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RESEARCH

ANXIETY CONTRIBUTES TO INCREASING THE DEGREE OF DEPENDENCE ON NURSING CARE IN THE IMMEDIATE POST-OPERATIVE OF BARIATRIC SURGERY

ANSIEDADE CONTRIBUI PARA O AUMENTO DO GRAU DE DEPENDÊNCIA DA ASSISTÊNCIA DE ENFERMAGEM NO PÓS-OPERATÓRIO IMEDIATO DE CIRURGIA BARIÁTRICA

LA ANSIEDAD CONTRIBUYE A AUMENTAR EL GRADO DE DEPENDENCIA DE ATENCIÓN DE ENFERMERÍA EN EL POSTOPERATORIO INMEDIATO DE CIRUGÍA BARIÁTRICA

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ABSTRACT

Objective: to determine the prevalence of anxiety and depression symptoms in patients in the immediate postoperative period of bariatric surgery, their relationship with sociodemographic and clinical data, as well as their implications on the degree of dependence on nursing care. **Methodology:** analytical, cross-sectional study; for data collection, the Hospital Anxiety and Depression Scale and the Fugulin Classification Instrument were used. Data were expressed by frequencies, means and standard deviations; comparisons made by chi-square test or Fisher's exact test or the maximum likelihood ratio; for data crossings, the t test, ANOVA, Kruskal-Wallise Mann-Whitney were adopted, differences accepted when p≤0.05. **Results:** the sample was made up of 49 patients predominantly female (89.8%), aged between 30 and 39 years (46.9%), grade III obesity (71.4%) and with comorbidities (93.9%). It was identified that 42.9% had symptoms of anxiety of which 38.1% had mild symptoms, 52.4% moderate and 9.5% severe. Still, 28.6% of the patients manifested symptoms of depression, of which 78.6% were mild, 14.3% moderate and 7.1% severe. In the group of patients "with symptoms of anxiety" the percentage was statistically higher for individuals who demand high dependency / intensive care (52.4%) than in the group "without symptoms of anxiety" (21.4%). **Conclusion:** this study shows a relevant prevalence of symptoms of anxiety and depression in the immediate postoperative period of bariatric surgery and that patients with anxiety depend on more complex nursing care, intervening directly in the care and managerial work of nurses.

Keywords: Bariatric Surgery; Anxiety; Depression; Nursing Care.

RESUMO

Objetivo: *determinar a prevalência dos sintomas de ansiedade e depressão em pacientes no pós-operatório imediato de cirurgia bariátrica, sua relação com os dados sociodemográficos e clínicos, bem como suas implicações sobre o grau de dependência da assistência de Enfermagem.* ***Metodologia:*** *estudo analítico, transversal; para a coleta de dados utilizaram-se a Escala Hospitalar de Ansiedade e Depressão e o Instrumento de Classificação de Fugulin. Os dados foram expressos por frequências, média e desvio-padrão; comparações feitas por teste qui-quadrado ou teste exato de Fisher ou a razão da máxima verossimilhança; para os cruzamentos dos dados adotaram-se o teste t, ANOVA, Kruskal-Wallise Mann-Whitney, diferenças aceitas quando p≤0,05.* ***Resultados:*** *a amostra foi integrada por 49 pacientes predominantemente do sexo feminino (89,8%), idade entre 30 e 39 anos (46,9%), obesidade grau III (71,4%) e com comorbidades (93,9%). Identificou-se que 42,9% possuíam sintomas de ansiedade dos quais 38,1% pontuavam sintomas leves, 52,4% moderados e 9,5% graves. Ainda, 28,6% dos pacientes manifestavam sintomas de depressão, dos quais 78,6% eram leves, 14,3% moderados e 7,1% graves. No grupo de pacientes "com sintomas de ansiedade" o percentual foi estatisticamente maior de indivíduos que demandam cuidados de alta dependência/*

