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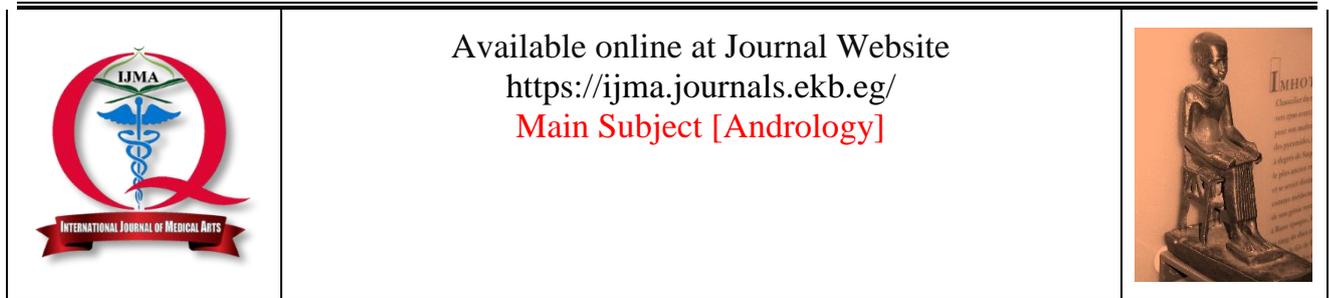
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Original Article

Prevalence of Female Sexual Dysfunction among Five Hundred Women at the Childbearing Period in Upper Egypt: A Cross-Sectional Study

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ABSTRACT

Background and purpose: Sexual dysfunction adversely affect the quality of life, self-esteem, and interpersonal relationships. Our aim of the study is to evaluate the prevalence and associated risk factors of female sexual dysfunction among women in Upper Egypt.

Patients and methods: A cross-sectional descriptive study that included 500 women aged between 18 and 35 years attended the outpatient dermatology clinic, Al-Azhar University Hospital, Assiut. Female sexual function was evaluated by the Arabic version of the Female Sexual Function Index.

Result: The prevalence of female sexual dysfunction was reported in 252 /500 [50.4%] cases, with Pain disorder being the predominant sexual domain disorder in 39.6% of the cases, then orgasmic disorder, satisfaction disorder, arousal disorder, lubrication disorder, and desire disorder in 32%, 26%, 19.2%, 15.6%, and 11.6% respectively. A Positive significant correlation between female dysfunction and sexual problems in husbands, and low Intercourse frequency. The orgasmic disorder was associated with a low level of education, husband age > 40 years, and progesterone only contraception uses. Women living in urban areas have a positive correlation with Satisfaction, Arousal, and Lubrication disorders. Desire disorder predominated in employed women, and Pain disorder diminished with age progression.

Conclusion: Female sexual dysfunction is a significant health problem in Upper Egypt. Pain and orgasmic disorders were the most predominantly affected domains. Sexual problems with husbands are the most common risk factor. Further research is desirable to assess the extent of the problem.

Keywords: Sexuality, Women, Risk factors, Upper Egypt.

INTRODUCTION

Female sexual dysfunction is a disorder that prevents women from achieving the pleasure of sexual activity [1]. According to the Diagnostic and Statistical Manual of Mental Diseases, sexual dysfunction is characterized by a disturbance in the sexual response cycle or by pain associated with sexual intercourse. It is defined as a disorder of sexual desire, arousal, orgasm, and/or sexual pain [2]. Sexual dysfunction is often multifactorial and can be associated with age, religion, employment, social strata, level of education, and medical, and psychological factors [3]. The evaluation of female sexuality consists of questionnaires, structured interviews, and comprehensive history taking. Questionnaires are currently optimal for screening women into various categories [4].

Sexual dysfunction affects 22–43 percent of women globally, although it is under-reported, with research suggesting that less than a quarter of patients disclose their problems with their doctors. Sexual functioning relates to the quality of life, with 10.8–14 percent of patients suffering distress because of its symptoms, despite being a poorly addressed topic [5]. Even though female sexual dysfunction is a prevalent health issue, it is still understudied, especially in Eastern countries where open conversation is considered a taboo. Furthermore, Arabic society is particularly conservative when it comes to sex and female sexuality [6].

AIM OF THE WORK

The purpose of our study is the assessment the prevalence and associated risk factors of female sexual dysfunction among women in the Assiut governorate.

