

# Female Sexual Dysfunction: Prevalence and Risk Factors

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## ABSTRACT

**Background and Aim:** Sexual dysfunction adversely affects quality of life, self esteem and interpersonal relationships and it may often be responsible for psychopathological disturbances. The purpose of this study was to explore the prevalence and associated risk factors for Female Sexual Dysfunction (FSD) in women with Kurdish culture from western Iran .

**Material and Methods:** This was a cross-sectional descriptive survey which included 400 women aged 18–50 years old, married, from Ilam-IR, who were interviewed as per the Iranian version of Female Sexual Function Index (FSFI). The subjects were randomly selected from 4 primary health centres.

**Results:** According to the findings, 185 (46.2%) women reported FSD. Prevalence of FSD increased with age, from 22% in women aged <20 years to 75.7% in women aged 40-50 years. FSD was detected as a desire problem in 45.3% of women, an arousal problem in 37.5%, a lubrication problem in 41.2%, an orgasm

problem in 42.0%, a satisfaction problem in 44.5% and a pain problem in 42.5%. The educational level was inversely correlated with the risk of FSD (OR: 1.54 ,95% CI: 1.09-2.13). Patients with FSD were significantly more likely to be older than 40 years (OR: 2.23, 95% CI: 1.12-2.68), who had sexual intercourse fewer than 3 times a week (OR:1.85, 95% CI: 1.23-1.99), who had been married for 10 years or more (OR:1.76, 95% CI: 1.04-1.97), who had 3 children or more (OR: 1.48, 95% CI: 0.97-1.24), who had husbands aged 40 years or more (OR: 2.11, 95% CI: 1.35-2.37) and who were unemployed (OR: 1.34, 95% CI: 1.06-1.63). No significant differences were detected in smoking history, residences and contraception methods used ( $p>0.05$ ).

**Conclusion:** FSD needs to be recognized as a significant public health problem in Kurd women. Further research, particularly studies on awareness and competency of physicians in the management of FSD, is required.

**Keywords:** Sexuality, Women, Risk factors, Iranian

## INTRODUCTION

Sexuality is a complex process coordinated by the neurological, vascular and endocrine systems [1]. FSD is a multi-causal and a multi-dimensional medical problem that adversely affects physical health and emotional well-being [2-5]. Sexual dysfunction can have a major impact on quality of life in women. Impaired sexual function can have damaging effects on the self-esteem, sense of wholeness and interpersonal relationships of women. It is often emotionally distressing. If female sexuality is disturbed, the consequences it might lead to, include familial discord and divorce, and reproduction is also affected [6]. FSD is a highly prevalent problem in 38% to 63% of women [7]. Based on studies done by the National Health and Social Life Survey, of 1749 women, 43% have complaints of sexual dysfunction [6]. While prevalence and risk factors for male sexual dysfunction, in particular erectile dysfunction, have been intensively studied within the past decade, data regarding this issue on women, are scant [8-15]. Therefore, the aim of this study was to clarify the prevalence of FSD in a sample of Iranian women with Kurdish culture, from Ilam University of Medical Sciences (western Iran). We also investigated possible risk factors that could cause sexual dysfunction in these women.

## MATERIAL AND METHODS

This was a cross-sectional, descriptive survey which included a representative sample of the population of women who were 18–50 years old, married, who attended the primary health centres of Ilam University of Medical Sciences (western Iran) from September 2010 through September 2011. The study was approved by the institutional review board and each subject gave her written informed

consent before she was interviewed. Women with chronic or severe medical illnesses or psychiatric illnesses, drug abuse, infertility, menopause, those who were pregnant or were within 2 months postpartum were excluded from the study. The sample size was calculated with 5% precision, 95% Confidence Interval (CI) and with an assumed prevalence of sexual dysfunction of 50%. Using this assumption, a sample size of 381 was required. With a projected subject dropout rate of 5 %, the total number of subjects required for study was determined to be 400.

