Sexual dysfunction in infertile Turkish females: prevalence and risk factors

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ABSTRACT

Objectives: Our aim was to evaluate the prevalence of and risk factors for sexual dysfunction in infertile Turkish females.
Study design: We interviewed 352 infertile and 301 fertile females in the Department of Obstetrics and Gynaecology at Tepecik Training and Research Hospital in Izmir, Turkey. The female sexual function index (FSFI) was used to assess the relationship between infertility and female sexual function.
Results: The mean age was similar between the infertile and control groups (29.2 ± 4.3 *vs.* 28.7 ± 4.0, respectively; $p = 0.120$). The prevalence of sexual dysfunction in infertile females was higher than that in the fertile control group (32.9 *vs.* 17.2%, $p < 0.001$), and the total FSFI score (26.2 ± 2.5 *vs.* 28.2 ± 1.7) and the score on each domain of sexual function parameters were significantly lower in the infertile group than in the control group (all $p < 0.001$). Multivariate logistic regression analysis indicated that a duration of marriage and of infertility ≥ 3 years (odds ratio [OR] 3.79, 95% confidence interval [CI] 1.75–8.20, $p = 0.001$; OR 3.18, 95% CI 1.54–6.55, $p = 0.002$, respectively) and a history of previous infertility treatment (OR 3.07, 95% CI 1.63–5.76, $p < 0.001$) were risk factors for sexual dysfunction in infertile females.
Conclusions: Female sexual dysfunction was higher in the infertile group than the fertile control group in this Turkish population. Duration of marriage and of infertility ≥ 3 years and a history of previous infertility treatment were the primary risk factors for sexual dysfunction in infertile females.

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Introduction

Impairment of sexual function due to various physiological and psychological risk factors lowers an individual's quality of life [1], although many people avoid seeking necessary medical assistance [2,3]. Previous studies reported that sexual dysfunction (SDF) is more common in females than in males and that diagnosis of sexual dysfunction in females is a difficult process [4]. SDF was previously characterized as having four main manifestations; however, desire disorder and arousal disorder were combined in the 2013 5th edition of the Diagnostic and Statistical Manual of Mental Disorders and characterized as having three manifestations: desire disorder–arousal disorder, which is a persistent absence of desire, avoidance of sexual activity, and the absence of sexual excitement; orgasm disorder, which is the inability to reach orgasm; and pain disorder, which involves pain associated with sexual intercourse [5].

In a 2007 study of 172,413 women from 25 countries conducted to determine the global prevalence of infertility, infertility rates ranged from 3.5 to 16.7% in developed countries and from 6.9 to 9.3% in developing countries [6]. The prevalence of infertility in Turkey was reported as 10% among married couples [7]. Infertility negatively impacts the physical, psychological, and economic well-being of the couples [8]. For instance, the beginning of menstruation indicating that an expected pregnancy has not occurred was found to cause intense depressive feelings along with societal and familial pressures [9,10]. Furthermore, infertile females experienced more emotional problems than did males, and these problems had an impact on their daily lives [11,12].

Some factors such as cancer diagnosis [13], history of gynecological surgery [14], chemotherapy [15], and urinary incontinence [16] cause sexual dysfunction in females. In our previous review, we mentioned that patients' knowledge of infertility as a side effect of chemotherapy or even their perception as being infertile after treatment may cause anxiety and depression

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Table 1

Demographic characteristics of two groups.

Characteristics	Infertile group ($n = 352$)	Control group ($n = 301$)	p value
Age (years)	29.2 ± 4.3	28.7 ± 4.0	0.120
Body mass index (kg/m^2)	23.1 ± 2.7	22.5 ± 2.8	0.103
Husband's age (years)	32.1 ± 4.2	31.5 ± 4.1	0.063
Duration of marriage	2.8 ± 1.6	3.2 ± 2.2	**0.005**
Employment			0.774
Employed	103/352 (29.2)	85/301 (28.2)	
Unemployed	249/352 (70.3)	216/301 (71.8)	
Education (years)	9.2 ± 3.1	8.8 ± 3.5	0.098
Smoking	96/352 (27.2)	69/301 (22.9)	0.202

Values for continuous variables are mean ± standard deviation. Values for categorical variables are number/total number of cases (%).
Bold indicates statistical significance.

in female patients receiving chemotherapy [17]. These psychological events related to female infertility may impair the quality of life and effect the sexual functioning of infertile women.

Religious and cultural norms in Turkey prevent open discussion about sexuality, and the presence of different ethnic groups has precluded a thorough assessment of sexual function in the infertile females. Therefore, in the present study, we aimed to assess sexual function in a large population of infertile females in Turkey.

