

Psychiatric disorders among bariatric surgery candidates and its relationship to weight loss in the follow-up

Abstract

Introduction: More understanding upon psychiatric disorders among bariatric surgery candidates is necessary since weight regain or surgery failure is frequently attributed to psychosocial and behavioral factors. Although most of the studies do not correlate preoperative psychiatric disorders to worse performance in the follow up, more studies are needed in order to better understand its real impact in terms of weight loss, obesity recurrence and global health.

Methods: An observational study was conducted at a private clinic in the South of Brazil, where patients underwent psychiatric examination. Beck Anxiety Inventory (BAI), Beck Depression Inventory (BDI) and Binge Eating Scale (BES) were applied. Data upon weight loss in the follow-up was retrieved from medical chart records, at 6 months, 12 months and 18 months after surgery.

Results: A total of 84 patients were included in the study, 72% were female. The great majority underwent bypass surgery (73%). In 57 patients (67.8%) at least one psychiatric disorder was detected and 66.3% were taking psychiatric medication. The applied scales detected almost 70% of the patients scored in the depression range, 55.1% in the anxiety disorder range and 42.9% scored in the moderate to severe binge eating disorder. Body mass index at base line was on average 41.06. In the follow up, the psychiatric disorder group lost less weight than the group without it 6 months after surgery ($p < 0.05$). At 12 and 18 months, the two groups loss weight in the same trend and no statistical difference were detected. Psychiatric medication use also was not associated to worse performance after bariatric surgery.

Discussion: In this small observational study, psychiatric disorders were detected in almost 70% of bariatric surgery candidates and worse weight loss performance 6 months after surgery was observed in the patients diagnosed with psychiatric disorders. There was no statistical difference in weight loss in the longer run, but results can be biased by missing data as patients tend to return to medical appointments less over time. The results are consistent with clinical observations and make it clearer that patients with psychiatric disorders need even closer attention from the multidisciplinary team. Larger studies are needed to validate the results and bring better quality information in longer follow ups.

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Introduction

Obesity is an urgent health problem in the world and needs to be properly addressed, as it has been estimated that global deaths attributable to high body mass index (BMI) have more than doubled, from 1990 to 2017.¹ The prevalence of obesity nearly tripled in the last 40 years and, in 2016, there were 650 million adults suffering from obesity worldwide (WHO). Bariatric surgery is superior to non-surgical treatment in terms of weight loss, remission rates of type 2 diabetes and metabolic syndrome.² There is a high rate of psychiatric disorders among candidates to bariatric surgery, ranging from 30% up to 78%, showing the methodological heterogeneity of the studies. Studies using structured psychiatric interview suggest that 52%-78% of patients had at least one psychiatric disorder during life,³⁻⁶ and approximately 40-48% of patients received at least one current psychiatric diagnosis during evaluation to surgery.^{6,7} Affective disorders (22%-44%), anxiety disorders (18.1%-25%) and eating disorders (12.8%-26%) are the most common diagnosis among this population.⁷⁻⁹ Child abuse and substance abuse disorder also

found in higher rates among surgery candidates than in the general population.¹⁰⁻¹²

Most of the studies do not correlate preoperative psychiatric disorders to worse performance in the follow up, although this understanding is controversial in the literature.¹³⁻¹⁹ It seems many of the studies detect a worse performance in patients suffering from psychiatric disorders, but sometimes the difference is not statistically significant. In the meta-analysis reviewed there was no difference in terms of weight loss in the follow-up in both groups (with or without psychiatric disorders). Mental disorders detected in the follow up such as grazing, loss of control eating and binge eating are indeed associated with obesity recurrence, as well as psychopathology in general, but the last with less robust effect.²⁰ The present study aims to identify the rate of psychiatric disorders in bariatric surgery candidates, identify preoperative psychiatric symptomatology such as detected by the Beck Depression Inventory (BDI), Beck Anxiety Inventory (BAI) and Binge Eating Scale (BES) and verify whether lifetime psychiatric diagnosis influence or not in weight loss at 6, 12 and 18 months.

