



Frequency Distribution of Female Sexual Dysfunction in Patients with Lower Urinary Tract Symptoms Referred to University Hospitals and a Private Urology Clinic

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ABSTRACT

Sexual Dysfunction [SD] is a common health problem among women that causes anxiety, interpersonal problems and a low quality of life. On the other hand, lower urinary tract symptoms [LUTS] are common among women, in particular in women suffering from FSD [female sexual dysfunction] although the relation between the two conditions is still unclear. Available data on the effect of LUTS on FSD are limited. The aim of this study is to evaluate the frequency of FSD in women with LUTS who referred to university hospitals [Razi and AL Zahra] and a private urology clinic in Rasht, Iran. In a cross-sectional study, 123 eligible patients suffering from LUTS entered the study. Validated Persian versions of the FSFI [Female sexual function index] and the Bristol questionnaires [BFLUTS] used to assess the participants and the data were analyzed using SPSS version 21. The mean age of women participating in this study was 40.64±6.18 years. FSD was diagnosed in 54.5% of the patients; 78.9% of these patients with FSD reported dysfunction in sexual desire, 78% reported sexual arousal disorder, 54.5% had lubrication disorders, 46.3% complained of orgasmic deficiency, 44.7% had sexual pain disorder and 37.4% had satisfaction voiding disorder. Based on the results, sexual dysfunction was common among women suffering from LUTS and sexual desire was the most frequently affected among FSD domains. In addition, our findings indicated that, contrary to common belief, issues such as the level of education have no significant effect on the frequency of FSD in women, but compared to women with normal sexual function, subjects with FSD were significantly older [P=0.0001].

Key words: Sexual Dysfunction, Female, Lower Urinary Tract Symptoms

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INTRODUCTION

Sexual dysfunction in women is a multifactorial and multidimensional medical problem which has biological and psychological components. FSD [female sexual dysfunction] is progressive and

often associated with old age; also it is so common as to affect 30-60% of American women [1]. Women's sexual health problems have different definitions and classifications. The most commonly used international classification on the subject includes 9 subgroups of 1] Sexual desire disorder, 2] Mental arousal disorder, 3] Physical arousal disorder, 4] Mixed arousal disorder, 5] Orgasmic dysfunction, 6] Dyspareunia, 7]

Vaginismus, 8] Sexual aversion disorder, 9] Arousal maintenance disorders [10]. An American study has shown that with a prevalence of 43% these disorders are more common in women than in men [31%], and this difference is attributed to demographic differences such as age and educational level [11]. All things considered, female sexual health issues are secondary to psychological, physical or interpersonal problems or a combination of these elements. Possible contributing factors include: psychological issues [such as a history of sexual abuse or trauma, depression, mood disorders and anxiety disorders, interpersonal problems between sexual partners], urological problems [such as interstitial cystitis, history of a radical cystectomy, recurrent UTIs and history of pelvic surgeries], gynecologic problems [such as endometriosis, history of hysterectomy, parturition, conception disorders, STIs, pelvic organ prolapse, abortion, episiotomy, menopause, uterine fibroid disorders, the postpartum period, pelvic inflammatory disease [PID], polycystic ovarian syndrome [PCOS], cervical cancer, breast cancer, Lichen sclerosis], chronic diseases [such as anemia, kidney failure], neurological problems [such as spinal injuries, multiple sclerosis, lumbosacral discopathy], endocrine disorders [such as diabetes mellitus, hypogonadism, thyroid diseases and hyperprolactinemia], being at risk for atherosclerotic cardiovascular disease, certain drugs such as antidepressants particularly SSRIs, opioids, combined oral contraceptives, fertility medications, antiandrogens, antihypertensive drugs, trauma to pelvis and perineum, aging, having a relationship with the same partner for a long period of time and sexual disorders of the partner, a marked lack of knowledge of sexual matters, unemployment, inaccurate cultural beliefs and a low educational status [10].

