# Sexual dysfunction in infertile couples: evaluation and treatment of infertility

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## Abstract

**Objective:** To evaluate the diagnostic and the predictive value of Arizona Sexual Experience Scale among primary infertile couples regarding sexual dysfunction.

**Methods:** The cross-sectional and prospective pre, post study comprising primary infertile patients was carried out at Bulent Ecevit University Hospital, Zonguldak, Turkey. Fifty consecutive primary infertile couples not treated previously were investigated between 2003 and 2007 for the presence of sexual dysfunction by a psychiatrist. Arizona Sexual Experience Scale scoring was self-administered to determine sexual dysfunction among couples before treatment and also 3 months after the initiation of the treatment.

**Results:** Pretreatment mean values of the index parametres in both women and men were significantly increased after treatment. Statistically significant positive correlation was observed between pre- and post-treatment total scores in both women (r=0.83; p<.001) and men (r=0.92; p<.001). Receiver operating characteristic curve analyses revealed optimum cut-offs of pre- and post-treatment scores in women were were >14 (Sensitivity: 57%; Specificity: 90%) and >13 (Sensitivity: 83%; Specificity: 93%), respectively. Pre- and post-treatment scores in men were >10 (Sensitivity: 65%; Specificity: 61%), >11 (Sensitivity: 83%; Specificity: 62%), respectively. Binary logistic regression analyses revealed women's pre-treatment and post-treatment scores as a significant factor for prediction of sexual dysfunction independent of sociodemographic factors (p=0.001 and p=0.001, respectively).

**Conclusion:** Evaluation and treatment of infertility is an important risk factor for sexual dyfunction. Pre- and post-treatment Arizona Sexual Experience Scale score could be used as a screening test for sexual dysfunction and might be used to decide pre/post-treatment consultation of couples with a specialist.

**Keywords:** Infertility, Sexual dysfunction, Arizona Sexual Life Inventory, ASEX. (JPMA 64: 138; 2014)

## Introduction

Infertility as a medical and social issue is an important stress for couples.[1] Evaluation and treatment of infertility with extensive laboratory work-up, serial follow-up ultrasonographies, strict coital rules, unsuccessful cycles could have detrimental effect on sexual life of couples. Previously it has been reported that health problems, loss of self-esteem, feeling akin to mourning, threat, sexual distress, depression, guilt, anxiety, frustration, emotional distress and marital problems are all associated with infertility.[2] Moreover, emotional status is suggested to have a role in infertility etiopathogenesis and success.[3,4] Several studies have also demonstrated that anxiety has a negative impact on fertility.[5]

Sexual problems tend to remain unknown unless purposely asked about it. A history of problems related to sexual adjustment, unusual frequency of coitus may serve as warning signs of possible sexual problems.[6] Infertile couples with sexual dysfunction are in a difficult situation: infertility might be painful to accept, but disclosing the sexual dysfunction is far more distressing and embarrassing. Also infertility is absolutely blamed on the women and men[7] when the situation of childlessness is culturally defined differently. Actually, couples not having a child are called 'sterile' in Turkey. Turkish women bring prestige and find security in their husband's home only after achieving motherhood in most parts of Turkey. Generally, infertile men feel that not having a child is a blemish on their male identity and male sexuality.[8]

It is reported that routine questioning leads to masking of most of the sexual problems, especially in women.[9] Therefore, objective assesment of sexual problems in infertile couples is required. Arizona Sexual Experience Scale (ASEX) is a valid and reliable scale to determine the presence and severity of sexual dysfunction.[10] To the best of our knowledge there is no study that evaluated the using of ASEX in infertile couples. Less is known about how Turkish couples with sexual dysfunction (SD) face their situation, and even less about the effects of infertility

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treatment on sexual dysfunction. The aim of this study was to evaluate sexual dysfunction during a 3-month treatment in infertile couples, and to discuss the effect of treatment on sexual dysfunction. Also we aimed to determine the independent risk factors of pre-treatment and post-treatment sexual dysfunction of infertile couples. Furthermore, the study also explored the consequences of their situation on several aspects, such as inter-spouse relationship, relationship with relatives, and durtion of infertility.