PATIENTS AND METHODS

This study is a cross-sectional study carried out at the outpatient clinics of dermatology and andrology - Al-Azhar University Hospital - Assiut governorate from October 2021 to April 2022. The research protocol had been approved by the Institutional Review Board, and verbal consent to participate in the study had been obtained from all participants.

Using One Proportion Analysis in G Power program, a minimum sample size to assess the prevalence of female sexual dysfunction among women of Assiut governorate was 384 women so we enrolled 500 women in our study.

Consecutive healthy married Egyptian women aged 18 to 35, with regular sexual activity in the month prior to the interview, who had attended the hospital for a normal check-up, ladies accompanying other patients, or non-medical female hospital staff were enrolled in the study. Females with chronic or severe medical illnesses or psychiatric diseases [e.g., schizophrenia and major depressive disorder], females with neurological problems, and pregnant, or lactating women were also excluded.

Personal interviews were used to collect data, and two questionnaires were completed. To maintain confidentiality, the patients' names and addresses were not recorded. For illiterate women, a self-structured Arabic questionnaire was completed and filled out.

Age, residence, occupational status, level of education, circumcision exposure, age at which they first had intercourse, frequency of intercourse, age and sexual problems with the husband, parity, duration of the marriage, contraception use, and reasons for sexual dysfunction reported by women are all included in section [I].

The Arabic version of the Female Sexual Function Index is section [II] [Ar-FSFI]. Desire, arousal, lubrication, orgasm, satisfaction, and pain are the six domains covered by this 19-item standardized questionnaire. It assesses sexual functionality and issues throughout the previous month [7, 8].

Sexual dysfunction was defined as having 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], an orgasm score of 3.4 or less [score range 0 to 5], a satisfaction score of 3.8 or less [score range 0 to 5], a satisfaction score of 3.8 or less [score range 0 to 5]. A score was determined for each of the six domains, and the overall score was derived by aggregating the six domain scores. The overall score ranged from 2 to 36. A total score equal or more than 28.1 was thought to indicate normal female sexual function, whereas a total score of less than 28.1 was thought to indicate sexual dysfunction [7].

Statistical Analysis: SPSS [Statistical Package for Social Sciences] software, Chicago, IL, USA, version 21 was used to analyze all the data. Frequency and percentage were used to express qualitative data. The relationship between qualitative factors was investigated using the Chi-square test. The mean and standard deviation were used to present quantitative data. To predict the risk factors

for female sexual dysfunction among participants, a logistic regression analysis was performed on the analyzed variables. The level of significance, or "P" value, was calculated, with a P-value less than 0.05 considered significant.

RESULTS

Five hundred women were enrolled in our study; the age mean was 29.69±4.47 years. 447 / 500 [89.4%] were Unemployed or housewife. 377/500 [75.4%] were from rural areas. 23/500 [4.6%] of women reported having psychological stressors. Most women 491/500 [98.2%] were circumcised. Women reported that their partners have sexual problems in 43/500 [8.6%]; 27/500 [5.4%] as premature ejaculation; 16/500 [3.2%] as erectile dysfunction.

The Prevalence of Female sexual dysfunction was 252/500 [50.4%] [**Fig. 1**]. The study subjects' demographic characteristics have been illustrated in [**Table1**] and significant risk factors in **Table [2]**.

Pain disorder was the uppermost domain disorder reported [39.6%], while desire disorder was the lowermost [11.6%] [**Table 3**]. Pain disorder was diminished with age progression [P = 0.015]. Pain disorders were more common with low intercourse frequency [OR: 3.4, 95% CI: 1.4-8.2]; P = 0.008. A significant relation between history of trauma [genital, obstetric, etc.] as a reason for sexual dysfunction reported by women and pain disorder [OR: 19.7, 95% CI: 4-97]; P <0.001.

Women with an elevated level of education show less orgasmic disorder; P <0.001, and husbands with sexual problems have more orgasmic disorders; P <0. 001.Orgasmic disorder was associated with other risk factors as: husband age > 40 years [OR: 1.49,95% CI: 1.027- 2.190]; P = 0.036, and Less intercourse frequency P <0.001. and Poor partner performance and technique as a reason of sexual dysfunction; P <0.001.

Satisfaction disorder was less common in women living in rural areas [P = 0. 009]. Hormonal contraception and husband sexual problem was associated with Satisfaction disorder P = 0 .005; P <0.001 respectively.

Arousal disorder less common with women living in rural areas P= 0 .027, the women who used progestin-only as contraceptive method P = 0 .003, and poor partner performance and technique as a reason for sexual dysfunction P <0.001.