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*intensivo (52,4%) do que no grupo "sem sintomas de ansiedade" (21,4%). **Conclusão:** este trabalho demonstra relevante prevalência de sintomas de ansiedade e depressão no pós-operatório imediato de cirurgia bariátrica e que os pacientes com ansiedade dependem de cuidados de Enfermagem de maior complexidade, intervindo diretamente no trabalho assistencial e gerencial de enfermeiro.*

Palavras-chave: *Cirurgia Bariátrica; Ansiedade; Depressão; Cuidados de Enfermagem.*

RESUMEN

Objetivo: *determinar la prevalencia de síntomas de ansiedad y depresión en pacientes en el postoperatorio inmediato de cirugía bariátrica, su relación con los datos sociodemográficos y clínicos, así como sus implicaciones en el grado de dependencia del cuidado de enfermería.* ***Metodología:*** *estudio analítico, transversal; para la recogida de datos se utilizaron la escala de ansiedad y depresión hospitalaria y el sistema de clasificación de pacientes de Fugulin. Los datos se expresaron por frecuencias, medias y desviaciones estándar; comparaciones hechas por la prueba chi-cuadrado o el test exacto de Fisher o la razón de máxima verosimilitud; para los cruces de datos se adoptó la prueba t, ANOVA, Kruskal-Wallise Mann-Whitney, se aceptaron diferencias cuando p≤0.05.* ***Resultados:*** *la muestra estuvo conformada por 49 pacientes predominantemente mujeres (89.8%), con edades entre 30 y 39 años (46.9%), obesidad grado III (71.4%) y con comorbilidades (93.9%) Se identificó que el 42.9% tenía síntomas de ansiedad, de los cuales el 38.1% tenía síntomas leves, el 52.4% moderados y el 9.5% severos. Aún así, el 28.6% de los pacientes manifestó síntomas de depresión, de los cuales 78.6% fueron leves, 14.3% moderados y 7.1% severos. En el grupo de pacientes "con síntomas de ansiedad", el porcentaje fue estadísticamente más alto de personas que exigen cuidados de alta dependencia / cuidados intensivos (52.4%) que en el grupo "sin síntomas de ansiedad" (21.4%).* ***Conclusión:*** *el estudio muestra una prevalencia relevante de síntomas de ansiedad y depresión en el postoperatorio inmediato de cirugía bariátrica y que los pacientes con ansiedad dependen de cuidados más complejos que afectan directamente los servicios de atención y gestión de enfermería.*

Palabras clave: *Cirugía Bariátrica; Ansiedad; Depresión; Atención de Enfermería.*

INTRODUCTION

Obesity is defined as a chronic inflammatory disease, characterized by excessive accumulation of adipose tissue, acting as a precursor to diseases such as systemic arterial hypertension and diabetes *mellitus*.[1] Its origin is multifactorial, caused by the association or not of genetic, epigenetic, metabolic, environmental, social and cultural factors.[2] It is a public health problem, being one of the most serious illnesses faced by mankind.[1]

Although obesity is not characterized as a disorder of psychiatric origin, this population has a high prevalence of depression, anxiety, eating disorders, alcohol and drug abuse.[3,4] Depression is the disorder that is most related to obesity. Its prevalence is up to 70% higher among people with obesity, especially among women.[3] Anxiety also has a positive correlation with the increase in body fat and inflammatory markers of obesity.[4-6]

When treatment alternatives related to diet modification, physical activity and medication are exhausted, bariatric surgery emerges as the possibility of effective and lasting treatment for obesity and metabolic syndrome.[7] Individuals between 18 and 65 years of age are eligible for this surgery, with grade III obesity or grade II obesity with comorbidities; surgery is contraindicated for those who use illicit drugs, with abuse of legal drugs and/or with severe psychotic conditions, among others.[8]

Bariatric surgery seems to act not only on the problems inherent to the body, but also on those of psychological origin,[9] and although the consequences of physical origin are well established, the evidence on its relationship with mental disorders remains under investigation.[3]

An increasing number of scientific studies have identified psychiatric disorders in a patient in the postoperative period in the medium and long term of this surgery. Despite an apparent improvement in the first months after the surgical procedure, the rate of suicide, depression, compulsion, anxiety and the abusive use of alcohol and drugs increase again over time.[4,9-11] However, there still does not exist data available in the literature to describe the symptoms of mental disorders in the immediate postoperative period of this surgery.

