

Contents lists available at [ScienceDirect](http://www.sciencedirect.com)

Middle East Fertility Society Journal

journal homepage: www.sciencedirect.com

Original Article

Prevalence and patterns of female sexual dysfunction among overweight and obese premenopausal women in Upper Egypt; a cross sectional study

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ARTICLE INFO

Article history:

Received 11 July 2017

Revised 9 August 2017

Accepted 26 August 2017

Available online xxxxx

Keywords:

Obesity

Overweight

Female sexual dysfunction

Premenopausal

ABSTRACT

Objective: Obesity is a growing public health concern. Many reports link obesity to female sexuality. The purpose of this study is to assess the prevalence and patterns of female sexual dysfunction (FSD) among overweight and obese premenopausal women in Beni-Suef, Egypt.

Study design: A cross sectional study.

Setting: Beni-Suef, Egypt.

Subjects and methods: 150 premenopausal non-pregnant married women were enrolled for the study. Socio-demographic characteristics and obstetric history were collected using a self-administered questionnaire. Sexual dysfunction was assessed using the Arabic version of female sexual function index (ArFSFI).

Results: The mean age of the participating women was 31.2 ± 7.3 years and the mean BMI was 27.5 ± 1.9 kg/m². Circumcision was reported by 59.3% of women. Precisely, 42 (28%) of women had FSD. Pain, lubrication and arousal were the most common reported problems 69.3%, 53.3% and 52%, respectively. Obese women were more likely to have desire, arousal and lubrication problems compared to the overweight. FSFI total score correlated negatively with age of women, marriage duration and parity ($p < 0.05$), but did not correlate with BMI ($p > 0.05$).

Conclusion: Problems in pain, lubrication and arousal were the most common patterns of sexual dysfunction among overweight Egyptian women. Further research over the effect of certain interventional programs on FSD should be considered.

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1. Introduction

Obesity is a global epidemic. Nowadays, the World Health Organization (WHO) reported that public health issues as communicable diseases and under nutrition become less important than problems of overweight and obesity [1]. Worldwide, overweight and obesity become responsible for 2.3% of global disability-adjusted life years (DALYs) and more than 2.8 million people die annually as a result of them [2]. Among Egyptian adult population,

an overall obesity prevalence rate of 29.2% (27.6% in males and 30.7% in females) was reported [3].

In addition to the association between overweight and obesity and each of type II diabetes, cardiovascular disorders, metabolic syndrome and osteoarthritis [4–6], overweight and obesity are suggested to have negative impact on sexuality [7].

Disruption of sexual functions in females may affect them physically and psychologically, results in distress and anxiety, and leads to incompetent relationships [8,9]. Inconsistent findings regarding the correlation between body mass index (BMI) and female sexual dysfunction (FSD) have been shown. While many studies reported worse sexual functions in women with higher BMI [9–11], other studies did not reach this conclusion [12,13].

Dyslipidemia, known to be associated with overweight and obesity, may result in atherosclerosis of iliohypogastric artery and

Peer review under responsibility of Middle East Fertility Society.

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E-mail address: bmr90@hotmail.com (A.M. Abbas).<http://dx.doi.org/10.1016/j.mefs.2017.08.006>

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puddental artery. The resulting impairment of blood flow to genitalia leads to vaginal wall and clitoral muscles fibrosis and disrupted sexual functions [14]. Also, many overweight and obese women have low self-esteem and consider themselves not attractive, which may hinder establishing normal sexual relationships [15].

However, little is known about FSD in overweight and obese women in Upper Egypt. In this regards, the objective of this study is to detect the prevalence and patterns of FSD among overweight and obese premenopausal married women and investigate the socio-demographic and obstetric correlates.

2. Materials and methods

In this cross-sectional study, a total of 150 overweight and obese women visiting a private nutrition clinic in Beni-Suef, Upper Egypt were surveyed. The study was conducted in the period between May and December 2016.

The eligibility criteria included married women older than 18 years, with no history of any medical disease could affect the sexual function and their BMI greater than 24.9 kg/m². Pregnant women, women with menstrual disorders, women with history of genital tract abnormalities or operations and women at menopause were excluded from the study.

The least sample size to be enrolled was calculated using Epi-Info version 7 Stat Calc, [Center for Disease Control (CDC), WHO], based on the following criteria; FSD prevalence rate of 20%, confidence level of 90%, margin of error of 5% and non-response rate of 20%.