## Subjects and Methods

The prospective study was carried out at the Bulent Ecevit University, Zonguldak, Turkey, between 2003 and 2007. All patients were recruited from a Muslim Turkish population who were not previously treated and followed elsewhere. Inclusion criteria comprised infertility lasting more than 1 year, normal hormonal profile thyroid stimulating hormone (TSH), plasma prolactin (PRL), total thyroid (T) and dehydroepiandrosteron (DHEAS) and day 3 follicle stimulating hormone (FSH) <12 IU/L. Patients with known systemic and psychiatric diseases that may cause sexual dysfunction were excluded. Ovulatory patients with early-stage endometriosis (Stage I or II) and unexplained infertility and anovulatory polycystic ovary syndrome (PCOS) patients were included. Tubal, peritoneal and uterine causes of infertility, male factor infertility and Stage III and IV endometriosis were excluded due to direct indication for use of IVF and other advanced assisted reproductive technologies, including surgical interventions. The diagnosis of unexplained infertility was based on a normal semen analysis using World Health Organisation (WHO) criteria, normal hysterosalpingography and diagnostic laparoscopy.[11]

The study was approved by the institutional ethics committee and informed consent was obtained from all the participants. Each couple was interviewed seperately by an experienced psychiatrist and worked out the self-administered ASEX score. Detailed sexual history (such as their sexuality, attitudes toward sexuality, and pre-marital sexual behaviour) was taken from each subject. Sexual dysfunction diagnoses were made according to Diagnostic and Statistical Manual of Mental Disorders-IV (DSM-IV).[12] Sexual dysfunction questionnaire was used for diagnostic evaluation by the authors, including questions about the sexual dysfunction diagnostic criteria in DSM-IV sexual dysfunction diagnosis for men and women. All subjects were assessed at admission and after 3 months following treatment. Age, educational status of couples, duration of marriage, infertility, monthly income, timing of obtaining first sexuality education, attitudes of couples about infertility and coital frequency were the clinical variables evaluated.

Clomiphene citrate (Gonaphane, Organon, Santa Farma Ilaç Sanayi, Sirkeci, Istanbul) was given orally to all patients in dose of 100mg/day, from menstruation days 3 to 7. Patients were monitored with transvaginal ultrasonography for the mean follicular diameter to monitor follicular growth and endometrial thickness on the 10, 12, and 14 day of the cycle. Endometrial thickness was measured at the greatest dimeter perpendicular to the midsaggital plane in the fundal region. Serial measurements of prostaglandin E2, luteinising hormones (LH) Progesteron were done. Human chorionic gonadotropin (Prenyl, Organon, Santa Farma Ilaç Sanayi, Sirkeci, Istanbul, Turkey) at a dose of 10,000 IU was employed to trigger ovulation when at least one follicle exceeding 18mm in diameter was noted. Timed intercourse was recommended to all patients. At the third month of the treatment, intrauterine insemination was performed at 24 and 48 hours after administration of human chorionic gonodotropin (hCG). Serum Progesteron level was measured on days 21-23 of the cycle. Ovulation was assumed to have occurred when midluteal serum Progesteron exceeded 7ng/mL. Serum hCG was determined 2 weeks after hCG injection in the absence of menstruation for the diagnosis of pregnancy. Ultrasonography was performed 5 weeks post-hCG administration for women with positive pregnancy test in blood.

Sexual functioning was assessed using the validated Turkish version[13] of ASEX,[10] a self-filing scale. The ASEX is a brief five-item scale designed to assess the core elements of sexual functioning: drive, arousal, penile erection/vaginal lubrication, ability to reach orgasm and satisfaction with orgasm. The female and male versions of ASEX differ on the gender-specific question addressing erection/lubrication. Each item is rated with a six-point Likert system, with lower scores reflecting enhanced sexual function and higher scores reflecting impaired sexual function. ASEX could be used as self- or clinician administered in heterosexual and homosexual populations, regardless of the availability of a sexual partner.[10] A total ASEX score $\geq$19, any one item with a score of $\geq$5, or any three items with a score of 4 have all been found to be correlated with sexual dysfunction.[10] It was found that a total ASEX score $\geq$11 was the best cutoff point (sensitivity = 100%; specificity = 52%) for screening SD in Turkish population.[13] In the current study, each couple self-administered the test separately both before the evaluation of infertility and 3 months after the initiation of treatment.

