Prevalence, Risk Factors and Women's Attitude towards Female Sexual Dysfunction in Upper Egypt: Hospital based study

Original Article

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ABSTRACT

Objective: to investigate the prevalence and possible risk factors that may cause FSD in Upper Egypt women and to study their attitude towards their sexual dysfunction.

Study design: a cross sectional hospital based study setting: Assiut University Hospital, Assiut, Egypt

Materials and methods: We included consecutive healthy sexually active Egyptian women aged between 18 and 55 years who had visited the hospital for routine check-up, women accompanying other patients and non medical female hospital staff. We used the Arabic version of the Female Sexual Function Index (Ar-FSFI) in the interview to evaluate the sexual functions or problems during the last month. The cut-off score used to indicate sexual dysfunction was 28.1.

Results: a total of 583 healthy sexually active married females were approached, of whom 500 (85.8%) accepted to participate in the study. About 339 women (67.8%) had sexual dysfunction. The total mean FSFI score for women with sexual dysfunction was 16.73±7.50 compared to 31.31±1.43 for women without sexual dysfunction (p<0.001). FSD was significantly more common in older (p=0.000), less educated women (p=0.000), house wives (p=0.000) and women who live in rural communities (p=0.009). Logistic regression using the risk factors for the presence of FSD was performed. Age, residence, level of education, menopause, number of children, duration of marriage and the use of contraception were statistically significant risk factors that may predict the presence of FSD in participating women.

Conclusions: The reported high prevalence of FSD indicates that sexual dysfunction is an important public health problem in Upper Egypt that has not been investigated. It highlights the need to establish sexual disorders clinics in our environment and to improve physicians' awareness and competency in FSD.

Key Words: arousal, desire, FSFI, sexual dysfunction, orgasm.

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INTRODUCTION

Female sexual dysfunction (FSD) is a common health concern. It is manifested by difficulties getting aroused, lubricated, or having an orgasm despite adequate stimulation[1, 2]. According to the published epidemiological studies, the prevalence of FSD is ranging from 19% to 63%, and increases up to 93% in certain age groups[3- 8]. However, it remains a taboo subject in many countries including Egypt[9, 10]. Cultural and religious values, poor sexual education, and feelings of embarrassment reduce women's chances of getting help[11].

Female sexual function may be affected by several interpersonal, psychological, physiological, medical, social, and cultural factors[3]. Studies have shown that FSD might have a negative impact on women's sense of well-being and quality of life[12]. In addition, it forms a vicious circle with infertility, as neglected sexual dysfunction may hinder fertility which leads to accumulative stress that may ruin couples' or individuals' sexuality and end up with arousal difficulties[13].

Despite the consequences of FSD, it is still under investigated in Egypt, which is attributed mainly to the conservative nature of Egyptians (especially Upper Egyptians) toward sex, in general, and female sexuality, in particular[9]. To the best of our knowledge; there is only one Egyptian study on FSD using standard questionnaire in Lower Egypt[14].

The aim of the present study was to investigate the prevalence and possible risk factors of FSD in a sample of women in Upper Egypt, and to study their attitude towards their sexual dysfunction.

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PATIENTS AND METHODS

2.1 Study design, settings

The current study was a cross sectional hospital-based study carried out at the outpatient clinics of Dermatology and Gynecology departments at Assiut University Hospital, Egypt between June 2014 and May 2015.

The study protocol had been approved by the Institutional Review Board, and informed written consent to participate in the study had been obtained from all participants.

2.2 Study participants

The study included consecutive healthy sexually active Egyptian women aged between 18 and 55 years who had visited the hospital for routine check-up, women accompanying other patients and non medical female hospital staff. Women with chronic medical illnesses, psychiatric illness, pregnancy and lactation and those with no sexual activity in the last 6 months were excluded from the study.

The sample size for the study was calculated using the following formula[15]: N= {Z2 (1–P)P}/D2 where: N: minimum sample size required, Z: standard normal variance=1.96 at 95% confidence interval, D: Absolute standard error that can be tolerated =0.05 and P: prevalence= 50% (based on previous studies in Iran, Saudi Arabia, Turkey and Egypt)[4- 6, 9].Thus, a sample size of 384 women was needed to achieve the aim of the study.