A multiple stage random sampling design was used. In first stage, by using stratified random sampling, city of study was divided into four sections. Secondary of each section one primary health centre using simple random selected. Women were randomly selected by systematic sampling from the record list of the health centre at our institution. We contacted 483 women, among whom 400 (82.8%) were included, since 83(17.1%) did not give their consents to be included in this study. The women interviewed were accepted and they were available for a 1-hour face-to-face interview by midwives. The subjects were divided into four age groups, including age groups of <20, 20–29, 30–39 and 40–50 years. Using a standard questionnaire demographic characteristics, including subject's age, duration of marriage, type of residence, menarche age, frequency of sexual intercourse per week, educational level, smoking, age of the husband, number of children, contraception use and occupational status were assessed in all woman.

FSD was evaluated by using the Iranian version of the FSFI [16]. The questionnaire assessed sexual function or problems which had occurred during the past 4 weeks. According to the FSFI, sexual function domains consist of sexual desire, arousal, lubrication,

orgasm, satisfaction and pain during sexual intercourse. Sexual desire was assessed as frequency and desire level, by asking 2 questions. Arousal was assessed as frequency, level, confidence and satisfaction, by asking 4 questions. Lubrication was assessed as frequency, difficulty, frequency of maintaining lubrication and difficulty in maintaining lubrication, by asking 4 questions. Orgasm was assessed as frequency, difficulty and satisfaction, by asking 3 questions. Satisfaction was assessed as the amount of closeness with partner, sexual relationship and overall sex life, by asking 3 questions. Pain was assessed as pain frequency during vaginal penetration and pain frequency following vaginal penetration, by asking 3 questions.

The prevalence of sexual dysfunction was also calculated for each domain and it was compared among the groups. Therefore, sexual dysfunction for each domain was considered in the presence of a desire score of 3.3 or less (score range 1 to 5), an arousal score of 3.4 or less (score range 0 to 5), a lubrication score of 3.4 or less (score range 0 to 5), a satisfaction score of 3.8 or less (score range 0 or 1 to 5) and a pain score of 3.8 or less (score range 0 to 5). For each of the 6 domains, a score was calculated and the total score was obtained by adding the 6 domain scores. The total score range was 2 to 36. A total score of more than 28 was considered to be indicative of normal female sexual function and a total score of less than 28 was considered to be indicative of sexual dysfunction. Interviewers (midwives) matched respondents on various social attributes in an interview averaging 45 minutes.

All statistical analyses were done by using SPSS, version 11.5. Categorical data were expressed as percentages and comparisons were made using  $\chi^2$  tests. One-way ANOVA and the independent t test were used to compare parametric sexual function scores. In case of significance, the Odds Ratios (ORs) for the total population was calculated. All hypotheses which were 2-sided, with a p-value of <0.05, were considered to be significant. Values were presented as mean  $\pm$  SD.

## RESULTS

None of the 400 enrolled women was withdrawn for any reason. The study subjects' general characteristics have been given in [Table/Fig-1]. The prevalence of FSD increased with age [Table/Fig-2]. Sexual dysfunction was detected as a desire problem in 181 women (45.3%), an arousal problem in 150 (37.5%) women, a lubrication problem in 165 (41.2%) women, an orgasm problem in 168 (42.0%) women, a satisfaction problem in 178 (44.5%) women and a pain problem in 170 (42.5%) women, all of which (except pain) had a strong positive correlation with age [Table/Fig-3].

Patients with FSD were significantly more likely to be older than 40 years of age ( $\chi^2=12.4$ ,  $p<0.05$ ); who had sexual intercourse fewer than 3 times a week ( $\chi^2=14.3$ ,  $p<0.05$ ); who had been married for 10 years or more ( $\chi^2=10.4$ ,  $p<0.05$ ); who had 3 or more children ( $\chi^2=9.22$ ,  $p<0.05$ ); who had an unemployed status ( $\chi^2=8.93$ ,  $p<0.05$ ); who had low levels of education ( $\chi^2=8.78$ ,  $p<0.05$ ); and who had been married to men aged 40 years or older ( $\chi^2=9.53$ ,  $p<0.05$ ). There were no significant differences between women with FSD and women without FSD with respect to type of residence ( $\chi^2=3.41$ ,  $p>0.05$ ); smoking history ( $\chi^2=2.71$ ,  $p>0.05$ ); or use of contraception ( $\chi^2=2.25$ ,  $p>0.05$ ) [Table/Fig-4]. In case of significance, to evaluate the relationship of each factor, we calculated the odds ratio [Table/Fig-5].