On the other hands, LUTS in women has a high incidence rate and a negative impact on women's quality of life. The overall incidence of LUTS in women estimated to be about 67% and increases along with age. In fact, the incidence of LUTS higher than a large number of other chronic diseases in women of old age [16-18]. Abnormal voiding in women caused by disturbances in the proper contraction of the smooth muscles of the bladder, abnormal relaxation of the urethral sphincter during voiding or a combination of these disorders. Also, there is a strong correlation between voiding abnormalities and pelvic floor disorders. Pelvic floor disorders can cause voiding problems and LUTS. Evaluation of voiding

problems in women and young girls is essential to prevent and treat incontinence, retention, UTI, and further kidney injuries; and making a correct diagnosis is essential to conduct a correct treatment plan. The etiology of voiding dysfunction is not entirely clear; although different etiology factors have been introduced in various literature, such as excessive contraction of the pelvic floor muscles to prevent the urinary incontinence [due to the instability of the detrusor muscle], pelvic surgeries, sexual abuse, psychological and emotional problems, psychotic and neurologic disorders [19]. In addition to a great impact on physical activities, social life and quality of sexual relationships, LUTS probably also affects the patient's sexual activities. On the other hand, sexual activities can influence the incidence of LUTS. 26-64% of women, who suffer from LUTS, will experience sexual problems in their sexual lives in the future [21-25]. Therefore, LUTS is a common problem among women especially in women suffering from FSD and it frequently occurs. Although the relation between LUTS and FSD has been weakly assessed to this point [26].

In this study, we aim to determine the incidence of FSD in patients who visit the University Hospitals [Razi and AL Zahra] and a private urology clinic with a complaint of LUTS.

MATERIALS AND METHODS

This cross-sectional study was done using questionnaires. 123 patients recruited from two outpatient clinics affiliated with university hospitals, Razi and AL Zahra and a private urology clinic in the city of Rasht, from January to September 2014. Patients were married women between the ages of 18 and 50. All women were literate, with a minimum education of 5th grade. All patients had at least one of the lower urinary tract symptoms and were sexually active [having had a minimum of one episode of sexual intercourse in the last 12 weeks]. The consent of the patient and her partner/husband was taken before enrollment. The exclusion criteria of the study are as follows: a history of mastectomy, total hysterectomy, pelvic organ prolapse surgery, limb amputation, current pregnancy, current lactation and breastfeeding, sexual function disorders in the partner, history of anemia, renal failure, CVA or MI in the past 12 months, urologic diseases such as interstitial cystitis, radical cystectomy, recurrent urinary tract infections, trauma to the pelvis, perineum or genitalia, opioid use, using

drug treatments for fertilization and ovulation, anti-androgen drugs, antidepressants, anticonvulsants, antihypertensive and psychotropic drugs, oral contraceptives, a history of thyroid disorders, polycystic ovaries syndrome [PCOS] and a vesicovaginal fistula [VVF]. Any patient who had undergone any of the following experiences in the past 3 months was also excluded: an acute psychologic disorder, acute kidney disease, acute liver disease, cardiovascular accident, having an active malignancy or patients undergoing cancer treatment [except non-melanoma skin cancers], and any other acute disorder that undermines the overall health.

Considering patients privacy and following ethical guidelines, we used the FSFI and BFLUTS questionnaires to evaluate patient’s sexual disorders and lower urinary tract symptoms respectively; which have been modified in accordance with the Iranian culture, have been used in Iranian populations before, and have been verified as a valid tool to evaluate sexual function disorders in Iranian women. The information on the effect of LUTS on the sexual health of women is quite limited. Therefore, here we aim to evaluate the incidence of FSD in patients who visit the university hospitals [Razi and AL Zahra] and a private urology clinic with a complaint of LUTS, using the FSFI and BFLUTS questionnaires. The FSFI [Female Sexual Function Index] questionnaire consists of a set of 19 multiple choice questions that assess women’s sexual function in 6 independent domains of, desire, arousal, lubrication, orgasm, satisfaction and pain [12, 13]. This questionnaire has been used in multiple studies in countries abroad and has shown a high degree of internal consistency reliability. The BFLUTS [Bristol Female Lower Urinary Tract Symptom] questionnaire has designed to assess and quantitatively evaluate the spectrum of LUTS in women and its effect on their sexual function and quality of life.

Statistical methods used to assess the data included descriptive methods [mean, frequency etc.]. The data were assessed using t-test and chi-squared test for normally distributed data and non-parametric tests were used otherwise. Multivariate logistic regression used to analyze the age-adjusted relation between sexual disorders and LUTS.

RESULTS

In this study, 123 patients with LUTS who had visited the Razi and AL Zahra outpatient clinics and private urology clinic underwent assessments of sexual dysfunctions and quality of life. The mean age of all evaluated patients was determined to be 40.64 ± 6.18 [22-50] years. The majority of patients had a high school education [48%] and was unemployed. In their parity history, 34% [42 patients] had a history of one delivery, 48% [59 patients] had two, 13% [16 patients] had three, and 4% [5 patients] had four or more deliveries. 46.3% [56 patients] in their history had only caesarean deliveries as their method of delivery, 47.1% [58 patients] had only normal vaginal deliveries and 6.6% [9 patients] had a history of both vaginal and caesarean deliveries.

