

Original Research Article

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Risk factors associated with female sexual dysfunction among married women in Upper Egypt; a cross sectional study

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ABSTRACT

Background: Female sexual dysfunction (FSD) has many psychological and social negative consequences. The aim of this study is to detect the potential risk factors associated with FSD among sexually active women in Beni-Suef, Egypt.

Methods: A multi-stage random sampling methodology was used to include 490 premenopausal women, residing in Beni-Suef, in this cross-sectional study. FSD was measured using the Arabic version of the female sexual function index (ArFSFI), throughout an interview. It includes 6 domains; desire, arousal, lubrication, orgasm, satisfaction and pain. The questions in each domain have five to six choices with a score ranging between zero and five.

Results: Age, years of marriage and number of pregnancies correlated negatively with ArFSFI total score ($p<0.05$). Higher body mass index was associated with lower scores of desire, arousal and lubrication ($p<0.05$). Compared to those with constant job, unemployed women had lower scores of desire and arousal ($p<0.05$). No statistically significant associations have been detected between circumcision and any of the studied ArFSFI domains ($p>0.05$).

Conclusions: There are many potential risk factors suggested to be associated with FSD. Further studies should focus on understanding the adaptive strategies used by women to get over their FSD problems. Barriers preventing women with FSD from seeking treatment should also be investigated.

Keywords: Female sexual dysfunction, Sexual desire, FSFI

INTRODUCTION

Female sexual dysfunction (FSD) is a public health concern with many physical and psychological consequences that do undermine women's quality of life. The woman is considered sexually functioning when she has the ability to achieve sexual desire, arousal, lubrication, orgasm and satisfaction.¹⁻⁴ Although FSD affects up to half of the women and can lead to physical, psychological and social problems, many inconsistent

findings have suggested overlapping physical, social and relationship factors as risk for FSD.⁵⁻⁷

Besides, the religious and cultural background of the women are thought to play pivotal role in determining women's sexual functioning, which make some risk factors for developing FSD in a certain population different from those in another population.⁵⁻⁷ In conservative communities, such as that of Beni-Suef, speaking out about sexual problems is considered a taboo

and people may get stigmatized for their sexual disorders, which may hinder forming an overwhelming view over sexual problems, especially in females.⁵

This could explain the scarcity of the available data over the state of FSD and its determinants amongst women residing Upper Egypt. In this regards, the objective of this study is to detect the risk factors associating with FSD among premenopausal married women in Beni-Suef, Egypt.

METHODS

This cross-sectional study was conducted in Beni-Suef City in the period between May and July 2017. According to 2016 estimates, 2.9 million people live in Beni-Suef Governorate. Beni-Suef City is the capital of Beni-Suef Governorate, nearly 120 Km south to Cairo and formed of an urban Metropolitan surrounded by rural villages on the sides of the highways linking Beni-Suef to three Governorates; Cairo, Minia and Fayoum. Almost 60-70% of the population in Beni-Suef City live in urban areas.

The sample size was calculated using Epi-Info version 7 Stat Calc, [Center for Disease Control (CDC), WHO], based on the following criteria; confidence level of 95%, margin of error of 5% and non-response rate of 30%.

The eligibility criteria included women older than 18 years who were married for at least one year previous to the interview date. Pregnant women, women with a history of menstrual disorders in the past year, women subjected to genital operations and women at menopause were not allowed to participate in the study.

Before beginning the fieldwork, the urban Metropolitan of Beni-Suef city was classified according to the socioeconomic standards of its quarters to low, middle, and high socioeconomic strata. Out of each stratum (low, middle, and high), only one quarter was selected randomly by card withdrawal and from each quarter two streets were chosen using random start.

On the other hand, the rural villages surrounding the Metropolitan were stratified according to their geographic location (North, West, and South), and only one village was selected randomly using card withdrawal from each location. The selected villages were then clustered roughly to two areas (East and West to the main water channel running throughout the village), where women living in these areas were invited to participate in the study.

An Arabic language interview questionnaire was designed for data collection. The questionnaire included two sections: section I included questions about the socio-demographic characteristics of the participants, their age at menarche, marriage duration, number of pregnancies and exposure to circumcision. Weight and height of women were measured using calibrated scales

and the BMI was calculated. Section II evaluated the FSD of the participants using the Arabic version of the Female Sexual Function Index (ArFSFI). ArFSFI is a 19-item questionnaire, and evaluates FSD only during the 4 weeks before the study. It includes 6 domains; desire, arousal, lubrication, orgasm, satisfaction and pain. The questions in each domain have five to six choices with a score ranging between zero and five. Women with lower scores are considered to have higher probability of having FSD.^{8,9}

A total of 1000 women were invited to participate in this study; of them 682 were interviewed giving a response rate of 68.2%, then 192 questionnaires were excluded (122 for not meeting the eligibility criteria and 70 because of the incompleteness), leaving the analysis population 490 women. The sensitivity of the issue and the conservative nature of the community could explain this relatively low response rate.