## DISCUSSION

FSD has a major impact on quality of life and interpersonal relationships. For many women, it is physically disconcerting, emotionally distressing and socially disruptive [9]. The strength of our study was the use of the Iranian version of the FSFI which was used to investigate FSD; a version which was not used in past Iranian FSD

Variable	Value (n = 400)
Mean age $\pm$ SD (year)	28.2 $\pm$ 2.3
Mean menarche age $\pm$ SD (year)	13.1 $\pm$ 2.1
<b>No. age groups (%)</b>	
<20	18 (4.5)
20-29	167 (41.7)
30-39	145 (36.2)
40-50	70 (17.5)
<b>No. education (%)</b>	
Primary school	142 (35.5)
High school	213(53.2)
Graduate	45 (11.2)
<b>Frequency of sexual intercourse per week</b>	
<1	46(11.5)
1-2	245(61.2)
3-4	85(21.2)
>4	24(6)
<b>No. occupational status (%)</b>	
Employed	115 (28.5)
Unemployed	285 (71.5)
<b>No. income group (%)</b>	
Weak	117(29.2)
middle	257(64.2)
good	26(6.5)
<b>No. Smoking history (%)</b>	
Yes	36(9)
No	364(91 )
<b>Age of the husband (year)</b>	
<40	293(73.2)
$\geq$ 40	107(26.7)
<b>Duration of marriage (year)</b>	
<10	238(59.5)
$\geq$ 10	162(40.5)
<b>Residence</b>	
Urban	142(35.5)
Rural	258(64.5)
<b>No. Contraceptive drug use (%)</b>	
Yes	314(78.5)
No	86(21.5)
<b>No. Pregnancy and delivery(%)</b>	
Yes	327(81.7)
No	73(18.2)

**[Table/Fig-1]:** Socio demographic and marital characteristics of the participants\*  
\*Values are given as number (percentage) or mean  $\pm$ SD.

Age groups (years)	With Dysfunction n (%)	without dysfunction n (%)	Total n(%)
<20	4 (22%)	14(78%)	18 (100)
20-29	59(35.3%)	108(64.6%)	167(100)
30-39	69(47.5%)	76(42.5%)	145(100)
40-50	53(75.7%)	17(24.2%)	70(100)
Total n (%)	185(46.2%)	215(53.7%)	400(100)

**[Table/Fig-2]:** The prevalence of female sexual dysfunction according to age group of the study participants

research. The major advantage of our study was the fact that, in contrast to mailed surveys, co-morbidities were assessed and verified by interviewers.

Safarinejad, in a population of Iranian women, found an overall prevalence of 31.5% of FSD, of a 35% incidence of desire problems,

Parameters	<20 (n=18)	20-29 (n=167)	30-39 (n=145)	40-50 (n=70)	p-value	Mean Total Scores $\pm$ SD	Total n (%)
Desire	5.34 $\pm$ 1.8	5.01 $\pm$ 1.4	3.43 $\pm$ 1.8	3.02 $\pm$ 1.7	<0.05	4.2 $\pm$ 1.7	181(45.3)
Arousal	5.06 $\pm$ 1.5	4.8 $\pm$ 1.7	3.23 $\pm$ 1.6	2.74 $\pm$ 1.6	<0.01	3.95 $\pm$ 1.5	150(37.5)
Orgasm	5.26 $\pm$ 1.7	5.0 $\pm$ 1.7	2.93 $\pm$ 1.6	2.36 $\pm$ 1.8	<0.001	3.88 $\pm$ 1.7	168(42.0)
Pain	3.0 $\pm$ 1.8	3.42 $\pm$ 1.5	4.75 $\pm$ 1.4	5.12 $\pm$ 1.5	<0.05	4.07 $\pm$ 1.6	170(42.5)
Lubrication	5.64 $\pm$ 1.6	5.03 $\pm$ 1.7	3.18 $\pm$ 1.6	3.0 $\pm$ 1.7	<0.05	4.2 $\pm$ 1.6	165(41.2)
Satisfaction	5.04 $\pm$ 1.7	4.45 $\pm$ 1.6	3.04 $\pm$ 1.7	2.5 $\pm$ 1.8	<0.001	3.75 $\pm$ 1.7	178(44.5)
Overall	29.3 $\pm$ 5.6	27.5 $\pm$ 7.3	20.45 $\pm$ 9.4	18.34 $\pm$ 11.7	<0.001	23.89 $\pm$ 9.2	185(46.2)