Table 1: Patient’s personal and social characteristics

%	n.		
48	59	High school	Educational status
13	16	degree Associate	
13.8	17	Bachelor’s Degree	
0.30	4	Master’s degree	
22	27	High school dropout	
100	123	Total	
65	80	Housewife	Employment status
35	43	Employed	
100	123	Total	
34	42	1	Parity
48	59	2	
13	16	3	
4	5	≥ 4	
100	123	Total	
46.3	56	Normal vaginal delivery	Type of delivery
47.1	58	section-C	
6.6	9	Normal Vaginal Delivery and C-Section	
100	123	Total	
40.64		Mean	Age
6.18		deviation Standard	
22		Minimum	
50		Maximum	

In a comparative evaluation of individual and social characteristics, the patients were divided into two groups of with and without sexual dysfunction. Distribution of educational level [P=0.846], employment status [P=0.549], the number of deliveries and the delivery technique, of the two groups did not show a statistically significant difference [as shown in Table 2]. Although the difference between the mean age of the two groups was significant [P<0.0001] in a way that the mean age of the group with sexual dysfunction was higher than the group without [42.6 in contrast to 38.3]. A comparison between scores in different domains [using BFLUTS] in the With SD and Without SD groups is shown in Table

3. Base on this data the score is higher in all domains for women with sexual dysfunction in

comparison to women without sexual dysfunction [P<0.0001].

Table 2: A comparison of the distribution of personal and social characteristics in the two groups of with and without sexual dysfunction

P	Sexual dysfunction				
	With		Without		
	%	.n	%	.n	
0.842	52.5	31	47.5	28	High school
	56.3	9	43.8	7	degree Associate
	47.1	8	52.9	9	Bachelor's Degree
	75	3	25	1	Master's degree
0.549	59.3	16	40.7	11	High school dropout
	52.5	42	47.5	38	Unemployed/Housewife
0.816	58.1	25	41.9	18	Employed
	51.2	21	48.8	20	1
	59.6	34	40.4	23	2
	50	8	50	8	3
0.914	60	3	40	2	≥4
	54.5	30	45.5	25	Normal vaginal delivery
	55.4	31	44.6	25	C-Section
0.0001	62.5	5	37.5	3	Normal Vaginal Delivery and C-Section
	42.64		38.29		Mean
	5.06		6.58		deviation Standard
	25		22		Minimum
	49		50		Maximum

Table 3: A comparison between scores in different domains of the BFLUTS questionnaire in women with, and without sexual dysfunction

P	Sexual dysfunction					
	75 th percentile	25 th percentile	median	SD	mean	
0.0001	5	3	4	1.93	3.95	Urinary storagescore[0-15]
	10	5	7	3.08	7.46	Without SD With SD
0.0001	5	2	3	1.68	3.38	Urinary voiding scores[0-12]
	8	4	6	2.30	6.30	Without SD With SD
0.0001	5	3	4	1.50	4.25	Urinary incontinency score[0-16]
	9	6	7	2.83	7.52	Without SD With SD
0.0001	3	2	2	1.06	2.39	Sexual function score[0 – 6]
	4	3	4	1.11	3.79	Without SD With SD
0.0001	9.50	6	8	2.52	8.02	Quality of life score[0 - 19]
	15	11	13	2.87	12.60	Without SD With SD

Table 4: Sexual dysfunction scores in individual domains of FSFI

Median	Standard deviation	Mean	Score
3.60	0.90	3.57	SD score in the desire domain [1.2-6]
3.60	0.97	3.43	SD score in the arousal domain [0-6]
3.90	0.91	4.02	SD score in the lubrication domain [0-6]
4	1.02	3.76	SD score in the orgasm domain [0.8-6]
4	1.05	3.99	SD score in the satisfaction domain [0-6]
4	1.05	3.86	SD score in the pain domain [0-6]
23.20	5.11	22.62	SD score [2-36]

Table 5: Prevalence of sexual dysfunction according to FSFI questionnaire in individual domains and overall

	Total		With SD		Without SD	
	%	.n	%	.n	%	.n
SD in the desire domain	100	123	78.9	97	21.1	26
SD in the arousal domain	100	123	78	96	22	27
SD in the lubrication domain	100	123	54.5	67	45.5	56
SD in the orgasm domain	100	123	46.3	57	53.7	66
SD in the satisfaction domain	100	123	37.4	46	62.6	77
SD in the pain domain	100	123	44.7	55	55.3	68
Sexual dysfunction	100	123	45.5	67	45.5	56