Statistical analyses were performed using SPSS 18.0 and Medcalc 9.2.0.1 softwares. Continuous variables were expressed as mean±standard deviation and median (minimum-maximum), categorical variables as frequency and percentage. Wilcoxon Signed Ranks test was used to compare the pre-post scores in both women and men. McNemar test was used to assess the significance of pre-treatment and post-treatment frequencies. Independent sample t test or Mann-Whitney U was used to evaluate the relationship of ASEX with educational status of couples, attitudes of men about infertility, and attitude of men's family about infertility. Spearman correlation analysis was used to evaluate associations between duration of infertility and pre- and post-treatment ASEX scores. Receiver operating characteristic (ROC) curve analysis was performed to determine a cutoff value for pre-treatment and post-treatment total ASEX scores for both women and men. Binary logistic regression analysis (forward stepwise method) was used to determine the independent risk factors of pre-treatment and post-treatment sexual dysfunction of women. P value of less than 0.05 was considered statistically significant for all tests.

Sample size calculation was performed with type I ($\alpha$) and type II ($\beta$) errors which were set at 0.05 and 0.20, respectively. GPower 3.0.10 software was used for sample size calculation.

## Results

Of the 55 couples initially enrolled, 5 (9.09%) were lost during follow-up; 2 (40%) of them had a pregnancy, and 3 (60%) did not complete the treatment cycles. Sociodemographic characteristics of the couples were noted (Table-1). Pre-treatment mean values of ASEX parametres in both women and men went significantly upwards 3 months after the initiation of treatment (Table-2). Statistically significant positive correlation was observed between pre- and post-treatment total ASEX scores in both women (r=0.85, p<0.001) and men (r=0.89, p<0.001) (Figure-1). Additionally, women's pre-treatment and post-treatment ASEX scores were significantly higher than the corresponding values in men (pre-treatment: 12.5(5-26) vs 10(5-21), p=0.005; post-treatment: 17(5-26) vs 13(5-21), p=0.001). Duration of infertility was significantly correlated with both pre- and post-treatment ASEX scores in women (pre-treatment: r=0.37, p=0.008; posttreatment: r=0.29, p=0.038). There was no significant correlation between duration of infertility and ASEX scores in men (pre-treatment r=0.05, p=0.723; post-treatment: r=0.08, p=0.586). Educational status did not have significant effect on pre-treatment and post-treatment ASEX

**Table-1:** Clinical characteristics.

| | |
|---|---|
| **Age (mean ± SD (range) years)** | |
| Women | 30.4 ± 5.2 (20-39) |
| Men | 33.9 ± 6.8 (21-50) |
| Duration of marriage (median (range) years) | 6 (1-18) |
| Duration of infertility (median (range) years) | 4 (1-17) |
| Coital frequency (median (range) coitus/week) | 2 (1-7) |
| **Religion (n (%))** | |
| Women, Muslim | 50 (100%) |
| Men, Muslim | 50 (100%) |
| **Educational status (n (%)),** | |
| Women | |
| Primary school | 25 (50%) |
| High school | 21 (42%) |
| Higher | 4 (8%) |
| **Occupation (n (%))** | |
| *Women* | |
| Working | 33 (66%) |
| Not working | 17 (34%) |
| *Men* | |
| Working | 46 (92%) |
| Not working | 4 (8%) |
| **Type of engagement** | |
| Demand of family | 14 (28%) |
| Self demand | 36 (72%) |
| **Socioeconomic status** | |
| Low-income | 14 (28%) |
| Medium-income | 33 (66%) |
| High-income | 3 (6%) |
| **Attitude of men about infertility** | |
| Negative | 26 (48%) |
| Not negative | 24 (52%) |
| **Attitude of men's family about infertility** | |
| Negative | 26 (52%) |
| Not negative | 24 (48%) |

SD: Standard deviation.