**[Table/Fig-3]:** The domain scores (mean $\pm$  SD) of each dimension for each age group

Potential risk factor	Women without FSD ( n=215)	Women with FSD (n=185)	$\chi^2$	p-value
Age, y <40 $\geq$ 40	198(60) 17(24.2)	132(40) 53(75.7)	12.4	<0.05
Education level Higher Lower	31(68.8) 85(23.9)	14(31.1) 270(76.1)	8.78	<0.05
Frequency of sexual intercourse per week <3 $\geq$ 3	44(15.1) 76(69.7)	247(84.9) 33(30.2)	14.3	<0.05
Contraception Yes No	65(20.7) 22(25.5)	249(79.2) 64(74.5)	2.25	NS
Residence Urban Rural	32(22.5) 72(27.9)	110(77.4) 186(72)	3.41	NS
Number of deliveries <3 $\geq$ 3	104(31.8) 13(17.8)	223(68.1) 60(82.2)	9.22	<0.05
Age of the husband, y <40 $\geq$ 40	108(36.8) 14(13)	185(63.1) 93(86.9)	9.53	<0.05
Duration of marriage, y <10 $\geq$ 10	69(28.9) 21(12.9)	169(71) 141(87)	10.4	<0.05
Occupational status Employed Un employed	26(22.6) 116(40.7)	89(77.3) 169(59.2)	8.93	<0.05
Smoking history Yes No	11(30.5) 112(36.8)	25(69.4) 252(69.2)	2.71	NS

**[Table/Fig-4]:** Characteristics of women with female sexual dysfunction\*  
FSD = female sexual dysfunction; NS = not significant

\*Values are given as number (percentage), calculated as row percentages, unless otherwise indicated.

Characteristics	OR (95% CI)
Age <40 $\geq$ 40	1 2.23 (1.12-2.68)
Education level Higher Lower	1 1.54 (1.09-2.13)
Frequency of sexual intercourse per week $\geq$ 3 <3	1 1.85 (1.23-1.99)
Number of Deliveries <3 $\geq$ 3	1 1.48 (0.97-1.24)
Age of the husband, y <40 $\geq$ 40	1 2.11 (1.35-2.37)
Duration of marriage <10 $\geq$ 10	1 1.76 (1.04-1.97)
Occupational status Employed Un employed	1 1.34 (1.06-1.63)

**[Table/Fig-5]:** Adjusted odds ratios for risk factors of the presence of female sexual dysfunction

OR = odds ratio; CI = confidence interval

of a 30% incidence of arousal problems, of a 26.7% incidence of pain problems and of a 37% incidence of orgasm problems [9]. Asghari Roodsari et al., [17] conducted a research on married medical students in Iran and found that an overall 40.0% had sexual problems, at least in one subgroup and that 6.7% had problems in all subgroups; 20.0% had problems in desire, 56.7% had problems in arousal sensation, 33.3% had problems in arousal lubrication, 36.7% had problems in orgasm, 6.7% had problems in pain and that 20.0% had problems in enjoyment [18]. Low difference of prevalence seen in our study as compared to that of another study done on Iranian women was caused by use of Iranian version of FSFI and cultural factors of our sample.

