

# Incidence of sexual dysfunction in patients with obesity and overweight

## *Incidência de disfunção sexual em pacientes com obesidade e sobrepeso*

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### A B S T R A C T

**Objective:** To assess the prevalence of sexual dysfunction in obese and overweight patients treated at the Professor Alberto Antunes University Hospital (HUPAA - UFAL). **Methods:** This is a descriptive study. The sample consisted of overweight or obese females. Anthropometric data were collected for assessment of body mass index (BMI) and waist circumference (WC). In all subjects we measured the levels of blood glucose, total cholesterol and triglycerides. We applied a Portuguese-validated version of the Female Sexual Function Index (FSFI), which assesses sexual response as for desire, arousal, vaginal lubrication, orgasm, sexual satisfaction and pain. The total score is the sum of scores for each domain multiplied by the corresponding factor and can vary from '2' to '36', a total score less than or equal to '26' being considered risky for sexual dysfunction. **Results:** We evaluated 23 women with a mean age of 44, where 73.9% were obese and 82.6% had a highly increased risk for metabolic complications (WC e" 88cm). The increased risk for sexual dysfunction was present in 78.3% of the interviewees, causing biopsychosocial impairment. Hypertension, diabetes and dyslipidemia were present in 33.3%, 22.2% and 61.1%, respectively, of patients at risk for sexual dysfunction. **Conclusion:** The analysis of the results demonstrates the need for better research and attention of physicians to patients with obesity or overweight.

**Key words:** Sexuality. Sexual dysfunction, physiological. Female. Obesity. Overweight.

### INTRODUCTION

Abdominal obesity (android or central obesity) is characterized by deposition of adipose tissue in the abdominal region and is considered a risk factor for various morbidities, such as cardiovascular disease (CVD), hypertension (HT), diabetes mellitus (DM), hypercholesterolemia, and some forms of cancer, in addition to representing different risk when compared to other forms of body fat distribution<sup>1</sup>.

A survey conducted by the Brazilian Ministry of Health in 2009 showed that the frequency of overweight and obesity increased in men and women. Currently, 13.9% of adults are obese, with the rate higher among women (14%) than among men (13.7%), while 46.6% of Brazilian adults are overweight, with higher rate among men (51%) than among women (42.3%)<sup>2</sup>.

In this context, obesity, similar to other cardiovascular risk factors, is associated with the development of male and female sexual dysfunctions resulting from the deleterious effects on vascular and endothelial functions<sup>3</sup>.

Sexual dysfunctions are common among women, affecting 20-50% of them<sup>4</sup>. An American study has shown that these disorders are more frequent in women (43%) than in men (31%) and are related to demographic characteristics such as age and educational level<sup>5</sup>. In Portugal, there was a prevalence of 40.4%<sup>6</sup>, and in Brazil, 49% of women reported at least one sexual dysfunction<sup>4,7</sup>.

Female sexual disorders involve aspects such as sexual desire, arousal, orgasm, and dyspareunia. The syndromes of clitoral and vaginal vascular insufficiency are directly related to decreased genital blood flow secondary to atherosclerosis of the hypogastric and pudendal arteries. Although a variety of medical and psychogenic disorders result in decreased clitoral engorgement, vascular insufficiency is a major cause of sexual dysfunction<sup>3</sup>.

The aim of this study was to evaluate the incidence of sexual dysfunction in women with obesity and overweight treated at the Professor Alberto Antunes University Hospital, Federal University of Alagoas (HUPAA - UFAL).

Study conducted at the Professor Alberto Antunes University Hospital, Federal University of Alagoas (HUPAA - UFAL), Maceió, Alagoas State - AL, Brazil.

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## METHODS

This was a cross-sectional study conducted between March and October 2010 that evaluated female patients treated at outpatient basis at Nutrition clinic of Professor Alberto Antunes University Hospital - HUPAA / UFAL.

The study was approved by the Ethics in Research Committee of the Federal University of Alagoas, number 000440/2010-98.

All patients were informed about the questionnaire they would answer and signed an informed consent form.