2.3 Study intervention

All participants were interviewed, in a private room and two questionnaires were answered. The names and addresses of the patients were not recorded to ensure confidentiality. The first questionnaire included socio-demographic and marital history. In addition women were asked if they believe they or their partners had any sexual problems. Women who reported to have a sexual problem, were asked about the main provoking cause, whether they had sought treatment for their condition and if not, why?

The second questionnaire included the Arabic version of the Female Sexual Function Index (Ar-FSFI)[16]. This 19-item standardized questionnaire covers six domains; desire, arousal, lubrication, orgasm, satisfaction, and pain. It evaluates sexual functioning or problems during the last month. The cut-off score used to indicate sexual dysfunction was (28.1)[16].

2.4 Statistical analysis

All data were analyzed using SPSS software Chicago, IL, USA, version 21. Qualitative data were expressed as frequency and percentage. Chi-square test was used to examine the relation between qualitative variables. Quantitative data were presented in terms of mean, standard deviation. For quantitative data, comparison between two groups was done using Student-t test. Logistic regression analysis was done for the studied variables to predict the risk factors for FSD among participants. Level of significance "P" value was evaluated, where *P* value < 0.05 is considered of significant value.

RESULTS

A total of 583 healthy sexually active married females were approached, of whom 500 (85.8%) met the inclusion criteria and accepted to participate in the study. Their age ranged from 18 to 55 years with a mean ± SD (32.94 ± 9.76 years). Most of them were in the age range 20 to 39 years (62.0%). The socio-demographic features and marital data were shown in (Table 1).

Based on the total sexual function score 339 women (67.8 %) had sexual dysfunction. The mean total FSFI score for women with sexual dysfunction was 16.7 37.50± compared to 31.31± 1.43 for women without sexual dysfunction (*p*=0.001). Comparison of the individual domain scores revealed that women in the sexual dysfunction group had significantly (*p*=0.001) lower scores for all domains compared with women without sexual dysfunction, with the lowest scores noted in the arousal and orgasm domains (Fig 1).

(Table 2) shows that FSD was significantly more common in older (*p*=0.000), less educated women (p=0.000), housewives (*p*=0.000) and women who live in rural communities (*p*=0.009). FSD is significantly more common in those who got married at age younger than 20 and older than 25 years (*p*=0.017), those with marriage duration ≥15 years (*p*=0.000), menopausal women (*p*= 0.000) and in women who had 5 or more children (*p*=0.011). Also, FSD was more common in women who report that their partners have sexual problems (*p*=0.000).

Moreover, there a statistically significant negative correlation between total FSD score and age (r=-0.33, *p*=0.000), duration of marriage (r=-0.38, *p*=0.000) and number of children (r=-0.27, *p*=0.000).

From the women's point of view, only 3% (n=15) of their partners were suffering from impotence and 19.4% (n= 97) were suffering from premature ejaculation. Women with FSD were more likely to report male partner sexual dysfunction (*p*=0.000) compared to those without FSD (Table 2).

Logistic regression analysis using the risk factors for the presence of FSD was performed. Age, level of education, menopause, number of children, duration of

marriage and the use of contraception were the identified risk factors that may predict the presence of FSD in participating women (Table 3).

The percentage of women who acknowledged having sexual problem was 43.4% of participating women (n=217). They blamed their partners' sexual problem (42.4%, n=92) and inadequate foreplay (39.2%, n=85) as the most common provoking factors for their condition (Table 4). The majority of those who thought they had a sexual problem (n=187, 86.2%) admitted that they had not seek medical help and their main reason was “It is an embarrassing topic” (65.2%).

Table 1: Socio demographic and marital characteristics of participating women (n = 500).

Variables	Total n=500 No. (%)
Age (years)	
<20	48 (9.6)
20–<30	150 (30.0)
30–<40	160 (32.0)
40–<50	118 (23.6)
≥50	24 (4.8)
Education	
Illiterate	70 (14.0)
Primary	95 (19.0)
Secondary:	131 (26.2)
University	204 (40.8)
Residence	
Rural	213 (42.6)
Urban	287 (57.4)
Age at marriage (years)	
<20	129 (25.8)
20-25	218 (43.6)
>25	153 (30.6)
Duration of marriage (years)	
<5	151 (30.2)
5-<10	113 (22.6)
10-<15	87 (17.4)

≥15	149 (29.8)
Menopause	
Yes	80 (16.0)
No	420 (84.0)
No. of children	
None	135 (27.0)
1-2	187 (37.4)
3-4	95 (19.0)
≥5	83 (16.6)
Circumcision:	
Yes	295 (59.0)
No	205 (41.0)

Table 2: Female sexual dysfunction proportional to socio demographic and marital characteristics of participating women (n=500).

