



Impact of Bariatric Surgery on the Sexuality of Both Gender: A Transversal Study from Campina Grande – Paraíba, Brazil

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Abstract

Introduction: The purpose of this investigation was to assess the self-reported sexuality from obese adults who had undergone bariatric surgery.

Methods: This is a study performed at Institute of Obesity and Endoscopic Surgery from the Paraíba, Brazil. It was recruited 221 individuals. It was excluded patients with severe cognitive restriction and endocrine conditions. The patients underwent either gastric sleeve or bypass. It was used, for women, the Female Sexual Function Index (FSFI) and for men International Index of Erectile Function (IIEF). The continuous parameters were expressed by their means and standard deviations. The qualitative parameters were expressed by their frequencies. $P \leq 0.05$ was used for rejecting the null hypothesis. The research was approved by the Research Ethics Committee. All recruited patients signed the consent form.

Results: It was recruited 221 patients (168 - 76.0% women and 53 - 24.0% men). The ages ranged from 18 to 72 years, with a mean of 40.7 ± 10.2 years. The mean follow-up was 2.9 ± 1.7 years. The most frequent ethnicity was brown (114 - 51.6%). With regard to marital status, (163 - 73.8%) were married and the majority completed higher education (119 - 53.8%). A significant reduction in BMI was observed - $p < 0.001$. One hundred and seventy-five (79.2%) presented either with isolated type 2 diabetes and hypertension or both; most of them presented control of associated morbidities. It was observed that the frequency with regard to female sexual function was similar between those who were above the cut-off point for good sexual function and those who did not have this condition ($n=85$; 50.6%; $p=0.877$). The domain of sexual satisfaction mostly presented a score below the 2nd quartile ($n=99$; 58.9%; $p=0.021$), indicating that these women had an impaired sexual function. It is worthwhile to mention the frequency of almost 80% of men reported having normal erectile function. Furthermore, six men (11.3%) became fathers. The general sexual function, after bariatric surgery, is similar in men as compared to women.

Conclusion: A trend for better results is more evident in men who underwent bariatric surgery. Observation about the high frequency of normal erectile function and fatherhood among men lends support to this outcome.

Keywords: Obesity; Bariatric surgery; Sexuality; Sexual dysfunction

Introduction

Sexual health is based on a complex and multidimensional process coordinated by several biological systems and affected by genetically and environmental aspects [1-4]. Male and female sexual dysfunctions represent a medical and psychological problem that adversely affect not only physical health and quality of life, as well as produce impairment of sexual function with a detrimental effect on self-esteem, body image, interpersonal relationships, and physical health in general, including fertility [1,5-10].

Among modifiable risk factors for male and female sexual dysfunctions one can report: Smoking, physical inactivity, obesity, excessive alcohol and drug consumption, and psychotropic substances use. Healthy lifestyle and diet changes could be a useful strategy for decreasing the risk of Erectile Dysfunction (ED) in men and the other sexual dysfunctions in both genders [11-15].

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In obese patients who underwent bariatric surgery, weight loss and control of comorbidities are likely outcomes, however the impact on the sexuality in both gender is still a matter of discussion [16-22]. The purpose of this investigation was to assess the self-reported sexuality from obese adults who had undergone this surgical procedure.

Methods

This is an observational and transversal study performed at Institute of Obesity and Endoscopic Surgery from the Paraíba State, Brazil (ICOEP).

It was recruited 221 individuals, being 168 women and 53 men with ages ranging from 18 to 72 years, with a mean of 40.7 ± 10.2 years and median of 40 years who had undergone bariatric surgery with a mean follow-up of 2.9 ± 1.7 years.

It was excluded patients with severe cognitive restriction who could affect the answers for the questions included in the standard validated questioner, as well as those who had other endocrine conditions that produce sexual impairment.

The initial interview was made after explanation of the investigation and signature of patient consent. It was assured for all recruited people that the questioner answers would be kept in secret and used only scientific purpose.

The clinical data were collected from the surgical records.

The patients underwent two kinds of surgical procedures: Gastric sleeve or Bypass.

It was used, for women, the Female Sexual Function Index (FSFI) with a cut-off point of 26 [23,24] and for men International Index of Erectile Function (IIEF) with a normal range from 26 to 30 [25,26].

The sample size was calculated using the year number of bariatric surgery (n) in the ICOEP taking into consideration that there is a fifty percent of sexual dysfunction improvement, in the literature series [27]. It was calculated using Epi Info tool, accepting confidence interval of 95%.

The continuous parameters were expressed by their means and standard deviations, and also by median. The qualitative parameters were expressed by their absolute and relative frequencies.

It was used the chi-squared test and the exact test of Fisher for assessing differences among frequencies. For differences between the means continuous parameters, it was used the Mann-Whitney test.

$p \leq 0.05$ was used for rejecting the null hypothesis.

The research was approved by the Research Ethics Committee of the Center for Higher Education and Development (CESED) – Campina Grande – Paraíba, Brazil. All recruited patients signed the consent form.