Methods

An observational study was conducted at a private clinic in Porto Alegre, in the south of Brazil. All patients that underwent surgery in 2017 to 2018 were included. Psychiatric interview consisted of 3 appointments. Family members were requested to participate in the appointments only if necessary, for better psychiatric history elucidation. Beck Depression Inventory- II (BDI- II), Beck Anxiety Inventory (BAI), Binge Eating Scale (BES), all well-known instrument for measuring depression, anxiety and compulsive eating severity were applied. All scales have reliable and validated versions in Brazilian Portuguese and scoring followed the standard endpoints. BDI- II: 0-9 no depression, 10-18 mild to moderate depression, 19-29 moderate to severe depression and 30-63 severe depression. BAI: 0-10 no anxiety, 11-19 mild anxiety, 20-30 moderate anxiety and 31-63 severe anxiety. BES: 0-17 no binge eating, 18-26 moderate binge eating, 27 or higher severe binge eating. Weight loss data were collected from medical charts, using the range of 2 months before or after the date of 6 months, 12 months and 18 months after surgery. Statistical analysis was performed using SPSS v20.0 (*Statistical Package for the Social Science*). Continuous variables were described by average and standard deviation. Student's T test was used for group analysis and the significance level adopted was $P \leq 0,05$. Shalipro-Wilk test was performed to make sure data followed normal curves and later ANOVA was used for checking for comparing groups during the follow up.

Results

A total of 84 patients were included in the study. Most of them were female (72,6%), on average 36,67 years old, single (61,9%) and almost half of the sample (44%) had college degree. The surgery performed was jejunal ileal bypass in 73,5% of the patients, sleeve gastrectomy in 22,1 % of the cases and bariatric surgery re-intervention in 4,4%. Body mass index (BMI) was on average 41,06. In 57 patients (67,8%) at least one psychiatric disorder was detected and 66,3% were in use of psychiatric medication before surgery. The most common diagnosis was depressive disorder, followed by binge eating disorder. Scores in BDI in the depression range reached as high as 69.9% of the sample, 30.1% scoring in the moderate to severe depression range of the scale. Anxiety was detected by BAI in 55.1% of the sample, and 15.3% scored in the moderate to severe range. Binge eating as investigated by BES revealed 42.9% scored in the moderate to severe binge eating disorder (Figure 1).

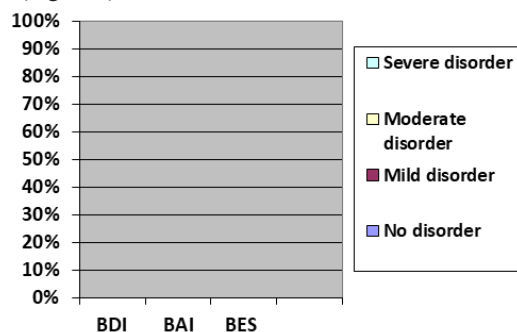


Figure 1 Type of surgery performed, BDI; Beck Depression Inventory, BAI; Beck Anxiety Inventory, BES; Binge Eating Scale.

Both groups diagnosed with psychiatric disorder and the group without psychiatric disorders were homogeneous as to sex, age, type of

surgery performed, BMI and all the other variables analyzed, as shown in Table 1. Having a psychiatric disorder detected was associated with worse performance in weight loss 6 months after surgery ($P < 0,05$). No statistical difference in weight loss was detected in the 12, 18 months follow up, although on average the group with psychiatric disorders tend to have higher BMI at all times (Table 2). Psychiatric medication use was not associated with worse performance after bariatric surgery and no differences in terms of weight loss was detected on this study (Table 3).