		Women without FSD (n= 161)		Women with FSD (n= 339)		*p*-value
		No.	%	No.	%	
Age (years)	< 20	9	18.8	39	81.3	
	20 - < 30	69	46.0	81	54.0	
	30 - < 40	68	42.5	92	57.5	0.000*
	40 - < 50	13	11.0	105	89.0	
	≥ 50	2	8.3	22	91.7	
Residence	Rural	55	25.8	158	74.2	0.009*
	Urban	106	36.9	181	63.1	
Education	Illiterate	15	21.4	55	78.6	
	Primary	8	16.3	41	83.7	
	Preparatory	9	19.6	37	80.4	0.000*
	Secondary	32	24.4	99	75.6	
	Collage	97	47.5	107	52.5	
Occupation	House wife	74	25.0	222	75.0	0.000*
	Working	87	42.6	117	57.4	

Circumcision	Yes	91	30.8	204	69.2	0.437
	No	70	34.1	135	65.9	
Age at marriage	< 20 years	34	26.4	95	73.6	
	20 - 25 years	85	39.0	133	61.0	0.017*
	> 25 years	42	27.5	111	72.5	
Duration of marriage	< 5 years	55	36.4	96	63.6	
	5 - < 10 years	53	46.9	60	53.1	0.000*
	10 - < 15 years	32	36.8	55	63.2	
	≥ 15 years	21	14.1	128	85.9	
Menopause	Yes	2	2.5	78	97.5	0.000*
	No	159	37.9	261	62.1	
No. of children	No children	45	33.3	90	66.7	
	1 – 2	62	33.2	125	66.8	0.011*
	3 – 4	39	41.1	56	58.9	
	5 or more	15	18.1	68	81.9	
Use of contraception	Yes	95	41.5	134	58.5	0.000*
	No	66	24.4	205	75.6	
Male sexual problems	No	152	39.2	236	60.8	
	Impotence	0	0.0	15	100.0	0.000*
	Premature ejaculation	9	9.3	88	90.7	
Intercourse frequency	< once per week	22	14.9	126	85.1	
	1-2 per week	33	26.8	90	73.2	0.001*
	3-4 per week	75	45.2	91	54.8	
	≥5 per week	31	49.2	32	50.8	

FSD: Female sexual dysfunction
(*) statistical significant difference, p-value was tested by Mann-Whitney U test.

Table 3: Risk factors for Female sexual dysfunction

Risk factors	*p*-value	Odds Ratio	95% Confidence Interval	
			Lower	Upper
Age	0.004	1.090	1.028	1.156
Residence (rural)	0.812	1.067	0.623	1.830
Education	0.000			
Basic education	0.001	5.288	1.961	14.265
Secondary	0.001	5.531	2.088	14.651
Collage	0.394	1.557	0.563	4.303
Occupation (working)	0.329	0.724	0.379	1.385
Menopause	0.024	6.667	1.279	34.754
No. of children	0.004			
1 – 2	0.031	2.181	1.076	4.422
3 – 4	0.470	0.704	0.271	1.825
5 or more	0.620	0.754	0.247	2.301
Duration of marriage	0.048			
5 - < 10	0.157	0.607	0.304	1.211
10 - < 15	0.865	0.920	0.350	2.416
≥ 15	0.266	2.044	0.580	7.203
Use of contraception	0.000	0.306	0.163	0.575

Table 4: Women's opinion about their sexual function, cause of dysfunction and help seeking behavior

	No.	%
Do you think you have sexual dysfunction (n=500):	.	
Yes	217	43.4
No	283	56.6
What do you think the cause of your sexual problem (multiple answers were allowed) (n=217):		
Partner's sexual problem	92	42.4
Lack of foreplay	85	39.2
Excessive chores	72	33.2
Lack of interest	67	30.9
Marital disharmony and hate	54	24.9
Dyspareunia	12	5.5
Unfavorable conditions*	63	29.03
Others**	5	2.3
Did you Seek medical advice for FSD (n=217):		
Yes	30	13.8
No	187	86.2
Why not? (n=187):		
It is an embarrassing topic	122	65.2
I am afraid that my husband may know	26	13.9
I didn't think about it	15	8.02
I believe that doctors cannot help	15	8.02
I do not know which clinic to go to	9	4.8

* Unfavorable conditions include; crowded place, children awake at night, poor communication.
** Others include; fear of getting pregnant, embarrassment from their own bodies or not feeling loved.