**Table-2:** ASEX item scores of couples.

| | Pretreatment Mean(min-max) | Posttreatment Mean(min-max) | P* |
|---|---|---|---|
| **Male** | | | |
| Drive | 1 (1-3) | 2 (1-4) | <0.001 |
| Arousal | 2 (1-4) | 2(1-5) | 0.005 |
| Erection | 2 (1-6) | 2 (1-6) | 0.216 |
| Orgasm | 2 (1-6) | 3(1-6) | 0.001 |
| Satisfaction from orgasm | 2 (1-6) | 3 (1-6) | <0.001 |
| Total | 10(5-21) | 13(5-21) | <0.001 |
| **Female** | | | |
| Drive | 3(1-4) | 3 (1-5) | <0.001 |
| Arousal | 3 (1-5) | 3 (1-5) | 0.004 |
| Lubrication | 3 (1-5) | 3 (1-6) | <0.001 |
| Orgasm | 3 (1-6) | 3.5(1-6) | 0.011 |
| Satisfaction from orgasm | 2 (1-6) | 3 (1-6) | <0.001 |
| Total | 12.5(5-26) | 17(5-27) | <0.001 |

*Statistical analysis: Wilcoxon Signed Ranks Test. ASEX: Arizona Sexual Experience Scale.
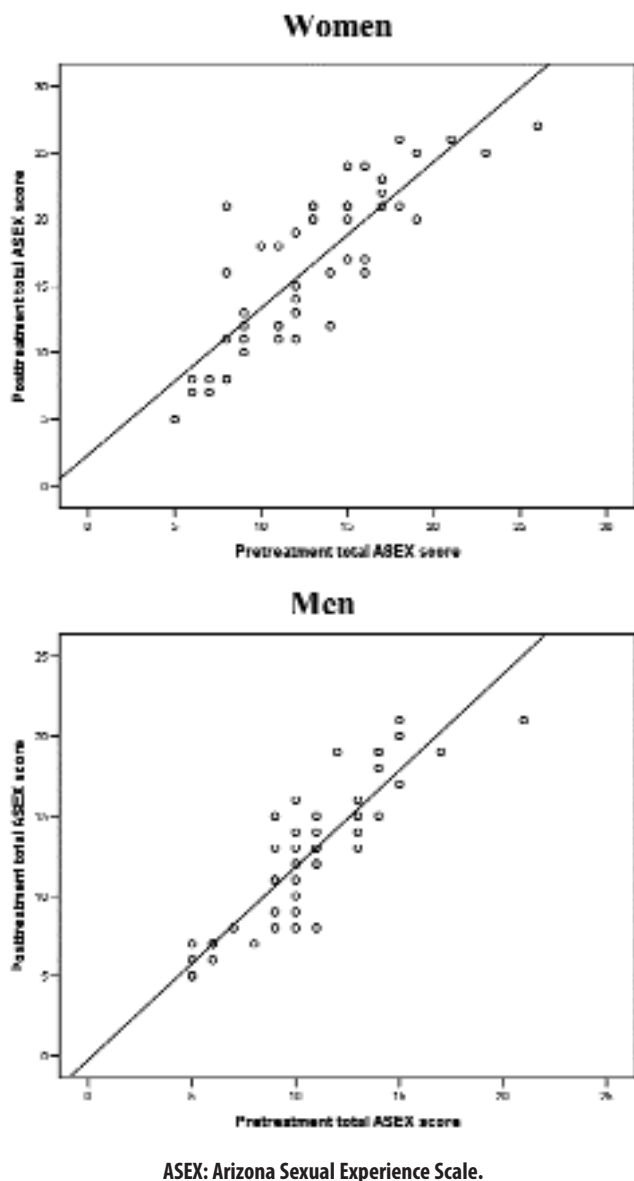
## Women



## Men



ASEX: Arizona Sexual Experience Scale.

**Figure-1.** Correlation of pre- and post-treatment ASEX scores among couples.

scores in women (p=0.943, p=0.692 respectively). Attitude of husband about infertility was not significantly correlated to pre-treatment and post-treatment ASEX scores in women (p=0.623, p=0.416 respectively). And also attitude of man's family about infertility did not have a significant effect on pre-treatment and post-treatment ASEX scores in women (p=0.805, p=0.472 respectively) and men (p=0.346, p=0.923 respectively). At the beginning of the study, sexual dysfunction was diagnosed 60% (30/50) in women and 34% (17/50) in men. After 3 months of initiation of infertility treatment, SD diagnosis increased