After getting institutional approvals, The Faculty of Medicine, Beni-Suef University Research Ethics Committee has approved the study protocol. The subjects were informed of the purpose of the study and its consequences with confirming confidentiality of data.

Data were analyzed using the software, Statistical Package for Social Science (SPSS Inc. Released 2009, PASW Statistics for Windows, version 22.0: SPSS Inc., Chicago, Illinois, USA). Frequency distribution as percentage and descriptive statistics in the form of mean and standard deviation were calculated. One-way ANOVA and independent t-test were used to compare sexual function scores. Correlation and regression analyses were performed when appropriate. P values of less than 0.05 were considered significant.

RESULTS

Table 1: Socio-demographic characteristics of the study participants.

Characteristics	n=490 (%)	
Age (mean±SD)	33.1±7.7	
BMI (mean±SD)	27.4±2.1	
Residence	Urban	278 (56.7)
	Rural	212 (43.3)
Employment	Employed	300 (61.2)
	Unemployed	190 (38.8)
Education	Elementary	287 (58.6)
	High	203 (41.4)
Menarche age (mean±SD)	12.5±0.8	
Marriage duration (mean±SD)	9.4±7.4	
Circumcision	Yes	272 (55.5)
	No	218 (44.5)

BMI; body mass index, SD; standard deviation.

A total of 490 premenopausal women were included in this study. The women were in age group between 18 and 50 years with a mean age of 33.1±7.7 years. The mean

BMI of the women was 27.4 ± 2.1 kg/m². More than half (56.7%) of our subjects were residing urban areas, 61.2% had constant job, and 41.4% continued their higher education (universities or high institutes).

The menarche age of the participating women stood at 12.5 ± 0.8 years while their marriage duration was 9.4 ± 7.4 years. Precisely, 272 (55.5%) stated exposure to genital circumcision (Table 1).

Table 2: Predictors of sexual dysfunction among the study participants by univariate regression analysis.

Characteristics	Desire	Arousal	Lubrication	Orgasm	Satisfaction	Pain	Total ArFSFI
Age (r)	-0.442*	-0.395**	-0.500**	-0.314**	-0.308**	0.100	-0.436**
BMI (r)	-0.102*	-0.124*	-0.103*	-0.088	-0.069	-0.015	-0.115*
Residence (Mean \pm SD)	Urban	4.1 \pm 0.9	4.4 \pm 0.9	4.3 \pm 1.2**	4.5 \pm 1.0	4.9 \pm 1.0	5.1 \pm 1.1
	Rural	4.2 \pm 1.2	4.4 \pm 1.0	4.8 \pm 1.4	4.6 \pm 1.1	4.9 \pm 1.0	5.1 \pm 1.1
Employment (Mean \pm SD)	Employed	4.3 \pm 1.0*	4.5 \pm 0.9*	4.6 \pm 1.1	4.6 \pm 1.0	4.9 \pm 0.9	5.1 \pm 1.1
	Unemployed	4.0 \pm 1.1	4.2 \pm 1.0	4.4 \pm 1.5	4.5 \pm 1.2	4.9 \pm 1.1	5.1 \pm 1.1
Education (Mean \pm SD)	Elementary	4.1 \pm 1.1	4.3 \pm 1.0	4.5 \pm 1.4	4.6 \pm 1.1	4.9 \pm 1.0	5.1 \pm 1.2
	High	4.3 \pm 0.9	4.4 \pm 0.9	4.5 \pm 1.1	4.5 \pm 1.1	4.9 \pm 0.9	5.1 \pm 1.1
Menarche age (r)	0.102*	0.144*	-0.003	0.109*	0.109*	-0.081	0.082
Marriage duration (r)	-0.435**	-0.393**	-0.421**	-0.264**	-0.274**	0.052	-0.404**
Circumcision (Mean \pm SD)	Yes	4.1 \pm 1.1	4.4 \pm 1.0	4.5 \pm 1.3	4.6 \pm 1.1	4.9 \pm 1.0	5.1 \pm 1.1
	No	4.2 \pm 1.0	4.4 \pm 1.0	4.5 \pm 1.3	4.5 \pm 1.1	4.9 \pm 1.0	5.2 \pm 1.0
Parity (Mean \pm SD)	≤ 3	4.3 \pm 1.0**	4.5 \pm 0.9**	4.8 \pm 1.2**	4.6 \pm 1.0**	5.0 \pm 0.9*	5.1 \pm 1.1
	>3	3.8 \pm 1.1	4.0 \pm 0.9	3.9 \pm 1.4	4.3 \pm 1.2	4.8 \pm 1.1	5.2 \pm 1.0

BMI; body mass index, SD; standard deviation, ArFSFI; Arabic Female Sexual Function Index. *P<0.05, **P<0.001.

