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ORIGINAL ARTICLE

Psychosocial profile of candidates for bariatric surgery and its correlation with Binge-Eating Disorder

Perfil psicossocial de candidatos à cirurgia bariátrica e sua correlação com o Transtorno de Compulsão Alimentar Periódica

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KEYWORDS

Bariatric surgery
Binge-Eating Disorder
Psychological practice

ABSTRACT

Objective: To describe the psychosocial profile of candidates for bariatric surgery, verify the prevalence of Binge-Eating Disorder (BED) and analyze the correlation between psychosocial variables in patients with or without BED.
Methods: Cross-sectional study. Data collection was based on information from 125 patients, and the Periodic Binge-Eating Scale (BES) was applied by the Psychology section of a general hospital in southern Minas Gerais from July 2019 to March 2020. Candidates were separated into groups with and without BED, and psychosocial variables were correlated with groups.
Results: The BED prevalence was 41.6% (52). Most patients were women (101; 80.8%), between 30 and 49 years (68; 54.4%), had a paid job (80; 64%), had completed or incomplete high school (51; 48.8%), reported memories of "remarkable facts" in the child's family environment (78; 62.4%). Anxiety disorders were reported in 37.6% (47) and depressive disorders in 17.6% (22) of the sample. As for weight-loss treatments, 62.4% (78) tried at least three types; 58.4% (73) reported the perception of weight gain in childhood or adolescence. A statistically significant association was observed between BED and a low education (p = 0.009).
Conclusion: It was possible to characterize the studied population. It was observed that education can be considered a protective factor for the occurrence of BED.

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PALAVRAS-CHAVE

Cirurgia bariátrica
Prática psicológica
Transtorno da Compulsão Alimentar

RESUMO

Objetivos: Descrever o perfil psicossocial de candidatos a cirurgia bariátrica, verificar a prevalência do Transtorno da Compulsão Alimentar Periódica (TCAP) e analisar a correlação entre as variáveis psicossociais nos pacientes que apresentam ou não TCAP.
Métodos: Estudo documental de delineamento transversal. A coleta de dados foi feita a partir das informações de 125 pacientes e aplicação de Escala de Compulsão Alimentar Periódica (ECAP) pelo Serviço de Psicologia de um hospital geral no sul de Minas Gerais, no período de julho de 2019 a março de 2020. Os candidatos foram separados em grupo portador e não portador de TCAP, e correlacionadas as variáveis psicossociais entre os grupos.
Resultados: A prevalência TCAP foi de 41,6% (52). A maioria dos pacientes era mulher (101; 80,8%), entre 30 e 49 anos (68; 54,4%), exercia atividade remunerada (80; 64%), possuía o ensino médio completo ou incompleto (51; 48,8%), relatou lembranças de "fatos marcantes" no ambiente familiar infantil (78; 62,4%). Foram relatados transtornos ansiosos em 37,6% (47) e transtornos depressivos em 17,6% (22) da amostra. Quanto aos tratamentos para emagrecimento, 62,4% (78) tentaram ao menos três tipos; 58,4% (73) referiram percepção de aumento do peso na infância ou adolescência. Foi observada uma associação estatisticamente significativa entre a presença de TCAP e a baixa escolaridade (p = 0,009).
Conclusão: Foi possível caracterizar a população estudada. Observou-se que a escolaridade pode ser considerada um fator protetivo para a ocorrência da TCAP.

INTRODUCTION

According to the World Health Organization, obesity is defined as the excessive and abnormal accumulation of fat that impairs health[1]. It is considered a disease of multifactorial etiology, involving historical aspects related to changes in lifestyle in recent decades, such as the pattern of food consumption and physical activities, biological, sociocultural factors (beauty and health patterns), and psychological factors[2].

In Brazil, the prevalence of obesity grew 67% from 2006 to 2018, according to the 2018 Survey on Surveillance of Risk and Protective Factor for Chronic Diseases by Telephone Survey (*Pesquisa de Vigilância de Fatores de Risco e Proteção para Doenças crônicas por Inquérito Telefônico*, Vigitel) of the Ministry of Health[3]. Also, according to the study, the increase in the obesity rate was mainly driven by people aged between 25 and 44 years, being 20.7% more present in women.