**Table-3:** Pre-treatment and post-treatment diagnoses of sexual dysfunction.

|  | Pretreatment | Posttreatment | p |
|---|---|---|---|
| **Diagnoses of sexual dysfunction in women** | | | |
| Sexual arousal disorder | 10 (20%) | 15 (30%) | |
| Orgasmic disorder | 5 (10%) | 6 (12%) | |
| Sexual arousal disorder and hypoactive sexual desire | 5 (10%) | 5 (10%) | |
| Hypoactive sexual desire | 4 (8%) | 5 (10%) | |
| Orgasmic disorder and arousal disorder | 3 (6%) | 3 (6%) | |
| Arousal disorder and dyspareunia | 2 (4%) | 2 (4%) | |
| Hypoactive sexual desire and orgasmic disorder | 1 (2%) | - | |
| Total | 30 (60%) | 36 (72%) | 0.146 |
| **Diagnoses of sexual dysfunction in men** | | | |
| Hypoactive sexual desire | 8 (16%) | 13 (26%) | |
| Erectile disorder | 4 (8%) | 4 (8%) | |
| Hypoactive sexual desire and erectile disorder | 3 (6%) | 4 (8%) | |
| Premature ejaculation | 2 (4%) | 3 (6%) | |
| Total | 17 (34%) | 24 (48%) | 0.039 |

Statistical Analysis: Mcnemar test.

to 72% (36/50) of women and 48% (24/50) of men (Table-3). After 3-month treatment, there was increased frequencies of some items with a score ≥4 in men and women. Scores of men's arousal, orgasm and satisfaction scores increased after treatment. Scores of all of items were increased in women, especially increasing values of women's satisfaction from orgasm were very impressive at the end of the treatment. At the beginning of the treatment, scores ≥4 of women's satisfaction from orgasm were 10%, but at end of the study, scores ≥4 were 48% (Table-4). Additionally, women's pre-treatment and post-treatment mean scores of same items of ASEX were significantly higher than men's, except scores of pre-treatment satisfaction from orgasm (Table-5).

ROC curve analysis was conducted for pre-treatment and post-treatment ASEX scores to predict the presence of sexual dysfunction. Area under the ROC curves of women's pre-treatment and post-treatment were (AUC=0.83, p<0.001) and (AUC=0.92, p<0.001) respectively. Area under the ROC curves of men's pre-treatment (AUC=0.66, p=0.065) and post-treatment (AUC=0.72, p=0.003) were found (Figure-2). Optimum cutoff values of pre- and post-treatment ASEX scores in women were >14 (Sensitivity: 57%, Specificity: 90%) and >13 (Sensitivity: 83%, Specificity: 93%), respectively. Similarly, pre-treatment and posttreatment ASEX scores in men were >10 (Sensitivity: 65%, Specificity: 61%), >11 (Sensitivity: 83%, Specificity: 62%) respectively.