National research and guidelines have emphasized that one of the strategies to minimize the damage caused by this surgery includes the work of a multidisciplinary team to monitor the physical and psychological well-being of patients before and after bariatric surgery.[8,10,11] A Nursing research addressing metal health has contributed to the production of scientific knowledge and the improvement of skills for the nurse's care practice, making it possible to contemplate the patient in an integral way: being biological, social, psychological and spiritual.[12]

Thus, as the number of bariatric surgeries increases, so does the need to understand these phenomena and the way they influence the complexity of nursing care. Thus, the aim of this study was to determine the prevalence of symptoms of anxiety and depression in patients in the immediate postoperative period of bariatric surgery, its relationship to sociodemographic and clinical data, as well as its implications on the degree of dependence on Nursing care.

METHODOLOGY

This is an analytical study with a cross-sectional design carried out in the surgical clinic of a university hospital that is a reference in the care of patients with obesity and metabolic syndrome in Southeast Brazil, in the period between May and July 2018.

The study population comprises patients in the immediate postoperative period of bariatric surgery, specifically from 22 to 24 hours after surgery, with surgical techniques being used in Roux-en-Y sleeve or gastric bypass. The sample was obtained by convenience, in which all patients who were in the postoperative period of bariatric surgery during the period established in this research were approached, including those over the age of 18 and who agreed to participate in the research and signed the Free and Informed Consent Term. Those who had previously undergone bariatric surgery, those who had disorientation and/or lack of verbal communication at the time of the interview were excluded.

Data collection was performed directly with the patient at a single time and privately. It started with the sociodemographic and clinical characterization of the sample, using a data collection instrument containing information about sex, age, marital status, education, degree of obesity and comorbidities (addressing only systemic arterial hypertension, diabetes *mellitus* and dyslipidemia).

Then, an instrument was applied to collect data related to the preparation for surgery (preoperative), composed of the following questions: "Have you had undergone bariatric surgery before?"; "Do you know what type of bariatric surgery you underwent?"; "Do you know the risks of bariatric surgery?"; "Do you know the benefits of bariatric surgery?"; "Which health professional did you receive these guidelines from?".

For the investigation of signs and symptoms of anxiety and depression, the Hospital Anxiety and Depression Scale (HADS) was used,[13] a reliable and validated scale for the Portuguese language and the Brazilian population, which can be applied to patients hospitalized in anydifferent hospital sectors, psychiatric or non-psychiatric wards, even outside the hospital environment.[14,15] This instrument consists of 14 questions, seven for anxiety and seven for depression, with a response scale ranging from zero to three, adding up to one maximum score of 21 points for anxiety or depression. For its interpretation, it is considered "with symptoms of anxiety" or "with symptoms of depression" score equal to or greater than eight; eight to 10 mild symptoms, 11 to 14 moderate symptoms and 15 to 21 severe symptoms.[13,16]

Finally, for the verification of care complexity, the degree of dependence on Nursing care was performed, using the Fugulin Classification Instrument,[17] adapted by Santos *et al.*[18] This classification encompasses the areas of care: mental status, oxygenation, vital signs, mobility, ambulation, food, body care, elimination, therapy, cutaneomucosal integrity/tissue impairment, use of bandages and time used to perform them. The grading of care complexity is performed so that each area of care is scored from one to four, with the sum of the care categories being classified as: intensive care (above 34 points), semi-intensive (29-34), high dependence (23-28), intermediate (18-22) and minimum (12-17).