We included women aged over 30 years with body mass index (BMI)  $\geq 25\text{Kg/m}^2$ . Patients undergoing treatment for current or prior sexual dysfunction or who had undergone radio and / or chemotherapy treatment were excluded.

Female sexual function was analyzed using the Female Sexual Function Index (FSFI). A validated Portuguese version was applied <sup>8</sup>, which is a brief, self-administered questionnaire and assesses female sexual response as for sexual desire, sexual arousal, vaginal lubrication, orgasm, sexual satisfaction and pain.

The questionnaire consists of 19 questions and presents scores on each component. The response options are scored between '0' and '5', increasingly, except in matters of pain, in which the score is inverted. The total score is the sum of scores for each domain multiplied by the corresponding factor and can vary from '2' to '36', a total score  $\leq 26$  being considered risky for sexual dysfunction (Table 1).

A survey of sexual function was followed by the acquisition of anthropometric data to assess body mass index (BMI) and waist circumference (WC). The cutoff points, according to the World Health Organization (WHO) are, for women: WC equal to or greater than 80 cm, which means an increased risk for metabolic complications; and WC equal to or greater than 88cm, which reflects a highly increased risk for metabolic complications.

BMI was calculated by dividing weight (kg) by the square of height ( $\text{m}^2$ ), considering normal values from 20 to  $24.9\text{ kg/m}^2$ , overweight from 25 to  $29.9\text{ kg/m}^2$  and obesity  $\geq 30\text{Kg/m}^2$ .

In all subjects the levels of blood glucose, total cholesterol and triglycerides were assessed.

## RESULTS

We evaluated 23 women with a mean age of 44 years, range 30-65, and BMI  $\geq 25\text{Kg/m}^2$ . Of these, 73.9% were obese and 82.6% had a highly increased risk for metabolic complications (WC  $\geq 88\text{ cm}$ ).

The prevalence of increased risk of sexual dysfunction was 78.3% of the patients. The average total FSFI score was 18.3, ranging from 3.2 to 34.2.

The most frequently found sexual dysfunctions in the study were the lack of desire (with a mean score of 2.8) and lack of arousal (mean score 2.4), while satisfaction and lubrication had the highest mean scores, of 3.5 and 3.3, respectively (Figure 1).

Among the patients with increased risk for sexual dysfunction (with a total score  $\leq 26$ ), all had at least one risk factor for sexual dysfunction, including high blood pressure (HT), diabetes mellitus (DM), dyslipidemia, cardiovascular disease (CVD) and smoking. Dyslipidemia and hypertension had a higher prevalence, with 61.1% and 33.3%, respectively (Figure 2).

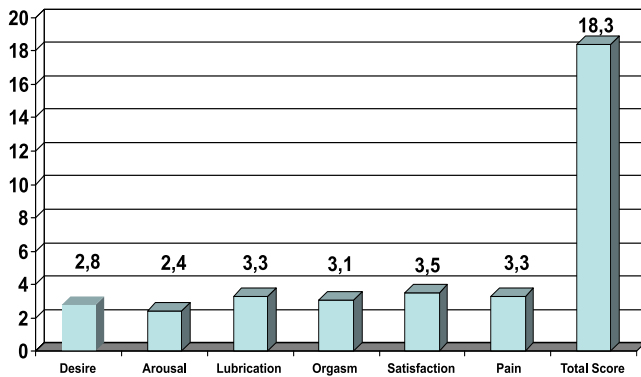
## DISCUSSION

Female sexual dysfunction has a multifactorial etiology, has a high prevalence and is rarely investigated by physicians, either due to embarrassment or to ignorance about the research methods. Although there are psychosocial factors and marital relationship difficulties that interfere with sexual response, there is evidence of a complex pathophysiology and, just recently, there has been a greater focus on women's sexual problems <sup>9-12</sup>. It is noteworthy that overweight and obesity are considered risk factors for male sexual dysfunction; the same relationship regarding sexual function in women remains unclear, though <sup>13</sup>.