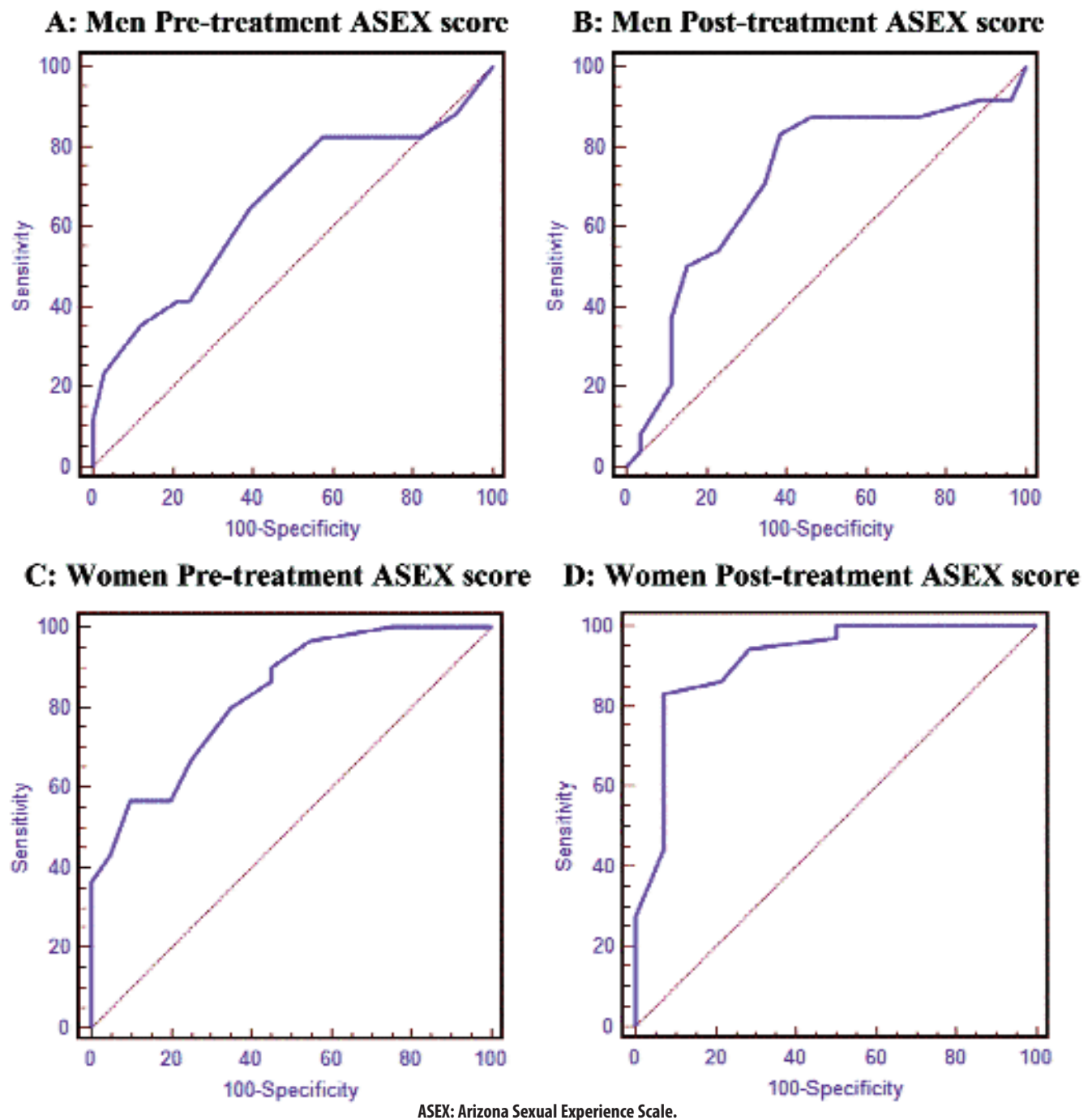Binary logistic regression analysis was made to determine

**A: Men Pre-treatment ASEX score**

**B: Men Post-treatment ASEX score**

**C: Women Pre-treatment ASEX score**

**D: Women Post-treatment ASEX score**

**ASEX: Arizona Sexual Experience Scale.**

**Figure-2:** ROC curve analysis showing sensitivity and specificity of pre- and post-treatment total ASEX score of women for predicting post-treatment sexual dysfunction among couples. A: pre-treatment men (AUC=0.66, p=0.065). B: Post-treatment men (AUC=0.72, p=0.003). C: Pre-treatment women (AUC=0.83, p<0.001). D: Post-treatment women (AUC=0.92, p<0.001).

the possible risk factors of sexual dysfunction in infertile couples. Binary logistic regression analyses revealed women's pre-treatment and post-treatment ASEX scores as an significant factor for prediction of sexual dysfunction independent of age, duration of infertility, educational status of women, negative attitude of family about infertility and negative attitude of men about infertility (p=0.001 and p=0.001, respectively).