In the Unified Health System (SUS), surgical treatment of obesity can be part of a comprehensive treatment based on health promotion, quality of life, and longitudinal care. The indication for bariatric surgery is given for individuals with body mass index (BMI) ≥ 50 kg/m^2; BMI ≥ 40 Kg/m^2, with or without comorbidities, and that were unsuccessful in treatments governed by longitudinal clinical protocols performed in primary care or specialized outpatient care, for at least two years; or even individuals with BMI > 35 kg/m^2 with comorbidities, who must have also tried other treatments, following clinical protocols without obtaining success for at least two years[4].

The patient must undergo a multidisciplinary assessment to perform bariatric surgery, including a psychological assessment. In the literature, the main aspects investigated in pre-surgical evaluations and which may generate contraindications or postpone the procedure are eating disorders, psychotic disorders, depression, intellectual disability, multiple suicide attempts or recent suicide attempts, active symptoms of the disorder obsessive-compulsive and bipolar disorder, as well as severe life stressors, use of nicotine, lack of understanding the risks, benefits and results of the surgical procedure, and resistance to adhere to postoperative recommendations[5].

The Binge-Eating Disorder (BED) is highlighted, characterized by the criteria of the Diagnostic and Statistical Manual for the Classification of Mental Disorders (DSM V)[6] as recurrent episodes of ingestion, in a short period, of large amounts of food, feeling of lack of control over the ability to stop eating, what to eat or how much to eat, which generates guilt and great anxiety related to the compulsion. It is worth emphasizing the difference between episodes of Binge Eating (BE) and the disorder itself (BED). BE is characterized by exacerbated food consumption over a short time (up to two hours), followed by feelings of guilt and loss of control over what or how much is eaten. When these episodes occur at least once a week for three months, BED[7] is characterized.

BED patients who are candidates for bariatric surgery also tend to undergo more treatments to lose weight, a high prevalence of major depression, and worse scores in assessing the quality of life[8]. Although there is no consensus in the literature on the subject, some studies indicate BED maintenance after bariatric surgery, which can lead the patient undergoing surgery to weight regains or other complications[9,11].

This study aims to describe the psychosocial profile of candidates for bariatric surgery, verify the prevalence of binge eating and analyze the association between psychosocial variables in patients with or without BED.

METHODS

A documentary, quantitative study with a cross-sectional, observational, and analytical design was conducted. For data collection, we used information

from the anamnesis and Periodic Binge-Eating Scale (BES) applied by the Psychology Service of a quaternary hospital in southern Minas Gerais. The BES was developed by Gormally et al.[12], translated and adapted to the Portuguese by Freitas et al.[13], and later validated[7].

One hundred thirty-five anamnesis and BES were selected, filled out by candidates for bariatric surgery who underwent psychological assessment from July 2019 to March 2020. This time frame was chosen due to the introduction of BES in the protocol of the psychology team in July 2019. Visually impaired and illiterate participants were assisted in the completion by family members or psychologists at the service. Ten anamnesis or incomplete scales were excluded, and the final convenience sample consisted of 125 individuals.

The role of the Psychology Service in bariatric surgery at the institution is based on the guidelines of the Brazilian Ministry of Health[4] and Federal Council of Psychology[14]. The anamnesis and the scale used agreed with the findings in the literature on the central issues to be investigated[5].

The anamnesis addressed sociodemographic and family issues, about life history, history of obesity, history of violence, mental health, sex life, self-esteem, work, suicide attempts, health treatments, eating habits, use of alcohol and other substances from the patient or family members, treatments performed in an attempt to lose weight, and investigated the understanding of the surgical treatment, expectations, motivation, social and family support for the procedure (Table 1).

