

## **Nutritional profile and its association with perception of body image and use of psychotropic drugs in people with mental disorders: a cross-sectional study**

**Perfil nutricional e sua associação com a percepção da imagem corporal e uso de medicamentos psicotrópicos em pessoas com transtornos mentais: um estudo transversal**

**Perfil nutricional y su asociación con la percepción de la imagen corporal y consumo de medicamentos psicotrópicos en personas con trastornos mentales: un estudio transversal**

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### **Abstract**

This research aimed to evaluate the nutritional status and the perception of the body image of patients with mental disorders, verifying the relationship between the use of psychotropic drugs and the nutritional profile. It is an exploratory cross-sectional study in a psychiatric clinic hospital in Northeast Brazil. The questionnaire developed for this research was used, with validated questions, organized into five sections: (1) sociodemographic data, (2) questions about the disease, (3) body weight history, (4) anthropometric measurements data, and (5) body image. We used the silhouette scale validated in Brazil to assess body image, and for nutritional status, we collected weight, height, and waist circumference in all participants. Descriptive statistical analysis and the chi-square test were used, adopting a significance level of 5%. A total of 120 patients participated in the study: 70.8% were hospitalized, and 63.3% were male. The results showed an association between the use of psychotropic drugs and variables related to weight and the presence of arterial hypertension. After starting treatment, 86.4% of the participants using antidepressants said they had gained weight involuntarily. Body image distortion and great body dissatisfaction were found, especially in the overweight group. It was concluded that the use of psychotropic drugs was related to outcomes related to weight, and the nutritional profile of overweight was associated with dissatisfaction and distortion of body self-image.

**Keywords:** Nutritional status; Mental disorders; Body image; Psychotropic drugs.

### **Resumo**

O objetivo dessa pesquisa foi avaliar o estado nutricional e a percepção da imagem corporal de pacientes com transtornos mentais, verificando a relação entre o uso de psicofármacos e o perfil nutricional. Trata-se de um estudo transversal exploratório realizado em uma clínica-hospital psiquiátrico do Nordeste do Brasil. Foi utilizado um questionário elaborado a partir de questões validadas, organizado em cinco seções: (1) dados sociodemográficos, (2) questões sobre a doença, (3) histórico de peso corporal, (4) dados de medidas antropométricas, e (5) imagem corporal. Para avaliar a imagem corporal, foi utilizada uma escala de silhuetas validada. Para avaliação do estado nutricional, foi coletado o peso, a estatura e a circunferência da cintura dos participantes. Utilizou-se análise estatística descritiva e teste Qui-quadrado, adotando nível de significância de 5%. Participaram do estudo 120 pacientes: 70,8% estavam internados e 63,3% eram do sexo masculino. Os resultados apresentados evidenciaram que houve associação entre uso

de psicofármacos e variáveis relacionadas ao peso e presença de hipertensão arterial. Após o início do tratamento, 86,4% dos participantes em uso de antidepressivos afirmaram ter ganho peso involuntariamente. Distorção da imagem corporal e grande insatisfação corporal foram encontradas, principalmente no grupo que estava acima do peso. Conclui-se que o uso de psicofármacos esteve relacionado a desfechos relacionados ao peso, e o perfil nutricional de excesso de peso associou-se à insatisfação e distorção da autoimagem corporal.

**Palavras-chave:** Estado nutricional; Transtornos mentais; Imagem corporal; Psicotrópicos.

### Resumen

El objetivo de esta investigación fue evaluar las características sociodemográficas y psiquiátricas de salud y tratamiento; evaluar el estado nutricional y la percepción de la imagen corporal en pacientes con trastornos mentales; evaluar la relación entre el uso de psicofármacos y su perfil nutricional. Este es un estudio transversal en una clínica y hospital psiquiátrico, utilizando un cuestionario específico, dividido en 5 partes: (1) datos sociodemográficos, (2) preguntas sobre la enfermedad, (3) antecedentes de peso corporal, (4) de datos antropométricos. mediciones. Para evaluar la imagen corporal se utilizó una escala de silueta. Se utilizó análisis estadístico descriptivo y prueba de chi-cuadrado. El nivel de significación adoptado fue del 5%. Participaron en el estudio un total de 120 pacientes: el 70,8% estaban hospitalizados y el 63,3% eran hombres. Los resultados presentados mostraron que hubo asociación entre el uso de psicofármacos y variables relacionadas con el peso y la presencia de hipertensión arterial. Después de iniciar el tratamiento, el 86,4% de los participantes que usaban antidepressivos dijeron haber ganado peso de forma involuntaria. Se encontró distorsión de la imagen corporal y gran insatisfacción corporal, especialmente en el grupo con sobrepeso. Se concluye que el uso de psicofármacos se relacionó con resultados relacionados con el peso, y el perfil nutricional de sobrepeso se asoció con insatisfacción y distorsión de la autoimagen corporal.

**Palabras clave:** Estados nutricionales; Desordenes mentales; Imagen corporal; Psicotrópicos.

## 1. Introduction

Mental disorders (MD) are highly prevalent in the population and, according to the World Health Organization (WHO), affect 1 in 10 individuals (WHO, 2016). Due to the presence of chronic diseases in greater proportions in this population and risk of suicide, quality of life is worsened and, consequently, the mortality rate is up to 3 times higher when compared to the healthy population (Newcomer & Hennekens, 2015).