Table 3: Predictors of sexual dysfunction among the study participants by multivariate regression analysis

Characteristics	Desire	Arousal	Lubrication	Orgasm	Satisfaction	Pain	Total ArFSFI
Age	-0.044**	-0.036*	-0.080**	-0.054**	-0.048**	0.036*	-0.226**
BMI	-0.035	-0.044*	-0.041	-0.030	-0.025	-0.024	-0.197*
Residence	0.010	-0.053	0.208	-0.068	-0.145	0.123	0.072
Employment	-0.170	-0.136	-0.067	-0.074	0.056	-0.055	-0.451
Education	-0.142	-0.178*	-0.293*	-0.249*	-0.127	0.002	-0.993*
Menarche age	0.150*	0.180**	0.070	0.170*	0.144*	-0.116*	0.597*
Marriage duration	-0.044*	-0.034*	-0.007	0.004	-0.013	-0.033*	-0.128*
Circumcision	-0.015	-0.021	0.032	-0.120	-0.080	0.241*	0.038
Parity	0.148*	0.098*	0.007	0.009	0.119*	0.072	0.456*

BMI; body mass index, ArFSFI; Arabic Female Sexual Function Index; * P-value <0.05, ** P-value <0.001.

Of the studied predictors for FSD, age, marriage duration and number of pregnancies correlated negatively with all domains (except pain) of ArFSFI and its total score ($p<0.05$). Negative correlations have also been noticed between BMI and each of desire, arousal and lubrication domains ($p<0.05$). Unemployed women had lower scores of desire and arousal ($p<0.05$). No significant correlations have been found between circumcision and any of the studied domains ($p>0.05$) (Table 2).

Using multivariate analysis, all the predictors of FSD detected by univariate analysis were found to be potential risk factors ($p<0.05$) (Table 3).

DISCUSSION

FSD is a multidisciplinary disorder that affects the physical, mental and social status of women. In the current study, the association between FSD and many

socio-demographic and gynecological characteristics have been investigated. Older women were more likely to have lower ArFSFI scores and age correlated negatively with desire, arousal, lubrication, orgasm and satisfaction ($p<0.05$).

Previous national and international literatures have confirmed this negative correlation.^{5,10,11} Lower estrogen production and vulvovaginal thinning and dryness can explain the association between old age and FSD.^{10,11} Besides, increased BMI in this study could be linked to higher probabilities of FSD ($p<0.05$, $r=-0.197$). Obesity can be a primary cause of FSD; however it is also associated with metabolic syndrome, diabetes, and cardiovascular disorders; factors that lead to impaired sexual functioning.¹²⁻¹⁴

In consistence with our findings, previous studies suggested negative correlations between BMI and sexual

functioning, however others did not.^{5,15-17} FSD attributed to obesity can be explained by the hormonal imbalance caused by insulin resistance, the atherosclerosis of the vasculature supplying the genitalia, in addition to the psychological incompetence caused by low self-esteem and lack of confidence due to imperfect body image.^{2,18}

Our results showed that number of pregnancies were associated with FSD which agreed with previous reports.^{19,20} Also, women who reported more years of marriage had more FSD. This may be due to the fact that women who are married for longer periods are supposed to be older and have more children. In addition, more years of marriage carry extra burdensome tasks that interfere with sexual functioning.

What is really surprising about our findings that although the negative impact of circumcision on the sexual life of women have been heavily studied and documented, we did not find any considerable differences between the circumcised women and the uncircumcised women regarding any of the studied domains of ArFSFI.^{21,22} This may be attributed to the fact that most of the circumcised women in Egypt were exposed to type I female genital cutting, which includes partial clitoridectomy instead of the complete excision of clitoris.²²

In Egypt, Thabet concluded that type I female genital cutting did not affect women's sexual desire.²³ Desire, arousal, orgasm, satisfaction and pain scores did not show considerable differences between circumcised and uncircumcised women in a hospital-based study on Egyptian women or in a recent study over 150 overweight and obese women from Upper Egypt.^{5,24}

Though statistically insignificant, lower educational level in our study was associated with FSD. Previous studies showed that women with lower levels of education were more likely to experience FSD.^{3,25} We also demonstrated that the unemployed females had more FSD. It is likely that women with lower education and those who have no job are subjected to stressful economic conditions that may interfere with sexual functioning.

In conclusion, several risk factors of FSD have been detected in our study. Further research should focus on the adaptive techniques used to mitigate the impact of FSD. Barriers preventing women with FSD from seeking treatment should also be investigated.

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