into the assessment. Consequently, developing tools to measure infertility-related stress, providing counseling to couples on marital relationship and sexuality in infertility, and establishing the long-term effect of increasing affectional expression in the marriage to the treatment process could be important steps to take in clarifying this complex life experience.

We have tried to highlight how men and women referred for infertility treatment perceive their marital adjustment and their emotional responses to infertility, looking for any gender differences in this process. Our findings suggest that infertile men perceive stronger affectional expression in their marital relationship with their partners. On the other hand, when the infertility is not due to male factor, anxiety in men is linked to marital adjustment while marital adjustment in women is linked to depressive symptoms. Therefore, it might be relevant to emphasize psychological and marital support during infertility treatment, especially dealing with male factor in infertility considering that sexual and marital stresses play important roles in the course of infertility treatment.

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