The BES assesses the severity of binge eating in obese individuals, consisting of 16 self-administered

Table 1 — Classification of the variables present in anamnese

Variable	Anamnese Data	Classification
Gender	Female and male	Same
Age	Age in years informed by candidate	Age range <18, 18-29, 30-49, 50-60, >60
Education	Education informed by candidate	Illiterate/ Elementary school (complete or incomplete) / High School (complete or incomplete) / Higher Education (complete and/or incomplete) /post graduation).
Paid work	Employment of the applicant at the moment the anamnese was filled up.	Classified in: performing paying activity or not
Family environment during childhood	Memories of family environment from childhood: Normal; Frequent discussions; Lack of money, Lack of care and attention, separation of parents; verbal/physical violence; left to live with another family; overcare and over attention; Others.	In order to quantify the results it will be classified between the presence of a report of the described situations and the absence of situations, when the patient classifies their memory of the family environment as normal.
Sexual Abuse	Inquires if the patient has been through any kind of sexual abuse	Classified in: yes or no.
Self-extermination attempts	History of suicide attempts	Classified in: yes or no.
Treatments for obesity	Types of treatment: Physical exercise, medical, diets on their own/ alternative treatments; diet with nutritional follow up	No treatment type; one treatment; Two treatments; Three treatments; All treatments
Mental Health	Report on the history of mental distress history, including the following mental disorders and their symptomatology: Depression, Anxiety, Panic Disorder, Insonia; Others. It will be considered the reports with or without the conduction of the treatment, even if the diagnosis is not correct or haven't been carried out.	No disorder reported; Depressive disorder; Anxiety disorder (including insomnia, panic disorder and anxiety); Anxiety-depressive disorder.
Beggining of obesity fase	Age reported by the patient according to their memories from when weight gain was identified as a problem.	Stratified in age range: Childhood 0-12; Adolescence 13-18; Adult >18 years old.

questions. The classification is based on the score obtained by the individual, in which 17 is the cutoff point. Scores from 0 to 17 are considered without binge eating, from 18 to 26 as a moderate binge, and a score greater than or equal to 27 indicates severe binge. Despite its limitations and possible manipulation, the scale has proven to be a helpful instrument in the initial screening of the disorder[8]. ECAP performance was used to separate patients with severe or moderate BED (G1; n = 52) from patients without BED (G2; n = 73).

The anamnesis variables were categorized as shown in Table 1 and subsequently stratified using absolute and relative frequencies. Finally, the variables presented in the two groups were correlated using the chi-square test or Fisher's rapid test. Statistical significance was defined as $p < 0.05$. The statistical software GraphPad Prism v.8 (San Diego, CA, USA) was used.

This study was approved by the Research Ethics Committee of the Faculty of Medicine of Itajubá (FMIT) (CAAE: 2962370.6.0000.5559, decision nr. 3.921.509), and followed the ethical precepts for researching in humans defined by the Declaration of Helsinki and Resolution 466/2012 of the CNS/MS/BR.

RESULTS

Of the 125 patients studied, most were female (n = 101; 80.8%), aged between 30 and 49 years (n = 68; 54.4%), had a paid job (n = 80; 64%), had complete and/or incomplete high school education (n = 51; 48.8%) and reported memories of “remarkable facts” in the child's family environment (n = 78; 62.4%). Thirteen patients (10.4%) suffered sexual violence and 7 had attempted suicide (5.6%). The majority reported some type of mental suffering (n = 69; 55.2%), consisting of 47 (37.6%) anxiety disorders and 22 (17.6%) anxiety/depression. As for slimming treatments, 33 (26.4%) tried at least three types. Most patients report increased weight gain in childhood or adolescence (n = 73; 58.4%).

It was verified through the BES analysis that 73 patients (58.4%) did not have BED, while 44 (35.2%) presented the moderate form and 8 (6.4%) the severe form.

Table 2 shows the association of variables observed between groups. There was a statistically significant association with variable "education" ($p = 0.009$), in which patients with BED showed a lower level of education. The other variables analyzed did not show a statistically significant correlation.