Data analysis was performed using the Statistical Package for the Social Sciences (SPSS) version 20 and Bioestat version 5.3, consisting of a descriptive analysis, whose categorical variables were expressed by their absolute and relative frequencies. The distribution of metric variables was assessed by determining the mean and standard deviation. The comparison between categorical variables was made using the chi-square test or Fisher's exact test or the maximum likelihood ratio. For the crossing of the data of the anxiety or depression scores with categorical variables, the t tests for means and ANOVA, when the data had normal distribution, or the non-parametric Mann-Whitney and Kruskal-Wallis tests, when the data normality were used was rejected by the Shapiro-Wilk test. Differences were accepted when $p \leq 0.05$.

This research complied with national and international standards of ethics in research involving human beings; the project was analyzed and approved by the Ethics and Research Committee, under the opinion report number 2.536.371, dated 03/Oct/2018. CAAE: 79282217.1.0000.5071.

RESULTS

In the period covered by this study, 52 people received bariatric surgery, among them 49 patients who met the inclusion criteria and were included in the sample of this research. Two patients were excluded for having previously undergone bariatric surgery and one for having refused to participate in the research. In its sociodemographic and clinical characterization, the sample consisted predominantly of female (89.8%, n=44), aged between 30 and 39 years (46.9%, n=23), married (63.3%, n=31) and complete high school (53.1%, n=26). In addition, most patients had grade III obesity (71.4%, n=35) and comorbidities such as systemic arterial hypertension and/or diabetes *mellitus* and/or dyslipidemia (93.9%, n=46), see Table 1.

All members (100%, n=49) reported having received professional guidance on the risks and benefits involved in this surgical process during the preoperative period. The nurse was the main health professional mentioned, for performing this function, since 100% (n=49) of the patients declared to have received this guidance from him/her. In addition to the guidance given by Nursing, 26.5% (n=13) of the sample also received guidance from the psychologist, 14.3% (n=7) from the doctor, another 14.3% (n=7) from the nutritionist and, finally, 2% (n=1) of the social worker.

As for the type of surgery performed, Roux-en-Y gastric sleeve or bypass, only two patients did not know which of these surgical techniques they underwent.

Regarding the scores obtained after the application of the HADS presented in Table 2, it was observed that 42.9% (n=21) of the evaluated patients manifested anxiety symptoms in the immediate postoperative period and, of these, 38.1% (n=8) had mild symptoms, 52.4% (n=11) moderate symptoms and 9.5% (n=2) severe anxiety symptoms. It was found that 28.6% (n=14) of the patients exhibited signs and symptoms of depression, of which 78.6% (n=11) scored

Table 1 - Characterization of the sample according to: sex, age, marital status, education, level of obesity and comorbidities (systemic arterial hypertension and/or diabetes mellitus and/or dyslipidemia). *Vitória* - ES, 2018

Variables	n	%
Sex		
Male	5	10.2
Female	44	89.8
Age range		
20 to 29 years	2	4.1
30 to 39 years	23	46.9
40 to 49 years	10	20.4
50 to 59 years	9	18.4
60 years or more	5	10.2
Marital status		
Married	31	63.3
Not married	18	36.7
Education		
Elementary school	17	34.7
High school	26	53.1
Highereducation	6	12.2
Obesity level		
Grade 1 (BMI 30-34.9)	3	6.1
Grade 2 (BMI 35-39.9)	11	22.4
Grade 3 (BMI ≥ 40)	35	71.4
Comorbidities		
Without comorbidities	3	6.1
With comorbidities	46	93.9
Total	**49**	**100.0**

BMI – Body mass index.