Results

Two hundred and twenty-one patients who had undergone bariatric surgery were recruited. Of these, 168 (76.0%) were women and 53 men (24.0%). The ages of these individuals ranged from 18 to 72 years, with a mean of 40.7 ± 10.2 years. The median was 40.0 years. The mean ages of women and men were similar (women: mean - 40.7 ± 10.5 years, with a median of 39.5 years; men: mean - 40.6 ± 9.1 years, with a median of 40.0 years – $p=0.9088$).

The most frequent ethnicity was brown with 114 (51.6%), followed

Table 1: Erectile dysfunction classification¹.

Category	Scores	n (%)
Severe	6-10	1 (1.9)
Moderate	11-16	2 (3.8)
Mild to moderate	17-21	2 (3.8)
Mild	22-25	6 (11.3)
No erectile dysfunction	26-30	42 (79.2)

¹According to Gonzáles et al.

by 88 white (39.8%), 12 black (5.4%) and seven yellow (3.2%).

Regarding the level of education, 119 (53.8%) had completed higher education, while 37 (16.7%) had not completed higher education, 56 (25.3%) completed high school and 9 (4.1%) finished elementary school.

With regard to marital status, 163 (73.8%) were married, 40 (18.1%) were single, 17 (7.7%) were divorced and one (0.4%) was widowed.

One hundred and fifty-eight (71.5%) lived in Campina Grande, while 63 (28.5%) came from nearby cities or neighboring states.

With regard to the profession, 30 (13.6%) were teachers and 14 (6.3%) were business people, with the others working in diverse professions.

A significant reduction in BMI was observed. In the period before the surgical procedure, the mean was 42.0 ± 5.6 , with a median of 41.0, while in the postoperative follow-up it was 28.1 ± 4.5 , with a median of 27.0 - $p<0.001$.

Regarding clinical and health variables, there was a predominance of individuals with type 2 diabetes, blood high hypertension or both (175 - 79.2%); most of them presented control of associated morbidities, including anxiety and depression. Furthermore, there was a significant reduction in the construct of depression (pre-operative $n=64$ - 29.0% and post-operative $n=35$ - 15.8% - $p=0.0013$).

Among women, the following frequencies were observed in the domains evaluated according to the Female Sexual Function Index (FSFI) questionnaire: Sexual desire (6.0), arousal (13.0), lubrication (15.5), orgasm (11.5), satisfaction (12.0) and pain (12.5).

It was observed that the frequency with regard to female sexual function was similar between those who were above the cut-off point for good sexual function and those who did not have this condition ($n=85$; 50.6%; p -value =0.877) Figure 1.

The domain of sexual satisfaction mostly presented a score below the 2nd quartile ($n=99$; 58.9%; p -value =0.021), indicating that these women had an impaired sexual function.

The medians and the interquartile positions, and also the minimum and maximum values (boxplot) for the score for men are expressed in Figure 2.

Although, the general sexual function, after bariatric surgery, is similar in men as compared to women, it is worthwhile to mention that perception of erectile function in men is approximately 80%. Furthermore, six men (11.3%) became fathers with the same spouses.

Discussion

As it was performed in the present research, nurses play an active role in the correct and sufficient collection of data for the sexual



Figure 1: Sexual function and the domains evaluated about sexuality in the female sample.