Table 1 Social Demographic data according to psychiatric disorder status on bariatric surgery candidates

Psychiatric disorder	NO N=27	YES N=57	Total N=84	P
Social demographic data				
Age (years)	40.4±12.1	36.4±12.3		0.2
Sex				0.46
Female	77.80%	70.20%	72.60%	
Male	22.20%	29.80%	27.40%	
Marital status				0.19
Married	74.10%	56.10%	36.90%	
Single	25.90%	42.10%	61.90%	
Widow	0.00%	1.80%	1.20%	
Education				0.09
Elementary School	0.00%	7.00%	4.80%	
High School	44.40%	54.50%	51.20%	
College graduation	55.60%	38.60%	44.00%	
Post-graduation	0.00%	0.00%	0.00%	
Type of surgery				0.72
Roux-en-Y Gastric Bypass	75.00%	72.70%	73.50%	
Sleeve Gastrectomy	25.00%	20.50%	22.10%	
Reintervention	0.00%	6.80%	4.40%	

Table 2 Weight on baseline and follow-up according to psychiatric disorder status

Psychiatric disorder	NO N=27	YES N=57	Missing	P
BMI	41.1±4.3	42.1±4.8	0%	0.398
Weight before surgery (kg)	111.0±20.0	118.4±19.8	0%	0.101
Weight at 6 months	82.1±16.0	92.1±15.1	20.30%	0.018
Weight at 12 months	74.7±15.3	77.3±10.3	51.20%	0.375
Weight at 18 months	65.8±19.7	77.5±10.6	76.20%	0.099

Discussion

Similarly to other studies, our study found a very high rate of psychiatric disorders among bariatric surgery candidates. We found a 67,8%, rate, whereas most studies indicate it is somewhere around 52-78%.³⁻⁶ One major limitation of our study was not using a structured psychiatric interview tool, nonetheless a very complete anamnesis in 3 appointments seemed to properly detect disorders and the population showed psychiatric disorders in the expected rate. BDI scores revealed depression is moderate to severe in 30% of the cases and BAI showed anxiety is moderate to severe in 15% of the cases, also in accordance

with literature, as affective disorders are the most common diagnosis, followed by anxiety disorders in this specific population.⁷⁻⁹ BES is a valid screening instrument for Binge Eating Disorder, using the cut score of 17.²¹ Nearly 43% of our sample scored 18 or more, showing that binge eating disorder is a frequent diagnosis among candidates. Actually a well conducted review of studies investigating BED among bariatric surgery patients found that prevalence of BED ranged from 14–56% also in accordance to our findings.²² Most of studies fail to show patients with depressive symptoms, binge eating disorder or any other psychiatric comorbidity have worse performance after bariatric surgery, as this recent study enrolling 345 adults.¹⁹ However, studies have determined that eating disorders after bariatric surgery, such as grazing, loss of control eating and binge eating are associated with worse performance.²⁰

It is reasonable to think that worse performance is seen in those who had such disorders before surgery and maintained it even after the procedure, rather than to think they developed new symptoms. In that manner, our study was able to detect worse performance in the 6 months in the group with psychiatric disorders compared to the group with no disorders detected. In 12 and 18 months, the study was no able to detect differences. A possible explanation for that is missing data, since we had a response rate lower over time. It is crucial that patients maintain mental health treatment and follow up with multidisciplinary team in order to obtain better results after bariatric surgery, as it is clear that bariatric surgery candidates have a high frequency of mental disorders detected and are at higher risk of either returning to obesity or developing another type of compulsive habit.²³ Lately, unfortunately, it has been also reported elevated risk of suicide after the procedure, which also needs further investigation.²⁴ Medication use rate was high in our sample and was not associated with worse performance in weight loss during the follow up, as it has been previously reported,²⁵ even though it remains a challenge as many psychiatric drugs are indeed associated with weight gain. Larger studies are needed to better elucidate the role of mental disorders and the use of psychiatric medication in the follow up of bariatric surgery patients, but it is never enough to emphasize its importance and its need to be addressed in this much compromised population.

Acknowledgments

None.

Conflicts of interest

The authors declares that there is no conflicts of interest.

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