Table 2 - Signs and symptoms of anxiety and depression in patients in the immediate postoperative period of bariatric surgery. *Vitória* - ES, 2018

Variables	n	%
Anxiety symptoms		
Without anxiety	28	57.1
With anxiety	21	42.9
Anxiety degree		
Mild	8	38.1
Moderate	11	52.4
Severe	2	9.5
Total	**21**	**100.0**
Depression symptoms		
Without depression	35	71.4
With depression	14	28.6
Depression degree		
Mild	11	78.6
Moderate	2	14.3
Severe	1	7.1
Total	**14**	**100.0**
Total	**49**	**100.0**

Table 3 - Degree of dependence on Nursing care in the immediate postoperative period of bariatric surgery. *Vitória* - ES, 2018

Dependence on Nursing care	n	%
Care		
Minimum	7	14.3
Intermediate	25	51.0
High dependency	14	28.6
Semi-intensive	3	6.1
Intensive	0	0
Total	**49**	**100.0**

mild symptoms, 14.3% (n=2) moderate symptoms and 7.1% (n=1) severe symptoms of depression.

When investigating the degree of dependence on Nursing care presented by this sample, according to the Fugulin Classification Instrument,[17,18] it was identified that 14.3% (n=7) were dependent on minimal care, 51% (n=25) intermediate care, 28.6% (n=14) of high dependency care and 6.1% (n=3) of semi-intensive dependence (Table 3).

Figure 1 compares the scores of anxiety symptoms (Figure 1.A) and depression symptoms (Figure 1.B) with the degree of dependence on nursing care. Thus, it was possible to identify that patients who demanded intermediate and high dependency/semi-intensive care obtained statistically higher mean scores for anxiety (7.12±3.76 and 9.65±3.64, respectively) compared to those with minimal care (2±1.53; mean ± standard deviation, respectively, $p<0.05$).

The same did not occur when considering the means of depression scores, since there was no statistically significant difference from the depression with the variables tested (minimum care:4±2.16; intermediate: 6±3.39; high/semi-intensive:6.53±3.54; mean ± standard deviation, respectively, $p> 0.05$).

This study also sought to investigate a possible association between anxiety and depression symptoms and the degree of obesity and the degree of care dependence (Table 4).

Thus, it was found that there was no association at the intersection between the variables: anxiety symptomsand the degree of obesity ($p=1$). However, in the group of patients "with anxiety" there was a statistically higher percentage of individuals with high dependency/semi-intensive nursing care (52.4%) than in the "without anxiety" group (21.4%, $p=0.004$).

In the association between depression symptoms and the degree of obesity and the degree of dependence on nursing care, no statistically significant results were found ($p>0.05$) for these variables.

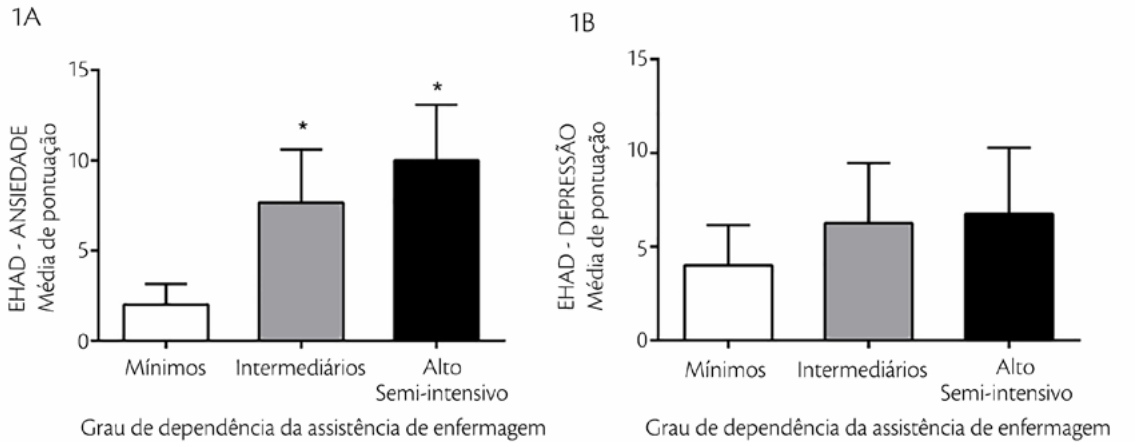

Figure 1 - Scores of Anxiety Signs and Symptoms (1A) and Depression (1B) according to the Degree of Dependence on Nursing Care of patients in the immediate postoperative period of bariatric surgery. Vitória - ES, 2018
Legend: Values expressed as mean ± standard deviation. Figure 1A: *p0.05, Kruskal-Wallis test. Abbreviation: HADS - Hospital Anxiety and Depression Scale[13]