Table 6: Predicting factors of SD according to backward LR analysis

95% C.I. for OR		Odds Ratio	Sig.	S.E.	B	
Upper	Lower					
2.508	1.287	1.797	0.001	0.170	0.586	Score pertaining to incontinency score
3.325	1.003	1.826	0.049	0.306	0.602	Score pertaining to sexual problems
2.207	1.236	1.625	0.001	0.148	0.502	Score pertaining to quality of life
17.756	1.228	4.669	0.024	0.681	1.541	Employed vs. unemployed
		0	0	0.985	-10.423	Constant value

In Table 4, sexual dysfunction in patients is scored using the FSFI questionnaire. The highest and lowest possible scores were 36 and 2. Based on the collected data, the mean and standard deviation were measured 22.6 ± 5.11 , with an average of 23.2. Based on a descriptive analysis, with a mean and standard deviation of 4.02 ± 0.91 , lubrication was the most commonly reported dysfunctional domain and arousal with a mean and standard deviation of 3.43 ± 0.97 were the least commonly reported dysfunctional domain. Table 4 demonstrates patients' score on sexual dysfunction statistically indicated by the cutoff point of the tool [cutoff is 65% of the highest possible score]. The individual score of each domain is shown in Table 5, which further demonstrated the percentage of patients who had dysfunction in each domain: 78.9% had SD in desire, 78% in arousal, 54.5% in lubrication, 46.3% in orgasm, 37.4% in satisfaction, 44.7% had SD in the domain designated to pain; and overall 54.5% of patient had sexual dysfunction [Figure 1]. Based on this data, desire and satisfaction domains were the most and the least reported domains of sexual dysfunction respectively.

In order to analyze the predicting factors of sexual dysfunction based on the BFLUTS scores and individual and social variables, we used a backward multiple logistic regression analysis. In the single variable analysis in the tables above, the following variables had a statistically significant correlation with the presence of SD: the urinary incontinence score [$P=0.0001$], the sexual function score [$P=0.049$] and the quality of life score [$P=0.001$]. Employment was also determined as a predicting factor [$P=0.024$]. As shown in Table 6, as the urinary incontinence score increases by one, the probability of having sexual problems, a decreased quality of life and sexual dysfunction, multiply by 1.82, 1.79 and 1.65 respectively. Also being employed increases the chances of having sexual dysfunction 4.6 times.

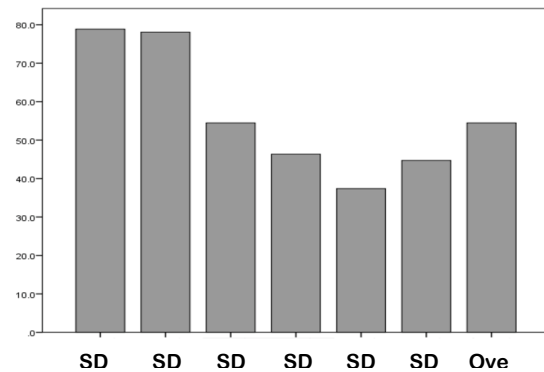


Figure 1: Percentage of dysfunction Incidence

DISCUSSION

Sexual dysfunction [SD] is a common problem that according to different studies affects 30-78% of women; and causes anxiety and interpersonal problems [10]. There are different definitions and classifications for women's sexual health in place. The most commonly used international classification on the subject includes 9 subgroups: 1] Sexual desire disorder, 2] Mental arousal disorder, 3] Physical arousal disorder, 4] Mixed arousal disorder, 5] Orgasmic dysfunction, 6] Dyspareunia, 7] Vaginismus, 8] Sexual aversion disorder, 9] Arousal maintenance disorders [10]. All things considered, female sexual health issues are secondary to psychological, physical or interpersonal problems or a combination of those elements [10]. In addition to a great impact on physical activities, social life and quality of sexual relationships, LUTS also probably affects the patient sexual activities. On the other hand, sexual activities can influence the incidence of LUTS. 26-64% of women, who suffer from LUTS, will experience sexual problems in their sexual lives in the future [21-25].