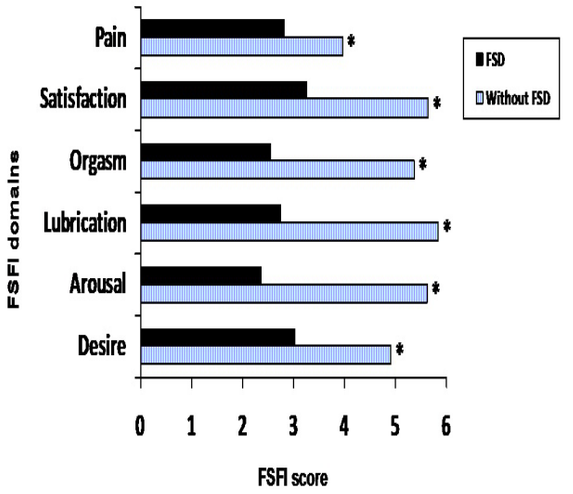

Fig. 1: The mean scores of all domains of Female sexual function Index in women with and without sexual dysfunction

DISCUSSION

It is increasingly recognized world-wide, that sexual health is important for overall good health and well-being. FSD is widespread complex disorder that is clearly distinct and more prevalent than sexual dysfunction in men[3]. In the present study, the prevalence of FSD among 500 sexually active married women aged from 18- 55 years was 67.8%. A much lower prevalence rate (52.8 %) was reported by Ibrahim *et al*[14] in their study of 508 Egyptian women from Suez district using FSFI.

The reasons of this difference may be that they used the cutoff value ≤ 26.55 total score, reported by Wiegel *et al*[17] in their analysis of a U.S. sample of women while we used the cutoff value ≤ 28.1 total score, reported by Anis *et al*[16] for Egyptian population. Another explanation for that difference is the cultural, educational, and socioeconomic differences between the two study populations (Lower Egypt vs. Upper Egypt). Lower prevalence rates were also reported in other Middle East countries such as Iran (46.2%)[4], Saudi Arabia (48.9%)[5], and Turkey (43.4%)[6].

Two older studies had been performed in Egypt to determine the prevalence of FSD but none of them had used validated questionnaire. The first study was carried out in a number of medical centers in Dakahalia governorate (Lower Egypt)[18], and the second one in Sohag University Hospital (Upper Egypt)[9]. They reported that the percentage of women having one or more sexual problems is 68.9% and 76.9% respectively.

Women with FSD in our study reported significantly low scores on all subscales of the FSFI, compared with women without FSD, with the lowest score in the arousal and orgasm domains. Similar results were reported in Egypt[14], Saudi Arabia[5], USA[19] and Turkey[6]. Contrary to our findings, Chedraui and colleagues[20] found that lubrication and pain are the most affected domains.

The significant association of FSD and older age which is maintained in the regression model is supported by several previous studies[4- 6, 12- 14]. It is probably due to the physiological processes of aging which effect on sexual function depends on several psychological, pharmacological and illness related factors. Another explanation is the increasing demands of growing children. In contrast to our finding, Fajewonyomi *et al* reported that women with younger age are at greater risk for FSD[21].

We found that FSD is more common in women living in rural communities which may be explained by the inability of women in such conservative communities to express or discuss their sexual needs increasing the probability of sexual dysfunction. In contrast to our finding, previous studies in Lower Egypt found no significant correlation between FSD and residence[14, 18]. This contrast is expected; because the cultural, educational and socio economic differences between urban and rural communities are more evident in Upper Egypt.

FSD was significantly more common in housewives, illiterate and low educated women, which may be explained by their lack of knowledge and inability to get information to solve their problems. Previous studies reported conflicting results as regards relation of FSD and education level, some authors supported our findings[22, 23], while others reported that FSD is significantly higher in highly educated women[5, 14, 21] which was attributed to the possibility that a higher level of education may be associated with an increase in a women's ability to express her dissatisfaction.