Table 4 - Anxiety symptoms and depression symptoms versus degree of obesity and degree of dependence on Nursing care in the immediate postoperative period of bariatric surgery. *Vitória* - ES, 2018

Variables	AnxietySymptoms				p-value
	Withoutanxiety		Withanxiety		
	N (28)	%	N (21)	%	
Degreeofobesity					
Grade 1 and 2	8	28.6	6	28.6	1.000#
Grade 3	20	71.4	15	71.4	
Degree of dependency					
Minimum	7	25.0	-	-	0.004+
Intermediate	15	53.6	10	47.6	
High\Semi-intensive	6	21.4	11	52.4	
Variáveis	**DepressionSymptoms**				**p-value**
	Withoutanxiety		Withanxiety		
	N (35)	%	N (14)	%	
Degreeofobesity					
Grade 1 and 2	7	20.0	7	50.0	0.076*
Grade 3	28	80.0	7	50.0	
Degree of dependency					
Minimum	7	20.0	-	-	
Intermediate	17	48.6	8	57.1	0.074[&]
High\Semi-intensive	11	31.4	6	42.9	

#p > 0.05 Fisher's exact test. +p < 0.05 for differences between "without" and "with" anxiety symptoms. Maximum likelihood ratio.*p> 0.05; Mann-Whitney test. [&]p > 0.05; Kruskal-Wallis test.

DISCUSSION

The present study identified that patients in the immediate postoperative period of bariatric surgery have a relevant prevalence of symptoms of anxiety and depression and that, specifically those with anxiety symptoms, are more dependent on Nursing care compared to those without symptoms, making it evident that the anxiety negatively influenced the patients' organic evolution.

The literature shows that the anxiety rate among people with obesity is up to 40%, and for those who receive bariatric surgery, this percentage tends to decrease in the first months, however, this disorder persists in this population, increasing again, on average, six months after the surgical process.[4,6,9]

Although most of the studied sample requires intermediate care, patients "with symptoms of anxiety" depended mainly on care classified as high dependence and semi-intensive. The increase in the degree of complexity of care can be justified by the manifestations commonly presented by patients with anxiety, such as excessive worry, fear, apprehension, as well as physical symptoms such as fatigue, tension, cardiorespiratory and autonomic nervous system changes.[5,19]

In addition, anxiety is described as a harmful factor for postoperative evolution, as it promotes changes in GABAergic neurotransmission in the hypothalamus. Significantly, it increases circulating levels of inflammatory markers in people with obesity, regardless of that production already attributed to adiposity and high body mass index, namely: C-reactive protein, tumor necrosis factor-α and interleukin-6. This seems to contribute to the continuous increase in cardiovascular damage[5,19] and return of weight gain after long-term surgery.[6]

Similar to anxiety, depression symptoms are reported to be reduced in the first months after bariatric surgery, gradually increasing again until the third year after surgery, a period in which the incidence of suicides among patients is also increased.[4,10,20] In this research, although 28.6% of the sample had depressive symptoms already in the immediate postoperative period, there was no statistical correlation between depressive symptoms and

the degree of dependence on Nursing care. New surveys with a high number of participants may clarify this issue.