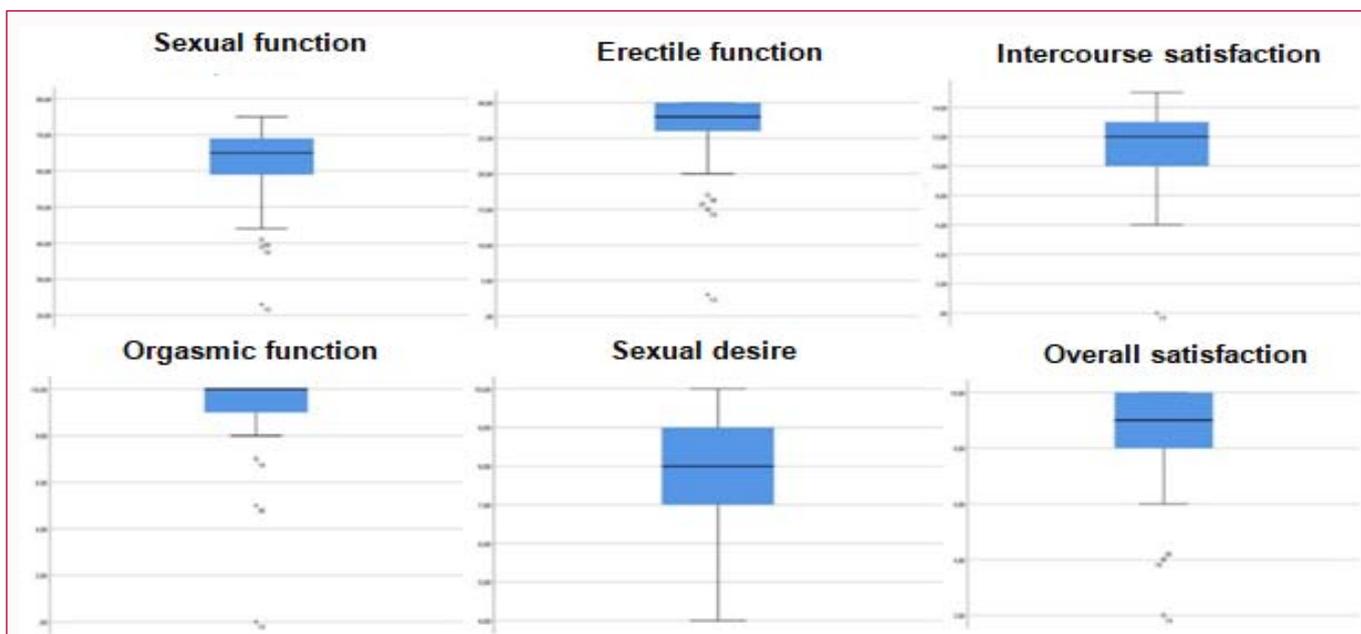


Figure 2: Sexual function and the evaluated domains about sexuality in the male sample.

health situation, assessing the sexual health vulnerability ratio from the period of illness or condition, providing a wide range of care and diagnosing sexual problems and concerns. This way, it will contribute to improving the quality of life of men and women and preventing permanent health problems [28].

The study is justified by fact that obesity interferes with sexual function and the hypothesis that bariatric surgery could mitigate sexual dysfunction, however requiring further clinical studies to explore the relationship between bariatric surgery and sexual function, since the aspects of quality of life in several systems are still controversial and have not been well elucidated. Furthermore, studies do not show the association between possible changes in sexuality when comparing women and men. This is especially relevant as we

consider the Patriarchal Society present in Brazil, particularly with regard to the north-eastern region, where the city of Campina Grande is located.

The contributions related to anthropometric and metabolic changes after bariatric surgery in sexual function are still incipient, particularly when using validated questionnaires. Thus, they are essential for a better understanding of this relationship.

Similar to what is described in the literature [27,29], the sample included more women when compared to men. This finding is found in the study of several diseases, probably due to the fact that women seek more health care services and are more concerned about their self-image [4].

In the current study, the control variables are predominantly composed of brown, young [7,8,19-21,28] married individuals [7,28,30] with a high level of education [7,28,30] and good socioeconomic status [28]. This is probably due to the fact that these recruited individuals underwent bariatric surgery in a private obesity treatment center.

There is in most studies' predominance of white ethnicity [7,8,20,21,30] which differs from the findings of the present study.

In accordance with the present study, there was significant reduction in BMI in the postoperative period of bariatric surgery, which was also described in other studies [8,21,31].

Obesity and related comorbidities can impair sexual function and quality of life [4,32]. Morbidities registered in the sample were predominantly: Type 2 diabetes, systemic arterial hypertension, often being associated in the same individual, similar data was also observed other studies [29].

The most commonly performed surgical technique in the present study was the bypass type, similar data found in the literature [8,21,31].

Female sexual function assessed after surgery, by the FSFI, revealed an impaired sexual function, as found in other studies [28]. It is likely that are other contributors to the relationship between obesity and impaired sexual function, such as excessive hanging skin and social or mental aspects, especially depression, may be important for the sexual life of women after bariatric surgery [4,29].

There is research showing improvement in female sexual function after bariatric surgery, but it is not maintained after four years of procedure [21].

It is recognized that obesity is strongly associated with sexual dysfunction. This construct, in obese females, appears to improve by substantial weight reduction. Obesity-related sexual dysfunction is a complex condition linked to a range of psychological, biological, and social factors. Health professional are encouraged to routinely evaluate the sexual function of the obese patient population to identify those in need of psychological intervention [1,2,10]. Further research utilizing standardized measurement instruments are needed to evaluate larger samples and longer postoperative intervals.

One of the most discussed problems in satisfactory sexual performance is having good erectile function. It is noteworthy that most men in the present study did not have post-surgery erectile dysfunction, demonstrating that weight loss with surgery increases erectile function [17,19,31]. Bariatric surgery can be effective in improving male sexual function in obese individuals [18].

Changes in the sexual function of both genders are variable, both with regard to the domains evaluated and the magnitude of the effect. Even though the hormonal function of both genders was not evaluated, it is possible to infer that there was an improvement in male fertility after surgery, with a record of paternity after the surgical procedure. Such improvement was not observed in women. The explanation for this finding may be related to the patriarchal and male chauvinist society living in the north-eastern region of Brazil.

Limitations

Regarding to the present study, the design and the sample size do not limit the validity of the main results about positive influences of

bariatric treatment, especially in male gender. The implications for treatment of sexual dysfunctions in obese patients require further investigation, with larger samples and greater time of follow-up.

Conclusion

A trend towards better satisfaction with sexuality was observed among men who underwent bariatric surgery when compared to women. Important observation about the presence of almost normal erectile function and fatherhood among men lend support to the best surgical results, regarding sexuality, among men. Predictors of improvement and maintenance of quality of life, as well as more accuracy tool of investigation, self-body image and sexual function should be explored.

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