LUTS is a common problem among women, especially in women suffering from FSD. Although the relation between LUTS and FSD has been weakly assessed to this point [26]. In this study, the mean and standard deviation of the age of the

participants was 40.64 ± 6.18 . In a study done by Salonia *et al.* the mean age of participants was 54 [from 19 to 63 years old] [24]. In our study, almost 50% of participants had a high school education [48%] and were mostly unemployed [65%]. A C-section was the most commonly used method of delivery among our study participants [47.1%] as opposed to the study done by Jafarzadeh Esfehiani *et al.* were 34.1% of patients had an educational status lower than high school and a normal vaginal delivery was the most commonly used method of delivery [2].

In this study, the distribution of educational status, employment status, the number, and technique of deliveries were not different in a statistically significant way in the groups of with and without sexual dysfunction. But the difference of mean age in the group with sexual dysfunction was significantly higher than the group without SD. In the study done by Jafarzadeh-Esfahani *et al.* compared to women with a normal sexual function, women suffering from sexual dysfunction were significantly older and had a lower level of education [2]. The mean and standard deviation of the dysfunction in the urinary storage scores in the two groups had a statistically significant difference; in a way that the mean score in the group with sexual dysfunction was 3.5 points higher than the group without SD. In an individual comparison of the items pertaining to urinary storage, the frequency of problem in each item was higher in the group with sexual dysfunction in a statistically significant way.

The mean of dysfunction of the quality of life scores in women with SD [12.6 ± 2.87 , with a median of 13] is 5 points higher than of those without SD [8 ± 1.52 , with a median of 8]; which is statistically significant. In a study done by Salonia *et al.* it showed that a diagnosis of the overactive bladder has a negative impact on their quality of life and sexual function [24]. The score given to each domain of the BFLUTS was higher in women with SD than in those without SD in a statistically significant way. Barber *et al.* also reported that the incidence of sexual dysfunction in women suffering from urinary incontinence or LUTS is higher than the general population [32]. Overall, Frequency of sexual dysfunction in our sample population was 54.5% and the most and least commonly reported domain with dysfunction were desire [78.9%] and satisfaction [37.4%], respectively. In a study done by El Atrash *et al.*,

74% of women had SD and the most common form of dysfunction was reported as a hypoactive sexual desire [86%], and satisfaction [36%] was the least commonly reported form of dysfunction [33].

In the presented study, the FSFI questionnaire was used. The highest and lowest possible scores were 36 and 2. According to the collected data, the mean and standard deviation were measured 22.6 ± 5.11 , with an average of 23.2. Based on a descriptive analysis, with a mean and standard deviation of 4.02 ± 0.91 , lubrication was the most commonly reported dysfunctional domain and arousal with a mean and standard deviation of 3.43 ± 0.97 were the least commonly reported dysfunctional domain. In the study done by Jafarzadeh Esfehiani *et al.*, FSFI was also used and SD score mean and standard deviation was reported 23 ± 9.84 and with a mean and standard deviation of 4.40 ± 1.78 , sexual dysfunction in the satisfaction domain was the most commonly reported problem among study participants; whereas desire was the least reported dysfunctional domain with a mean and standard deviation of 3.25 ± 1.55 [2].

In our study, urinary incontinence and sexual dysfunction scores along with employment status indicated as predicting factors of sexual dysfunction. In a way that as the urinary incontinence score increases by one, the probability of having sexual problems, a decreased quality of life and sexual dysfunction, multiply by 1.82, 1.79 and 1.65 respectively. Also being employed increases the chances of having sexual dysfunction 4.6 times. Although in the study done by El Atrash *et al.* Factors such as age, employment status, duration of the marriage, the number of parity etc. not found to have a predicting value for SD in women and none of them are independent risk factors for sexual dysfunction [33].

CONCLUSION

According to the results of this study, the frequency of sexual dysfunction in our study population was measured at 54.5%; among which dysfunction in the domain of desire was the most commonly reported problem [78.9%]. Therefore, with the high frequency of sexual dysfunction, it appears that designating specific centers to assessment, evaluation, diagnosis, and treatment of sexual dysfunction in women can play an

important role in decreasing the incidence of SD and improving women's quality of life. It is also noteworthy that due to the high incidence of SD in women suffering from LUST, physicians should pay attention to signs and symptoms of sexual dysfunction in women with LUTS and follow-up with the patient's sexual function status during the course of treatment.

Research Recommendations

We encourage anyone who is interested in this field to investigate different forms of sexual dysfunction individually in women with LUTS on a larger population of women.

Conflict of Interest

The author[s] declares[s] that there is no conflict of interest regarding the publication of this paper.

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