Materials and methods

The present study was conducted in the Department of Gynaecology and Obstetrics of Tepecik Training and Research Hospital (Izmir, Turkey) after being approved by the hospital's ethics committee. All patients provided written informed consent. The hospital is one of the three largest hospitals in western Turkey, and the infertility outpatient clinic serves ~1500 infertile patients annually.

The study group consisted of 352 infertile females of reproductive age who were unable to have a child despite regular sexual intercourse for at least 1 year and a history of infertility treatment. The control group consisted of 301 non-pregnant, non-postpartum, and non-breastfeeding sexually active women 18–45 years of age with no prior history of infertility. Exclusion criteria for both groups of women were cardiovascular disease including hypertension and hyperlipidaemia, endocrine disorders such as thyroid dysfunction and diabetes mellitus, primary ovarian failure, hypothalamic amenorrhea, psychiatric disorders such as depression and anxiety, and hormone therapy.

The female sexual function index (FSFI) is a 19-item self-report instrument providing scores on six domains of sexual function. These domains include the following: desire (two items, questions 1–2), arousal (four items, questions 3–6), lubrication (four items, questions 7–10), orgasm (three items, questions 11–13), satisfaction (three items, questions 14–16), and pain (three items, questions 17–19) [18]. The sum of the 19 items provides the total FSFI score. Points given for each topic changed between 0 and 5 and the score was calculated using multipliers of the factors. A total score of 26.55 has been used as the cut-off for clinical SDF in previous studies [19].

Statistical analysis was performed using the Statistical Package for the Social Sciences (release 15.0; SPSS, Inc., Chicago, IL). The variables were investigated using visual (histograms, probability plots) and analytical methods (Kolmogorov–Smirnov/Shapiro–Wilks test) to determine normal distribution. Continuous data were analyzed by Student's t-test. The χ^2 and Fischer's exact tests was used to compare proportions in different groups. We used a logistic regression multivariate analysis model with the FSFI score as the dependent variable and age, body mass index (BMI), duration of marriage and infertility, smoking, cause of infertility, previous infertility treatment, education, and employment status

as independent variables to assess their relevance for sexual function in the infertile group. A p-value < 0.05 indicated statistical significance.

Results

The demographic features of both study groups are shown in Table 1. There was no significant difference between the infertile and control groups in age (29.2 ± 4.3 *vs.* 28.7 ± 4.0, $p = 0.120$). Women from eastern Turkey represented 40.8% of those in the control group and 38.6% of those in the infertile group ($p = 0.562$). Causes of infertility in the infertile group were female factors in 33.8%, male factors in 30.9%, combined factors in 4.8%, and unexplained infertility in 30.5% of the patients. Secondary infertility was identified in 23.2% (82/352) of the infertile patients.

When sexual function scores in both groups were reviewed, desire, lubrication, arousal, orgasms, pain, and satisfaction was found to be significantly lower in the infertile group than in the controls ($p < 0.001$ for each parameter; Table 2). The mean total FSFI score in the infertile group was significantly lower than that in the control group (26.2 ± 2.5 *vs.* 28.2 ± 1.7, respectively; $p < 0.001$). SDF was observed in 32.9% of the infertile group and 17.2% of the control group ($p < 0.001$).

Possible risk factors for SDF in the infertile group were assessed using multivariate analysis. Being married for ≥ 3 years (odds ratio [OR] 3.79, 95% confidence interval [CI] 1.75–8.20, $p = 0.001$), duration of infertility ≥ 3 years (OR 3.18, 95% CI 1.54–6.55, $p = 0.002$), and a prior history of infertility treatment (OR 3.07, 95% CI 1.63–5.76, $p < 0.001$) increased the risk of SDF. However, age, BMI, smoking status, educational level, cause of infertility, and employment status were not found to be risk factor for SDF (Table 3).

Comment

Infertility leads to marital problems by affecting the physical and emotional condition of couples, which can result in anxiety and depression [17]. The individual may feel inadequate because of

Table 2

Comparison of total FSFI and domain scores in infertile and fertile women.

	Infertile group ($n = 352$)	Control group ($n = 301$)	p value
Desire	3.9 ± 0.68	4.7 ± 0.51	<0.001
Lubrication	4.2 ± 0.57	4.4 ± 0.34	<0.001
Arousal	4.3 ± 0.54	4.5 ± 0.65	<0.001
Orgasm	4.5 ± 0.54	4.7 ± 0.45	<0.001
Pain	4.4 ± 0.49	5.1 ± 0.35	<0.001
Satisfaction	4.4 ± 0.55	4.7 ± 0.28	<0.001
Total score	26.2 ± 2.5	28.2 ± 1.7	<0.001

Values for continuous variables are mean ± standard deviation. $p < 0.05$ was considered statistically significant.