Tehrani and colleagues[24], reported increase FSD in recently married women and they believed that with increased duration of marriage women become more experienced about their sexual function and satisfaction and they develop stronger emotional relationship with their spouses. In contrast to Tehrani *et al*[24], and other previous studies[5, 18], we reported increase prevalence of FSD in women married since 15 or more years, and a significant negative correlation between FSFI total score and duration of marriage which may be explained by their increasing age, lack of privacy in the presence of growing children and increasing their awareness about their sexual dysfunction. Our study

concurs with both Ibrahim *et al*[14], and Hassanin *et al*[9], whose results showed increase prevalence of FSD in women married for more than 10 years.

Significant high prevalence of FSD was also reported in those who got married at young age (< 20 years old). Previous studies in Iran[10] and Saudi Arabia[5], reported similar results. It may be explained by shyness, embarrassment and lack of sexual education of young women. High prevalence of FSD in menopausal women, was previously reported and can be attributed to the hormonal changes and to other features of the natural aging process[25] However two older studies reported that menopause is associated with only some aspects of sexual dysfunction and not the total score[26, 27].

Women with FSD were more likely to have had 5 or more children. This association was attributed to the anatomical changes caused by repeated deliveries, hormonal changes, lack of privacy for sexual encounters and increased responsibility of taking care of the family[5, 14]. El-Nashar *et al*[18] reported that nulliparity is also a potential risk for FSD due to psychological and hormonal factors. Increase prevalence of FSD in women who do not use any method of contraception in this study may be attributed to fear of impregnation. In contrast to our finding, Jaafarpour *et al*. and Ismail *et al*, reported that the use of contraception did not show significant association with sexual dysfunction[4, 5].

Several researchers suggested that female sexual function is affected by male partner's sexual dysfunction and that FSD may improve after the treatment of male sexual dysfunction[28]. In this study, women with FSD reported more sexual dysfunction in their partners, which is in agreement with the findings of Ismail *et al*[5] and Aslan *et al*[6]. Moreover 42.4% of women claimed that their partners' sexual problem is the reason o for their sexual dysfunction. In contrast to our findings, Worly *et al*[19] reported that women without sexual dysfunction were more likely to report male partner sexual problem. However this was the women impression and not an actual diagnosis.

It appeared that circumcision had no significant effect on sexual function of women in our study. This is in agreement with Reda *et al*[29], who reported normal total FSFI score in circumcised women. They explained their result by the fact that circumcision is a traditional religious celebration in Egypt which might ameliorate the negative psychological impact of this traumatizing event on women. However, these findings are in contrast to previous studies which reported significant decline of sexual function in circumcised women[5,18]. Another possible explanation of this contrast is that the presence of circumcision in this study was determined by history only and was not confirmed by genital examination. (This is a limitation in this work; another study to explore the effect of different types of female circumcision on sexual function is pending).

Foreplay is an essential part of the sexual activity for both partners[30]. In the present study, 39.2% of women who believed they had sexual dysfunction reported inadequate foreplay as the main provoking factor for their dysfunction. This supports the findings of "The Global Better Sex Survey" which studied 12,563 male and female participants and revealed that foreplay was important to both partners[31]. Another study reported that inadequate foreplay is the main complaint of women with FSD[32]. Similarly, in an online survey of 2,920 females in the Middle East, 60% of participants reported inadequate foreplay and was the cause for dyspareunia in 33.4%.of them[30].

In the present study, 86.2% of women who believed they had sexual dysfunction admitted that they did not seek medical help. Their main reason was that "It is an embarrassing topic". In a conservative community such as Lower Egypt, as a girl matures, she is expected to keep a culture of silence regarding her own sexuality. This attitude suppresses her ability to access sexual health information for fear that her reputation will be ruined[5]. The reluctance to initiate a discussion about sexual health due to embarrassment and lack of knowledge needs well trained physician to encourage women to overcome their embarrassment and address their sexual problems.

CONCLUSION

This study provides estimates of the prevalence of FSD in Upper Egypt using a validated instrument. Research in the area of female sexuality is relatively challenging in Egypt. Although FSD is highly prevalent, cultural factors, lack of awareness and negative attitude of women towards addressing their sexual problems lead to inadequate identification and management of these problems. This emphasizes the importance of recognizing FSD as a significant public health problem in Upper Egypt, with an urgent need for further research, particularly studies into awareness and competency of physicians in the management of FSD.

CONFLICT OF INTEREST

There are no conlficts of interest.

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