Lubrication disorder was less common in women living in rural areas P= 0.011, and more common with abstinence as a contraception method P= 0.003, and with genital trauma and deficient performance as reasons reported by women [P <0.001].

Desire disorder has a negative correlation with employment; P <0.001, and conflict in the relationship with her partner as a reason for sexual dysfunction reported by women; P<0.001.
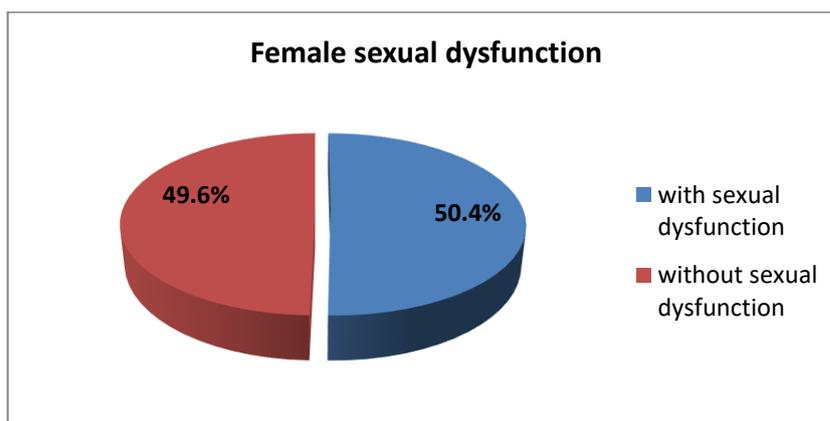
Figure [1]: Prevalence of female sexual dysfunction among women in upper Egypt

Table [1]: Female sexual dysfunction in each domain

	Normal sexuality No.[%]	Sexual dysfunction No.[%]
Desire	442 [88.4%]	58 [11.6%]
Arousal	404 [80.8%]	96 [19.2%]
Lubrication	422 [84.4%]	78 [15.6%]
Orgasm	340 [68.0%]	160 [32.0%]
Satisfaction	370 [74.0%]	130 [26.0%]
Pain	302 [60.4%]	198 [39.6%]
Total	248 [49.6%]	252 [50.4%]

Table [2]: Female sexual dysfunction in proportion to demographic characteristics

Potential risk factor		Without FSD [n=248]	With FSD [n =252]	P- value	Adjusted OR [95% CI]
Educational level	Illiterate	80 [16%]	93 [18.6%]	0.306	1. 8 [0.75-4.4]
	Primary	44 [8.8%]	87 [17.4%]		1. 3 [0.50-3.4]
	Secondary	90 [18%]	94 [18.8%]		1.5 [0.68-3.4]
	graduate	34 [6.8%]	22 [4.4%]		referent
Occupation	Yes	28 [5.6%]	25 [5%]	0.619	1.2 [0.55-2.7]
	No	220 [44%]	227 [45.4%]		referent
Residence	Rural	190 [38%]	187 [37.4%]	0.532	0.88 [0.51-1.5]
	Urban	58 [11.6%]	65 [13%]		referent
Psychological problems	Yes	8 [1.6%]	15 [3%]	0.269	referent
	No	240 [48%]	237 [47.4%]		1.03 [0.36-2.9]
Circumcision	Yes	244 [48.8%]	247 [49.4%]	0.755	referent
	No	4 [0.8%]	5 [1%]		1.75 [0.4-7.6]
Age at first intercourse	< 20years	148 [29.6%]	153 [30.6%]		2 [0.54-7.4]
	20-25	90 [18.0%]	93 [18.6%]		2.5 [0.68-9.2]
	> 25years	10 [2.0%]	6 [1.2%]		referent
Contraception	No	26 [5.2%]	27 [5.4%]	0.934	0.74 [0.31-1.7]
	Withdrawal	2 [0.4%]	2 [0.4%]		0.6 [0.05-6.3]
	Abstinence	2 [0.4%]	2 [0.4%]		1.8 [0.22-14.5]
	IUD	68 [13.6%]	64 [12.8%]		0.89 [0.46-1.7]
	Progestin	112 [22.4%]	109 [21.8%]		0.96 [0.53-1.7]
	COC	38 [7.6%]	48 [9.6%]		referent
Duration of marriage	5 >	26 [5.2%]	28 [5.6%]	0.965	1.5 [0.58-4]
	10-5	72 [14.4%]	77 [15.4%]		1.5 [0.73-3.3]
	15-10	70 [14.0%]	67 [13.4%]		1.5 [0.84-2.7]
	> 15	80 [16.0%]	80 [16.0%]		referent
Husband age	< 40 y	148 [29.6%] 100 [20.0%]	139 [27.8%]	0.307	0.89 [0.51-1.5]
	> 40 y		113 [22.6%]		referent
Number of children	No	2 [0.4%]	4 [0.8%]	0.725	1.3 [0.16-11.1]
	1-3	120 [24.0%] 126 [25.2%]	121 [24.2%]		0.9 [058-1.6]
	>3		127 [25.4%]		referent