DISCUSSION

Studies conducted on bariatric surgery highlight that women are the majority in the search for surgery[15-18] and the prevalence of BED[6,19-21]. This can be explained by the greater influence of body and beauty ideals that women are subject to and the cultural influence of the subjective female constitution[22]. Women are more dissatisfied with their body image, which leads them to practice diets without specialized supervision, motivated by a morbid fear of gaining weight, making them susceptible to developing eating disorders[23,24].

The age group from 30 to 49 years has the highest prevalence of BED[19-20], and, simultaneously, it is the most common in patients seeking surgical treatment[15-17,21]. This could be justified by the experience of midlife reviews, a process relevant to the period of the life cycle in which new discoveries about oneself occur, given the awareness of the finiteness and deadlines for decision-making and changes in plans, which encourage corrections in life projects, also related, in these cases, to health and concern with longevity and quality of life[25].

In both groups, a significant number of individuals identified the beginning of weight accumulation during childhood, as in other studies[21,26]. In addition to genetic issues, other factors are related, such as cultural and family behavioral patterns of binge eating, regardless of obesity[27].

The percentage of subjects who report being victims of sexual abuse in the selected sample is expressive. Studies show that obese people with a history of sexual abuse tend to have feelings of unworthiness and inadequacy. Furthermore, the probability of developing psychiatric comorbidities significantly increases[28,29]. The problematic relationship with food can be a way found to modify this violated body[30]. However, there is no consensus regarding the relationship between sexual abuse, eating disorders, and obesity[30,31].

Other types of abuse and strong memories of childhood adversities and issues related to the family environment draw attention in the results presented. Other studies have also identified this aspect in the life history of obese candidates for bariatric surgery[32]. In a comparative study, the obese group had more adverse experiences in their history than non-obese subjects and a higher prevalence of health-related complaints[33].

Regarding the prevalence of BED, the findings of this study agree with other researches that used the same scale[8,26,34]and presented respectively 56.7%, 17.4%, and 53.2% of compulsion in patients candidate to surgery. A systematic literature review found that the prevalence of BED ranged from 16% to 51.6% in Latin American obese populations in weight loss programs[35].

There is evidence that BED is more common in obese individuals and weight-loss program participants[6]. It is the most common eating disorder in the general population, reaching 3%[27]. In Brazil, more specifically in the population of São Paulo, the prevalence of BED was 4.7%, according to WHO data[36].

Regarding psychiatric comorbidities, a review of the Latin American literature[36] indicated a more significant association in obese individuals with BED than those who are not affected by the disorder, especially mood and anxiety disorders.The findings of the present study are in accordance with this statement since most subjects who have BED report suffering from anxiety. A Portuguese study[21] showed that individuals before bariatric and metabolic surgery had more compulsive behavior and anxiety symptoms that precipitated compulsive episodes, while others investigated psychopathological and personality constructs had no clinical and statistical significance.

Table 2 — Comparison of the psychosocial variable between groups G1 (with BED) and G2 (without BED) (N = 125). Values expressed in n (%)

Variable	G1 (n = 52)	G2 (n = 73)	p-value*
Gender			
Male	7 (5.6)	17 (13.6)	0.169
Female	45 (36)	56 (44.8)	
Age (years)			
<18	0 (0)	1 (0.8)	
18-29	13 (10.4)	11 (8.8)	
30-49	26 (20.8)	42 (33.6)	0.580
50-60	10 (8.0)	16 (12.8)	
>60	3 (2.4)	3 (2.4)	
Paid Work			
Yes	30 (24)	50 (40)	0.215
No	22 (17.6)	23 (18.4)	
Education			
Illiterate	1 (0.8)	0 (0)	
Elementary	18 (14.4)	14 (11.2)	
High School	25 (20)	36 (28.8)	0.009
Higher Education	7(5.6)	20 (16)	
Post graduation	1 (0.8)	3 (2.4)	
Disturbances in the family environment			
Yes	33 (26.4)	45 (36)	0.836
No	19 (15.2)	28 (22.4)	
Sexual Abuse			
Yes	7 (5.6)	6 (4.8)	0.344
No	45 (36)	67 (53.6)	
Self-extermination attempt			
Yes	4 (3.20	3 (2.4)	0.449
No	48 (38.40	70 (56)	
Mental Health			
No disorder report	21 (16.8)	35 (28.0)	
Anxiety disorder	21 (16.8)	26 (20.8)	0.703
Anxiety/depressive disorder	10 (8.0)	12 (9.6)	
Types of treatment			
None	3 (2.4)	1 (0.8)	
One treatment	8 (6.4)	11 (8.8)	
Two treatments	10 (8.0)	14 (11.2)	0.696
Three treatments	12 (9.6)	21 (16.8)	
More than three types	19 (15.2)	26 (20.8)	
Beginning of obesity fase			
Childhood	23 (18.4)	23 (18.4)	
Adolescence	9 (7.2)	18 (14.4)	0.316
Adult (> 18 years old)	20 (16)	32 (25.6)	