The results presented here emphasize the importance of monitoring and preoperative screening performed by a multidisciplinary team, so that there is a reduction in anxious and depressive symptoms in the immediate and postoperative period or even that it may contraindicate surgery as a strategy for safe surgery. According to Ordinance 424/2013 of the Ministry of Health,[8] people with uncontrolled psychiatric disorders, including the use of alcohol or illicit drugs, are contraindicated for surgery.

The nurse was the health team professional who most participated in the orientation process on bariatric surgery. Researches attest that preoperative guidelines performed by nurses promote a positive impact on the postoperative period, helping to reduce stress and fear, being intrinsically linked to fewer complications.[21,22]

The nurse who includes clinical research in mental health in his assistance can understand the integrality of the biological, sociocultural, psychic and spiritual being, as well as understand the correlation between psychic and organic health. Our work and other studies in the literature confirm that nursing research in mental health is an important mechanism for planning and interventions in comprehensive health care.[12,23]

From the association between the anxiety scores obtained by the HADS and the Fugulin Classification Instrument, it was possible to verify that the higher the score for anxiety, the greater the degree of dependence on Nursing care. Fugulin's patient classification instrument[17,18] is an important tool for Nursing, recommended for knowledge and assessment of patients' care profile, allowing them to subsidize the planning and implementation of qualified care, favoring their recovery and well-being. In addition, it also functions as a managerial instrument, since it allows quantifying the number of nursing staff and the requirement for human resources for the sector under investigation.[17,24]

As for the profile of the sample presented in this study, most are female, aged between 30 and 39 years, with an income of approximately two minimum wages and high school education. As presented by the *Vigitel* Brazil 2017 survey, on a national scale, obesity has grown 60% in the last 10 years, with a similar percentage between men (18.1%) and women (19.6%), reaching mainly adults between 35 and 64 years old and it is inversely proportional to the level of education.[25]

Although the obesity index is similar between the male and female genders, data from national and international surveys show that women are the majority in the search for bariatric surgery.[26,27] It is described that this differentiated gender distribution can be justified by data that show that women are more aware of the risks arising from obesity, better perception of their own body image, vanity and are more eligible for surgery.[27]

Most of the studied population had comorbidities such as systemic arterial hypertension and or diabetes *mellitus* and/or dyslipidemia. Our data reaffirm the various studies in the literature, which highlight obesity as an important risk factor for the development of different chronic diseases.[28,29]

In view of the obesity epidemic, its comorbidities and the metabolic syndrome, extensive research into the possibility of reversing this condition has been the subject of intense research, including bariatric surgery, indicated as an effective means of normalizing anthropometric changes, comorbidities and the diagnosis of metabolic syndrome, with increased life expectancy.[27,30]

The potential limitations of the study deal with the moment of data collection, since, in the immediate postoperative period, the patient presented with pain or discomfort related to the surgical process. In addition, problems related to the physical environment, such as noise and circulation of many health professionals, may have compromised the patients' attention during the application of the instruments.

CONCLUSION

This research highlights the relevant prevalence of symptoms of anxiety and depression in patients in the immediate postoperative period of bariatric surgery and how these disorders of psychic origin influence the organic evolution of patients, since patients with anxiety symptoms require Nursing care of greater complexity, intervening directly in the care and managerial work of nurses.

Even though bariatric surgery is considered a safe procedure and an important strategy for the control of obesity and metabolic syndrome, it is not exempt from complications in the short, medium and long term. Thus, the need to understand this population in order to help them with their needs is explicit, which demands the commitment of the entire health team and wide attention on the part of professionals who can promote effective interventions, aiming at postoperative recovery and better adaptation to all the complications of this surgical process.

Finally, from this study, it is emphasized that mental health should be prioritized in nursing care for people who have undergone bariatric surgery, in order to contribute to the development of socioemotional skills and the maintenance of healthy habits. It is also considered that the nurse is often the professional closest to the patient throughout the postoperative period, in order to favor the identification of needs in the context of mental health, as well as the guarantee of immediate interventions. It is also evident the need for training the nursing team in this topic.

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