**Tablo-4:** Frequency of pre- and post-treatment ASEX scores.

| | Pretreatment ASEX score frequency n(%) | | | | | | Posttreatment ASEX score frequency n(%) | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Male** | **1** | **2** | **3** | **4** | **5** | **6** | **1** | **2** | **3** | **4** | **5** | **6** |
| Drive | 17(34%) | 24(48%) | 9(18%) | 0 | 0 | 0 | 12(24%) | 15(30%) | 20(40%) | 3(6%) | 0 | 0 |
| Arousal | 15(30%) | 17(34%) | 15(30%) | 3 (6%) | 0 | 0 | 12(24%) | 15(30%) | 13(26%) | 8(16%) | 2(4%) | 0 |
| Erection | 14(28%) | 17(34%) | 15(30%) | 3 (6%) | 0 | 1(2%) | 15(30%) | 11(22%) | 19(38%) | 3(6%) | 1(2%) | 1(2%) |
| Orgasm | 15(30%) | 15(30%) | 18(36%) | 1 (2%) | 0 | 1(2%) | 10(20%) | 13(26%) | 19(38%) | 3(6%) | 4(8%) | 1(2%) |
| Satisfaction from orgasm | 14(28%) | 21(42%) | 12(24%) | 2 (4%) | 0 | 1(2%) | 7(14%) | 16(32%) | 17(34%) | 6(12%) | 3(6%) | 1(2%) |
| **Female** | **1** | **2** | **3** | **4** | **5** | **6** | **1** | **2** | **3** | **4** | **5** | **6** |
| Drive | 14(28%) | 10(20%) | 21(42%) | 5(10%) | 0 | 0 | 5(10%) | 8(16%) | 15(30%) | 13(%26) | 9(18%) | 0 |
| Arousal | 13(26%) | 7(14%) | 15(30%) | 12(24% | 3(6%) | 0 | 8(16%) | 11(22%) | 8(16%) | 13(26% | 10(20% | 0 |
| Lubrication | 9(18%) | 14(28%) | 17(34%) | 9(18%) | 1(2%) | 0 | 4(8%) | 11(22%) | 13(26%) | 13(26% | 8(16%) | 1(2%) |
| Orgasm | 2(4%) | 10(20%) | 24(48%) | 9(18%) | 2(4%) | 3(6%) | 4(8%) | 10(20%) | 11(22%) | 9(18%) | 12(24% | 4(8%) |
| Satisfaction from orgasm | 18(36%) | 15(30%) | 12(24%) | 2 (4%) | 1(2%) | 2(4%) | 2(4%) | 15(30%) | 9(18%) | 13(26% | 6(12%) | 5(10%) |

ASEX: Arizona Sexual Experience Scale.

**Table-5:** Pre-treatment and post-treatment ASEX mean scores.

| | Male Mean(min-max) | Female Mean(min-max) | p |
|---|---|---|---|
| Drive pre | 2 (1-3) | 3 (1-4) | 0.008 |
| Drive post | 2(1-4) | 3(1-5) | <0.001 |
| Arousal pre | 2(1-4) | 3(1-5) | 0.016 |
| Arousal post | 2(1-5) | 3(1-5) | 0.016 |
| Orgasm pre | 2(1-6) | 3(1-6) | <0.001 |
| Orgasm post | 3(1-6) | 3.5(1-6) | 0.002 |
| Satisfaction pre | 2(1-6) | 2(1-6) | 0.882 |
| Satisfaction post | 3(1-6) | 3(1-6) | 0.011 |

Statistical Analyses: Mann-Whitney U test.
ASEX: Arizona Sexual Experience Scale.

## Discussion

Infertility, as a medical and social issue, might be the cause and the result of some psychological and sexual problems. Additionally, infertility work-up and treatment is a deeply stressing experience for many couples. Approximately 15% of all couples experience difficulty to conceive after 1 year of unprotected sexual intercourse. This common problem might have an important effect on the sexual life of couples.[5]

Sexual dysfunction is a frequent problem in infertile couples.[7] Meanwhile, the nature of the sexual dysfunction might influence the way a couple experienced the infertility. Infertile couples trying to conceive may feel that the purpose of sex is simply to impregnate the woman, and if this does not happen, the entire purpose of sex has been thwarted.[7] Physically disturbing procedures, sense of being 'monitored', the need for 'sex on demand' in infertility treatment affect sexual self-image, desire and performance. This also results in constant anxiety and

marital conflicts, strained sexual relationship and reduced sexual desire.[14] Especially in Turkey, a married woman's attaining motherhood is so important for her familial and social existence that infertility weighs heavily on her mind.[15,16] Nene et al reported that most women kept silent sufferers in both the family and society.[7] Sexually dysfunctional men mostly held themselves responsible for their childlessness and verbalised their distress. They had increased sexual dissatisfaction and decreased frequency of sexual intercourse.[7]

Another study reported that data on emotional responses showed a certain uniformity in men and women which might have important implications both conceptually and clinically.[17] Infertile patients may experience a loss of close relationship with his/her partner and might lose prestige in society and develop a low self-esteem. These feelings may lead to depression, anger, anxiety or feelings of guilt.[2,5] Those couples with a record of failure in treatment have shown personality maladjustment.[18] Women frequently experience negative attitudes from both men (48%) and his family (52%). In our study, blaming was the most common form of negative attitude towards women.