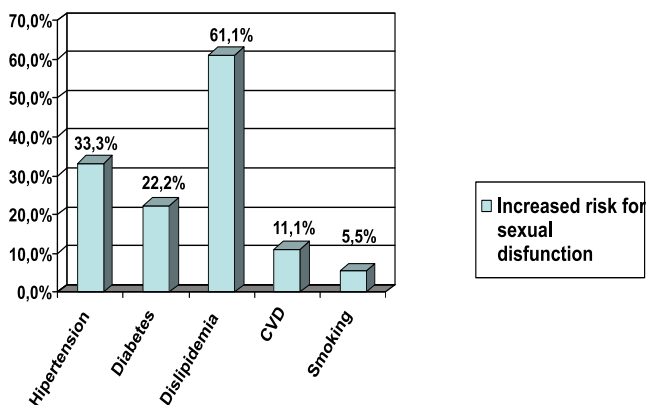
In this study, the prevalence of increased risk for sexual dysfunction was 78.3%, with an average total score of 18.3. These indices were comparable to the ones of another study, in which the frequency in patients with

**Table 1** - Scores of domains of the Female Sexual Dysfunction Index – FSFI.

Domain	Questions	Score variation	Factor	Minimum Score	Maximum Score
Desire	1 e 2	1 – 5	0.6	1.2	6
Excitation	3 a 6	0 – 5	0.3	0	6
Lubrication	7 a 10	0 – 5	0.3	0	6
Orgasm	11 a 13	1 – 5	0.4	0	6
Satisfaction	14 a 16	0 ou 1 – 5	0.4	0.8	6
Pain	17 a 19	0 – 5	0.4	0	6
Total score				2	36



**Figure 1** - Distribution of mean scores according to domains of sexual response of the Female Sexual Dysfunction Index - FSDI.



**Figure 2** - Frequency of risk factors in patients with sexual dysfunction. CVD: Cardiovascular disease.

obesity and overweight was 86% and the mean total FSDI score was 22.1<sup>13</sup>.

The most frequent alterations were lack of desire and lack of arousal, with mean scores of 2.8 and 2.4, respectively. Desire and arousal disorders are among the most common problems in clinical practice, because there is a high correlation between both<sup>14</sup>. Nevertheless, in a survey of the Brazilian population<sup>9</sup>, the main disorders are

the absence of orgasm and lack of sexual desire, which is considered the most common sexual disorder among women.

Few studies have evaluated the relationship between FSDI and body weight. A search using the FSDI performed with obese patients and a control group showed that there is no statistically significant relationship between obesity and sexual dysfunction, which was present in 50 and 41% of obese patients and in the control group, respectively<sup>13,15</sup>.

All patients with increased risk for sexual dysfunction had at least one risk factor for the disorder, with a predominance of dyslipidemia (61.1%) and hypertension (33.3%). Risk factors for sexual disorders can be organic, psychosocial and sociodemographic, and affect women in different stages of life. Epidemiological studies show a correlation of dysfunction with hypertension, diabetes, hormonal deficiencies, cardiovascular disease, neurological disorders, alcoholism, smoking and use of drugs and medicines<sup>16</sup>.

The investigation of sexual dysfunction in women with metabolic syndrome compared with a control group showed that patients with metabolic syndrome have a higher prevalence of sexual dysfunction, with reduced average FSDI total score (23.2), and satisfaction index (3.5) when compared to FSDI (30.1) and satisfaction index (4.7) in the control group. However, more research is needed to determine the impact of metabolic syndrome on female sexual function<sup>11</sup>.

In this context, the indices relating to sexual dysfunctions are diverse according to the methods of assessment (individual interview or questionnaire), to the population groups assessed and to diagnostic definitions<sup>9,10</sup>.

The change in lifestyle is an effective strategy to reduce the prevalence of sexual dysfunction in obese women, this way improving the endothelial function<sup>17</sup>. Although obesity does not appear to represent one of the major contributing factors, it affects various aspects of sexuality, and the result analysis shows the need for better research and attention of physicians for patients with obesity and overweight.