Using a calibrated scale for measurement, women with BMI ≥ 25 kg/m² were considered overweight, while obesity was indicated by BMI ≥ 30 kg/m². Then, all women were asked to fill in a questionnaire including questions about their socio-demographic characteristics and obstetric history.

For evaluating the FSD among the participating women, the Arabic version of the Female Sexual Function Index (ArFSFI) was used. ArFSFI is a 19-item questionnaire, which evaluates the FSD during the previous 4 weeks prior to the study. ArFSFI includes questions over 6 domains; desire, arousal, lubrication, orgasm, satisfaction and pain. For each question, 5–6 options are available with a score from 0 to 5, and the lower the score, the higher the probability of having FSD [16].

In this study, the optimal cut-off score, below which FSD was more likely, was 26.55 for the total score, 4.28 for desire, 5.08 for arousal, 5.45 for lubrication, 5.05 for orgasm, 5.04 for satisfaction, and 5.51 for pain [17].

The study was approved by the research ethics committee of the Faculty of Medicine, Beni-Suef University. The subjects were informed of the purpose of the study and its consequences with confirming confidentiality of data.

Statistical analysis was performed using SPSS software Chicago, IL, USA, version 21. Comparison between categorical variables in both groups was done by Chi-square test and continuous variables were compared using Student *T*-test. For statistical analysis, we tested the data for normality by Kolmogorov-Smirnov test and they were normally distributed. Correlation analysis was done between FSFI score and characteristics of the participating overweight and obese women. We considered *P* value < 0.05 as a significant value.

3. Results

A total of 150 overweight and obese women participated in the study. The age of the women ranged between 20 and 49 years with a mean age of 31.2 ± 7.3 years. Of them, 133 (88.7%) were over-

weight and 17 (11.3%) were obese and the mean BMI of all women stood at 27.5 ± 1.9 kg/m². Almost half of our subjects were living in urban areas, 57.3% were employed, 30.7% continued their study in a university or a high institute, and 59.3% were circumcised (Table 1).

Out of the 150 overweight and obese women, 42 (28%) had FSD. Dysfunctions in pain, lubrication and arousal were the most common reported problems 69.3%, 53.3% and 52%, respectively (Table 2). Compared to the overweight, obese women were more likely to experience desire, arousal and satisfaction dysfunctions (*p* < 0.05) (Table 3).

When women with FSD were compared to women with no FSD, socio-demographic characteristics and obstetric data showed no statistically significant differences between both groups (*p* > 0.05), however women who studied in universities and higher institutes showed significantly higher rates of FSD (*p* < 0.05) (Table 4). Further, our results showed a statistically significant negative correlation between FSFI total score and each of females' age, marriage duration and parity (*p* < 0.05) (Table 5).

Table 1

Socio-demographic and obstetric characteristics of the participating overweight and obese women.

Characteristics	n = 150 (%)
Age (mean \pm SD)	31.2 \pm 7.3
BMI (mean \pm SD)	27.5 \pm 1.9
Residence	Urban 79 (52.7)
	Rural 71 (47.3)
Employment	Employed 86 (57.3)
	Unemployed 64 (42.7)
Education	Elementary 104 (69.3)
	High 46 (30.7)
Menarche age (mean \pm SD)	12.7 \pm 0.9
Marriage duration (mean \pm SD)	7.8 \pm 6.4
Parity (mean \pm SD)	2.7 \pm 1.4
Circumcision	Yes 89 (59.3)
	No 61 (40.7)

BMI; body mass index.

Table 2

Patterns of sexual dysfunction in the participating overweight and obese women.

Types of dysfunction	n = 150 (%)
Desire	58 (38.7)
Arousal	78 (52.0)
Lubrication	80 (53.3)
Orgasm	60 (40.0)
Satisfaction	51 (34.0)
Pain	104 (69.3)

Table 3

Comparison between overweight and obese women regarding the patterns of sexual dysfunction.

Types of dysfunction	Overweight n = 133 (%)	Obese n = 17 (%)	p-value
Desire	46 (34.6)	12 (70.6)	0.005*
Arousal	64 (48.1)	14 (82.4)	0.007*
Lubrication	69 (51.9)	11 (64.7)	0.231
Orgasm	51 (38.3)	9 (52.9)	0.185
Satisfaction	41 (30.8)	10 (58.8)	0.024*
Pain	95 (71.4)	9 (52.9)	0.103

* p-value is considered significant.

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