Prevalence data suggest that more than 40% of women experience sexual problems and that only 12% of these women seek help.[19] Amongst Turkish women, sexual dysfunction was detected as a desire problem in 48.3% of women, an arousal problem in 35.9%, a lubrication problem in 40.9%, an orgasm problem in 42.7%, a satisfaction problem in 45.0% and a pain problem in 42.9%.[20] Yilmaz et al reported that the rate of erectile dysfunction and premature ejaculation in men were 14.5% and 29.3% respectively, and the rate of anorgasmia and vaginismus in women were found to be 5.3% and

15.3% respectively in married Turkish population.[21] Jain et al. reported that amongst the infertile men, premature ejaculation (66%) was the most common problem followed by erectile dysfunction (15%), decreased libido (11%) and orgasmic failure (8%). Amongst the women most frequent sexual problems were dyspareunia (58%), decreased libido (28%) and orgasmic failure (14%).[22] According to Jindal et al. at least one sexual problem was identified in 52.5% of infertile women, and decreased the frequency of intercourse. Anorgasmia in women was the most commonly encountered problem.[9] The prevalence of female sexual dysfunction was found to be 64.8% in primary infertile Turkish women.[23] In our study, especially sexual drive, erection, satisfaction from orgasm were the most commonly encountered problems. In accordance with previous studies, we found that 60% of women and 34% of men were diagnosed to have sexual dysfunction disorder. Duration of infertility may be an important factor that affect sexual life. Jindal et al have reported that psychosexual problems were maximal when duration of infertility was less than 2 years or more than 8 years.[9] The current study found that there was a significant positive correlation between the duration of infertility and sexual problems in women. Therefore awareness of physicians could help early diagnosis and management.

Unfortunately research, on female sexuality lags behind research on males and in our culture it is not accepted that the effect of female sexual problems for their quality of life are as disruptive as male sexual problems. Women have many reasons for engaging in sexual activity other than simply sexual drive. For these reasons, patient-reported outcomes are more important in both clinical practice and research settings in furthering our understanding of the impact of female sexual dysfunction on the patient and partner and its treatment.[19] Consequently, ASEX might be a suitable scale to reduce the possibility of the patient minimising sexual dysfunctional issues through some restraining factor via a researcher. Our results showed that although highly correlated with men's ASEX score, women's ASEX score was significantly higher than men's; especially increasing values of women's satisfaction from orgasm were very impressive. Interestingly, none of these women was complaining of sexual problems at the beginning of the treatment. In accordance with these results, women's pre- and post-treatment ASEX scores had good sensitivity and specificity predicting sexual dysfunction among couples.

Our results confirmed that sexual dysfunction was an important and frequent problem in our study group. Infertility itself is important in the etiology of sexual dysfunction. Furthermore, negative experience of repeated treatment failures contribute to the increase in sexual dysfunction. Women seemed to be more vulnerable to the stress of infertility work-up and treatment. A high ASEX score (>13-14), a measurement of sexual dysfunction, seemed to be most important independent pre- and post-treatment risk factor for the development of sexual dysfunction. Contrary to general belief, many clinical factors like ages of couples, attitudes of the other people in the family were not an independent risk factor for the development of sexual dysfunction. ASEX scores might be used as screening test before or after the initiation of treatment for prediction of sexual dysfunction of infertile couples. At the beginning of the study, 60% of women and 34% of men in our infertile cohort meet the criteria for sexual dysfunction. After 3 months of initiation of infertility treatment sexual dysfunction diagnosis increased to 72% (36/50) of women and 48% (24/50) of men.

Although the study subjects served as their own controls, one of the limitation of our study is the lack of a control group from the fertile population. The other limitation is that the results of our study could not be compared with other studies because of the insuffient number of similar pre-post studies in literature.

## Conclusion

Infertility and its treatment may destroy the couples' relationship and their sexual life. Actually sexual dysfunction also itself might be the cause of infertilty. Clinicians should specifically ask for the presence of sexual problems. It is clear evidence that healthy sexual functioning is an important influence on a woman's and man's sense of well-being and quality of life. Consequently ASEX might be an objective and useful scale for documentation, treatment, and follow-up of these problems.

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