## R E S U M O

**Objetivo:** avaliar a prevalência de disfunção sexual em pacientes com obesidade e sobrepeso atendidos no Hospital Universitário Professor Alberto Antunes (HUPAA – UFAL). **Métodos:** trata-se de um estudo descritivo transversal. A amostra foi constituída por pacientes do sexo feminino com sobrepeso ou obesidade. Foram coletados os dados antropométricos para avaliação do índice de massa corporal (IMC) e da circunferência da cintura (CC). Em todos os indivíduos foi realizada a avaliação dos níveis séricos de glicose, colesterol total e triglicérides. Aplicou-se a versão validada em português do Índice de Função Sexual Feminina (IFSF), que analisa a resposta sexual quanto a desejo, excitação, lubrificação vaginal, orgasmo, satisfação sexual e dor. O escore total é a soma dos escores para cada domínio multiplicada pelo fator correspondente e pode variar de '2' a '36', considerando risco para disfunção sexual um escore total menor ou igual a '26'. **Resultados:** foram avaliadas 23 mulheres com média de idade de 44 anos, onde 73,9% eram obesas e 82,6% apresentaram risco muito aumentado para complicações metabólicas (CC > 88cm). O risco aumentado para disfunção sexual esteve presente em 78,3% das entrevistadas, ocasionando prejuízos biopsicossociais. HAS, DM e dislipidemia estavam presentes em 33,3%, 22,2% e 61,1%, respectivamente, das pacientes sob risco para disfunção sexual. **Conclusão:** a análise dos resultados demonstra a necessidade de uma melhor investigação e atenção dos médicos para com pacientes com obesidade ou sobrepeso.

**Descritores:** Sexualidade. Disfunção sexual fisiológica. Feminino. Obesidade. Sobrepeso.

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**APPENDIX I**  
**Female Sexual Dysfunction Index – FSDI**  
**(given in Portuguese)**  
**Instructions:**

This questionnaire asks about your sex life during the last 4 weeks. Please answer the questions as honestly and clearly as possible. Your answers will be kept strictly confidential. Check only one alternative per question. To answer the questions, use the following definitions: sexual activity can include cuddling, foreplay, masturbation (“handjob” / “clit rubbing”) and sex; sex act is defined when there is penetration (entry) of the penis into the vagina; sexual stimulation includes situations like foreplay with a partner; self-stimulation (masturbation) or sexual fantasy (thoughts); sexual desire or sexual interest is a feeling that includes wanting to have sexual activity, feeling receptive to an initiative from a sexual partner and thinking or fantasizing about sex; sexual arousal is a feeling that includes physical and mental responses (may include sensations such as heat or swelling of the genitals, lubrication - feeling wet / “wet vagina” / “horny vagina” - or twitches .)

1. Over the past 4 weeks, how often did you feel sexual desire or interest?

- 5 = Almost always or always
- 4 = Most times (more than half the time)
- 3 = Sometimes (about half the time)
- 2 = A few times (less than half the time)
- 1 = Almost never or never

2. Over the past 4 weeks, how would you rate your level (degree) of sexual desire or interest?

- 5 = Very high
- 4 = High
- 3 = Moderate
- 2 = Low
- 1 = Very low or none at all

3. Over the past 4 weeks, how often did you feel sexually aroused (“turned on”) during sexual activity or intercourse?

- 0 = No sexual activity
- 5 = Almost always or always
- 4 = Most times (more than half the time)
- 3 = Sometimes (about half the time)
- 2 = A few times (less than half the time)
- 1 = Almost never or never

4. Over the past 4 weeks, how would you rate your level of sexual arousal (“turn on”) during sexual activity or intercourse?

- 0 = No sexual activity
- 5 = Very high
- 4 = High
- 3 = Moderate
- 2 = Low
- 1 = Very low or none at all

5. Over the past 4 weeks, how confident were you about becoming sexually aroused during sexual activity or intercourse?

- 0 = No sexual activity
- 5 = Very high confidence
- 4 = High confidence
- 3 = Moderate confidence
- 2 = Low confidence
- 1 = Very low or no confidence

6. Over the past 4 weeks, how often have you been satisfied with your arousal (excitement) during sexual activity or intercourse?