Results from a national survey done on people aged 18–59 years indicated that sexual dysfunction was common among women in 43% of cases. Cayan et al., found an overall 46.9% prevalence of FSD in Turkish women aged 18–66 years. They also found sexual desire in 60.3% of women, arousal problems in 43%, lubrication problems in 38%, orgasm problems in 45.8%, satisfaction problems in 38% and pain problems in 36.8% [13]. Ponholzer et al., in Austrian women aged 20–80 years, found that 22% had desire disorders, that 35% had arousal disorders, that 39% had orgasmic problems, and that 12.8% had pain problems [19]. Based on epidemiological data derived from a National Health and Social Life Survey conducted on the US-population, it was estimated that a third of women lacked sexual interest and that nearly a fourth did not experience orgasms [6]. Castelo-Branco et al., by doing the Laumann's test (DSM-IV) on women living in Santiago de Chile, reported desire disorders in 38% women, arousal disorders in 32%, orgasmic disorders in 25% and dyspareunia in 33% [14]. Abdo et al., in Brazil, reported FSD in 49% of women, sexual desire in 26.7%, pain during sexual intercourse in 23% and orgasmic dysfunction in 21% [20]. Our results were consistent with numbers of above mentioned study and contrast to that of number.

Large differences have been found in the prevalences of FSD between countries. They may reflect medical and psychological factors, particularly in the settings of possible socio-economic, cultural and racial differences, the clinical definition used for each dysfunction, type of trial performed (self-applicable questionnaire, mailed questionnaire, interview by phone, personal interview), interrelation with their partners, educational levels and the characteristics of samples (general population vs sexuality clinics) which were studied. Our data were also consistent with the results of Berman et al., [21]. who reported that 40% of women did not seek help from a physician for their sexual difficulties, whereas 54% reported that they would like to do so. The low rate of direct complaints on sexual problems among women in western Iran with Kurdish culture probably reflects cultural factors such as shyness and embarrassment. In addition, lack of awareness on FSD of physicians can lead to inadequate identification and management of these problems.

In this study, 42.0% of the studied sample had orgasmic disorders. Possible explanations may include a restraining sexual education, poor partner performance and technique, and negative beliefs with regards to sexual activity. Insufficient clitoral stimulation may

account for most of the cases of absent orgasms, and all women may have been potentially orgasmic if they had been adequately stimulated [9]. About 42.5% of samples specified having pain disorders. Psychological pressures and relationship issues often result from pain. In our study, 45.3% women reported having desire disorders. Sexual aversion was the probable diagnosis in lifelong cases of sexual anhedonia. Among the samples, 37.5% had arousal disorders. A lifelong diminished capacity for sexual arousal may be related to lack of awareness on genital anatomy and function [9].

Sexual responsiveness is the result of an interaction between physical (e.g. depression, anxiety, medications for their treatment), psychosocial (e.g. chronic stress/ fatigue, gender or sexual identity issues) and relationship factors.

The results of the present study should be interpreted with recognition of its limitations. Our study included married women and it excluded unmarried women (because of cultural barriers) and women who were separated or divorced (because of similar cultural barriers that prohibited a woman who was supposedly sexually inactive from talking about sexuality). Women who were separated or divorced may be more at risk of FSD, which may have falsely raised the prevalence of FSD if they had been included in the study. Cultural factors such as shyness and embarrassment of Kurd women and lack of awareness and training of physicians lead to inadequate identification and management of these problems. This emphasizes the importance of direct questioning on sexual function as part of the routine checklists undertaken in gynaecology and family planning centres.

## CONCLUSION

This study provides estimates of the prevalence of FSD in Iranian Kurd women using the Iranian version of the FSFI. These results suggest that lifestyle changes may play a role in causation of FSD. Better understanding of the epidemiology of FSD is vital, to plan effective treatment and prevention strategies. FSD needs to be recognized as a significant public health problem in western Iran, with an urgent need for further research, particularly studies into awareness and competency of physicians in the management of FSD.

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