IUD: Intra uterine device; COC: Combined oral contraception; OR: odds ratio

Table [3]: Risk factors for female sexual dysfunction

Risk factor		Without FSD [n=248]	With FSD [n =252]	P -value	Adjusted OR [95% CI]
Husband sexual problems	No	244 [48.8%]	213 [42.6%]	0.000	referent
	Ejaculation	2 [0.4%]	25 [5.0%]		
	E.D	2 [0.4%]	14 [2.8%]		11.1 [3.9-31.7]
Intercourse frequency	1–2 /m	16 [3.2%]	40 [8.0%]	0.004	2.1 [0.8-5.4]
	1–2 /w	128 [25.6%]	118 [23.6%]		0.78 [0.3 -1.5]
	3–4 /w	76 [15.2%]	59 [11.8%]		0.63 [0.3-1.2]
	> 4 /w	28 [5.6%]	35 [7.0%]		Referent
Reasons of S.D. reported by women	A	4 [0.8%]	24 [4.8%]	0.000	11.9 [3.7-38]
	B	40 [8.0%]	59 [11.8%]		2.5 [1.5-4.1]
	C	8 [1.6%]	31 [6.2%]		1.5 [0.4-5.5]
	D	6 [1.2%]	10 [2.0%]		3.1 [0.9-9.9]
	E	2 [0.4%]	10 [2.0%]		9.7 [1.8-50]
	F	0 [0.0%]	4 [0.8%]		4.2
	G	188 [37.6%]	114 [22.8%]		Referent

E.D: Erectile dysfunction; F.S.D: Female sexual dysfunctions; [A] Conflict in the relationship with her partner [B] Poor knowledge of their bodies and sexually sensitive areas [C] Poor partner performance and technique [D] Personal psychopathological problems [E] History of trauma [genital, obstetric, etc.] [F] Dyspareunia [G] Not know the cause of the problem.

DISCUSSION

The prevalence of sexual dysfunction in women has been observed to vary between countries. They may reflect medical and psychological factors, especially in the context of possible socioeconomic, cultural, and racial differences, the clinical definition used for each dysfunction, the type of

trial conducted [self-applicable questionnaire, mailed questionnaire, phone interview, personal interview], interrelationship with their partners, educational levels, and the characteristics of the samples studied [general population vs. sexuality clinics].

Our data reported that the prevalence of female sexual dysfunction was the half of the study population [50.4%] with Pain disorder is the predominant sexual domain disorder in [39.6%] of population, then Orgasmic disorder, Satisfaction disorder, Arousal disorder, Lubrication disorder, desire disorder in [32%], [26%], [19.2%], [15.6%], [11.6%] respectively, and it is consistent with other studies.

Our results were consistent with McCool's meta-analysis in 2018, where the prevalence of FSD [female sexual dysfunction] in premenopausal women was 40.9%. the study estimated a wide range of prevalence in each domain of sexual dysfunction hypoactive desire disorder 28.2% [6%-70%]; sexual aversion disorder, [5%-24%] sexual arousal disorder 22.6% [1%-60%]; lubrication difficulties 20.6% [1%-53%]; female orgasmic disorder 25.7% [8%-72%]; pain disorders 20.8% [1%-72%]. Further subgroup analyses showed significantly higher prevalence rates of FSD in Africa and the lowest rates in the non- European West [5].

Our results also were consistent with an Iranian study, where 42.5% of population had pain disorder. The Possible explanations from the author: Psychological pressures and relationship problems often lead to pain disorder. The second sexual domain abnormality was orgasmic disorders in 42.0% of the studied sample, and the author explained that it is a sequel of a restraining sexual education, poor partner performance and technique, and negative beliefs with regards to sexual activity [9], However, we are different from another Iranian study which reported that 45.3% of women had desire disorders Among the samples, 37.5% had arousal disorders [10].