BED: Binge-Eating Disorder

Another point that deserves to be highlighted is the high prevalence of report of mental suffering in obese individuals candidates for bariatric surgery without BED. Depression is a significant comorbidity in candidates for bariatric surgery, reaching 35%[16] and 36.5%[18]. In the study by Birk and Souza[26], 27% had severe anxiety as comorbidity. Another study that also compared groups with and without BED showed similar results, considering that in both groups there was a high prevalence of generalized anxiety, depression in the past, agoraphobia, and panic syndrome[8].

Binge eating is also associated with other forms of psychic suffering such as anxiety, social withdrawal, and depression[27]. According to the DSM V, the most common psychiatric comorbidities are bipolar, depressive, anxiety, and, to a lesser extent, substance use disorders. It is important to emphasize that comorbidities are linked to binge eating severity and not to the degree of obesity[6].

The findings of this work corroborate these

statements because of the notorious history of mental health in the study sample. Furthermore, they conform to the study by Cruz and Nunes that showed that emotional factors act as both cause and consequence of obesity, highlighting the importance of this population's mental health treatment[37].

This study found a higher occurrence of BED in the less educated categories. Other studies have also shown that higher prevalences of BED occur in people with lower levels of education[18]. In the study by Costa and Pinto[38], however, binge-eating was more present in people with higher education levels, although no statistical significance was found. In the study by Ferreira and Castro[39], there was no association between the variables. The authors also note the heterogeneity of the disorder in socioeconomic classes. Alternatively, in the study by Conde and Borges[40], the higher level of education worked as a protective factor to the incidence and prevalence of obesity in women, despite compulsion not being included as an analysis category.

In this sense, education is an essential social determinant in health that provides elements for understanding the socioeconomic condition and is related to the conditions of access to health and education services and as a marker of social vulnerability. Thus, the educational element can directly interfere in the health and disease processes linked to obesity and BED[41].

Concerning this study's limitations, the compulsory nature of the psychological assessment can be mentioned, which can, in some cases, lead to a bias in data acquisition and possible manipulation in the form the instruments were applied.Furthermore, BES is a complex instrument to be answered by people with low levels of education. Other instruments and strategies must be used to better assess BED in future studies.

CONCLUSION

The work allowed us to characterize the profile of patients seeking bariatric surgery. The high prevalence of reports of psychiatric comorbidities, such as anxiety and depression, about obesity and BED highlighted the need to invest in and improve the pre-surgical psychological assessment and preparation. It was noted that a higher level of education could be considered a protective factor for BED in obese patients.

It is also highlighted the importance of studying this topic and implementing public health policies that expand access to mental health services for the abovementioned population, especially at the level of primary care, providing comprehensive care to patients with obesity who need it or not bariatric surgery. Given the findings of this study, the importance of mental health care is highlighted as a form of protective measure, both concerning BED and obesity.

This study also contributes to broadening the discussion on the reliability of the instrument used, the ECAP. However, it emphasizes the importance of considering the various psychosocial aspects and the life history of subjects who intend to undergo bariatric surgery. The results found can help understand these patients and the factors that can be characterized as a risk of developing obesity and eating disorders, providing subsidies for expanding the resources of outpatient practice.

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