- 0 = No sexual activity
- 5 = Almost always or always

- 4 = Most times (more than half the time)
- 3 = Sometimes (about half the time)
- 2 = A few times (less than half the time)
- 1 = Almost never or never

7. Over the past 4 weeks, how often did you become lubricated ("wet") during sexual activity or intercourse?

- 0 = No sexual activity
- 5 = Almost always or always
- 4 = Most times (more than half the time)
- 3 = Sometimes (about half the time)
- 2 = A few times (less than half the time)
- 1 = Almost never or never

8. Over the past 4 weeks, how difficult was it to become lubricated ("wet") during sexual activity or intercourse?

- 0 = No sexual activity
- 1 = Extremely difficult or impossible
- 2 = Very difficult
- 3 = Difficult
- 4 = Slightly difficult
- 5 = Not difficult

9. Over the past 4 weeks, how often did you maintain your lubrication ("wetness") until completion of sexual activity or intercourse?

- 0 = No sexual activity
- 5 = Almost always or always
- 4 = Most times (more than half the time)
- 3 = Sometimes (about half the time)
- 2 = A few times (less than half the time)
- 1 = Almost never or never

10. Over the past 4 weeks, how difficult was it to maintain your lubrication ("wetness") until completion of sexual activity or intercourse?

- 0 = No sexual activity
- 1 = Extremely difficult or impossible
- 2 = Very difficult
- 3 = Difficult
- 4 = Slightly difficult
- 5 = Not difficult

11. Over the past 4 weeks, when you had sexual stimulation or intercourse, how often did you reach orgasm (climax)?

- 0 = No sexual activity
- 5 = Almost always or always
- 4 = Most times (more than half the time)
- 3 = Sometimes (about half the time)
- 2 = A few times (less than half the time)
- 1 = Almost never or never

12. Over the past 4 weeks, when you had sexual stimulation or intercourse, how difficult was it for you to reach orgasm (climax)?

- 0 = No sexual activity
- 1 = Extremely difficult or impossible
- 2 = Very difficult
- 3 = Difficult
- 4 = Slightly difficult
- 5 = Not difficult

13. Over the past 4 weeks, how satisfied were you with your ability to reach orgasm (climax) during sexual activity or intercourse?

- 0 = No sexual activity
- 5 = Very satisfied
- 4 = Moderately satisfied
- 3 = About equally satisfied and dissatisfied
- 2 = Moderately dissatisfied
- 1 = Very dissatisfied

14. Over the past 4 weeks, how satisfied have you been with the amount of emotional closeness during sexual activity between you and your partner?

- 0 = No sexual activity
- 5 = Very satisfied
- 4 = Moderately satisfied
- 3 = About equally satisfied and dissatisfied
- 2 = Moderately dissatisfied
- 1 = Very dissatisfied

15. Over the past 4 weeks, how satisfied have you been with your sexual relationship with your partner?

- 5 = Very satisfied
- 4 = Moderately satisfied
- 3 = About equally satisfied and dissatisfied
- 2 = Moderately dissatisfied
- 1 = Very dissatisfied

16. Over the past 4 weeks, how satisfied have you been with your overall sexual life?

- 5 = Very satisfied
- 4 = Moderately satisfied
- 3 = About equally satisfied and dissatisfied
- 2 = Moderately dissatisfied
- 1 = Very dissatisfied

17. Over the past 4 weeks, how often did you experience discomfort or pain during vaginal penetration?

- 0 = Did not attempt intercourse
- 1 = Almost always or always
- 2 = Most times (more than half the time)
- 3 = Sometimes (about half the time)
- 4 = A few times (less than half the time)
- 5 = Almost never or never

18. Over the past 4 weeks, how often did you experience discomfort or pain following vaginal penetration?

- 0 = Did not attempt intercourse
- 1 = Almost always or always
- 2 = Most times (more than half the time)
- 3 = Sometimes (about half the time)
- 4 = A few times (less than half the time)
- 5 = Almost never or never

19. Over the past 4 weeks, how would you rate your level (degree) of discomfort or pain during or following vaginal penetration?

- 0 = Did not attempt intercourse
- 1 = Very high
- 2 = High
- 3 = Moderate
- 4 = Low
- 5 = Very low or none at all