We recorded less prevalence of sexual dysfunction than EL-Fayoum population, Egypt where the prevalence was 61.2% with the desire dysfunction accounts for 42.3%, arousal for 39.2%, lubrication for 25%, orgasm for 58.5%, satisfaction for 58.1%, and pain for 43.3% [11], and slightly lower than the prevalence and predictors of FSD in middle east studies. In the Saudi and Jordanian populations, the risk of FSD is 60% and 64.7%, respectively. The Saudi Arabia study showed an increased risk of FSD with age. More than 40 years of age increased the risk of FSD by about five times. Many potential risk factors for FSD were suggested, including age, economic level, and satisfaction with a spouse's sexual ability were the only predictive factors [6, 12].

Conversely to our results, Maaita *et al*. reported desire problems in the majority [49.4%] of his participants, arousal problems in 31.9% and lubrication problems in 39.2%, orgasm problems in 39.57%, satisfaction problems in 43.82%, and pain problems during sexual relations in a minor proportion [19.2%] [12].

Pain disorder is the most prevalent domain disorder in comparison to other studies. This discrepancy in findings could be explained by the following: first, most of our population were circumcised, which may have exposed them to previous genital trauma, also we enrolled younger age stratification than in other studies, and most studies concluded that low desire disorder is age-related.

Previous study found no relation between the level of education and female sexual dysfunction [13]. Others, like our finding, revealed that higher educational status is associated with a lower risk of sexual dysfunction [3, 9], and the reverse was also reported [14]. Education was found to be a protective factor against sexual disorders in a major US study young women who are educated and have gainful jobs are less likely to develop symptoms of sexual dysfunction, according to studies from Iran and Jordan [9, 15].

Several Chinese research, however, has found that young women with a greater level of education are more likely to experience sexual dysfunction, these women have a greater understanding of their sexual needs and privileges because of their higher education, and they are more likely to be dissatisfied with their marital and sexual relationships, which can lead to poor sexual functioning [16].

Women who were not employed had a higher risk of sexual dysfunction than non-employed women, and there was a substantial impact of socioeconomic status on sexual dysfunction incidence, as explained by Khodair *et al.*, in contrast to our findings, where desire disorder was more prevalent in employed women [17].

Male sexual dysfunctions, such as erectile dysfunction, have a major negative impact on the

sexual function of their female partners. Furthermore, the risk of FSD may improve with the therapy of male sexual dysfunction. In Saudi Arabia, dissatisfaction with a spouse's sexual ability elevated the chance of FSD by almost six times [6].

Similarly, Lou *et al*. found an increase of the risk in FSD by 6.94-fold among 5,024 women in Beijing, China, attributable to dissatisfaction with their spouse's sexual performance [3], Turkish [18], and Japanese women were also revealed to have an elevated risk of FSD because of dissatisfaction with their spouse's sexual abilities [19].

As regards contraception uses our results are consistent with prospective cohort study that revealed a modest association between sexual dysfunction and reduced sexual attraction in women received levonorgestrel-containing COC [combined oral contraception] and injectable medroxyprogesterone [20]. However, in another study norgestrel COC was found to have a protective effect [21].

Female sexual dysfunction has been demonstrated to be age-related in most cases. Except for pain disorder, which has been proven to have a protective impact, older age is a risk factor in all categories. Age is a protective factor for pain disorders, according to Maaita, *et al*., who state that dyspareunia is less common in their age group than other disorders [12].

Limitations: There were several limitations to our study. For starters, the sample population was a non-convenient sample of women who attended the outpatient clinic, which may not be representative of the general population due to the sensitivity of the subject and the community-based sampling may not be viable. Secondly, male partners were not evaluated for their sexual performance data may be subjective, inaccurate, or biased.
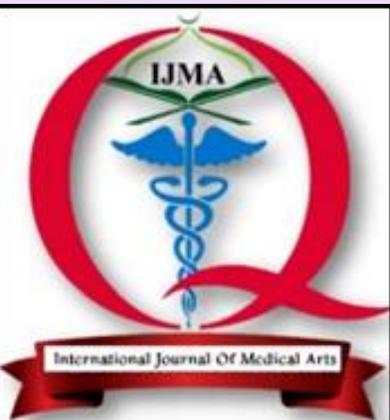
Conclusion: In Upper Egypt, female sexual dysfunction is a serious health issue that needs to be evaluated more. Husband's sexual problems are the most common risk factors for female sexual dysfunction. The Pain disorders were the most predominantly affected domains, followed by orgasmic problems. Further research is desirable with more comprehensive sample to assess the extent of the problem and to approve its correlation with different risk factors and detecting more risk factors, so community-based studies are advised.

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