The nutritional profile of these patients may be related to these characteristics since there is an interaction of several aspects that result in excessive weight gain in this population. The use of psychotropic drugs, for example, is an issue to be analyzed. In addition to impaired physical health, weight gain may lead to a loss of self-esteem (Biagio et al., 2020), and consequently reduced patients' adherence to treatment to avoid its side effects (Hert et al., 2006; Sord et al., 2015).

The study was conducted in a hospital, located in Sergipe, Brazil, for the treatment of patients with mental disorders, which serves the entire local population. The São Marcello Nursing Home (CRSM) is a reference in mental health in the state of Sergipe for the care of patients with MD. In addition, this fact justifies the relevance of conducting this research, as there is a lack of data and studies aimed at this audience in the Northeast of Brazil and, more specifically, in Sergipe.

Awareness of the risks faced by these patients of developing chronic diseases, studies are needed to demonstrate the reality of the nutritional status in patients with mental disorders and well-known risk factors that influence their physical health. Thus, the aim of this study is to assess the nutritional status and body image perception of patients with mental disorders, as well as determine the relationship between these variables and the use of psychotropic drugs.

## 2. Methodology

The participants were individuals of both sexes over 18 years of age, with a previously established psychiatric diagnosis. The study was carried out in a Psychiatric Clinic and Hospital, in Aracaju, Sergipe, which provides mental health medical services, including inpatient and outpatient consultations. Outpatients were recruited in the waiting room for consultations and those inpatients, were under the guidance from the healthcare professionals responsible of the hospital.

The sampling plan was based on the number of patients treated by Clínica São Marcello in the last five years (2015 to 2019), totaling 6,335 patients, including outpatients and inpatients. Data collection of this study had a programmed time of 45

days, from which it was assumed an average of 211 patients seen in that period. Thus, considering a sampling plan for proportions of a finite population with a 6% margin of error, a population of 211 patients, a 95% confidence interval, the need for 119 patients in the study sample was calculated (Miot, 2011).

The study included individuals who: had a psychiatric diagnosis; were in adulthood; were clinically, psychologically and cognitively capable of answering the questionnaire and signing the Informed Consent Form (ICF) using their own signature. Exclusion criteria: individuals diagnosed with eating disorder and/or having a psychiatric crisis. To determine the subjects' ability to participate in the study, the clinic's health workers provided support by indicating which ones were clinically and cognitively able to answer the questionnaire.

A questionnaire was developed specifically for this research, based on questions from previous studies on the topic. The data in use corresponded to the questions of the following sections: (1) sociodemographic information, (2) questions about the disease, (3) body weight history, (4) anthropometric data, and (5) body image. Body image was assessed with a scale of silhouettes, in which nine female and nine male bodies are arranged. The scale is subdivided into classifications that correspond to the nutritional states referring to women's and men's body mass index (BMI), ranging from low weight to obesity (Scagliusi et al., 2006).

According to the scale being used, patients were asked questions about (1) self - image (perception of their own body), (2) the body that they considered to be healthy; and (3) the body that they would like to have. To establish 'satisfaction' or 'dissatisfaction', patients were considered to be satisfied when they selected bodies within the same BMI for self-image and for the body that they would like to have. Those patients who indicated bodies with different BMI for these two questions were classified as dissatisfied (Santos et al., 2020).

For the assessment of nutritional status, body weight (kg), height (m) and waist circumference (WC) (cm) were measured using a digital scale, a stadiometer and an inelastic measuring tape. BMI and cardiovascular risk associated with WC (Alberti et al., 2009) were calculated.

Categorical variables were described on the basis of absolute frequency and relative percentage. Continuous variables were described using means and standard deviations. The hypothesis of independence between categorical variables was tested using Pearson's chi-square tests with Monte Carlo and Fisher's exact simulations. The level of significance set at 5% and the software R Core Team 2021 was used.

The study was approved by the Research Ethics Committee of the Federal University of Sergipe (UFS), under Opinion no. 3,555,747. Participants were informed about the research, objectives and procedures, risks and benefits, and only participated after signing the consent.

### **3. Results and Discussion**

A total of 120 individuals participated in this study, with an average age of 42.6 ( $\pm 13.2$ ) years, and 63.3% of them were males. Among the patients, 85 (70.8%) had been hospitalized for an average of 56 ( $\pm 84$ ) days. Table 1 shows the sociodemographic and psychiatric characteristics of the sample participants.

Regarding gender, the present study is similar to one from Ethiopia (Asaye et al., 2018); however, the other reviewed studies reported a higher prevalence of women in samples (Gomes et al., 2019; Ramírez et al., 2017; Santos & Siqueira, 2010) except when there were patients who required hospitalization (Vieira et al., 2018).

Even with a higher frequency of hospitalized patients in the sample, hospitalization is distinguished from the institutionalization pattern; in the latter, the permanence profile is more closely linked to housing, whereas, the goal of hospitalization is to help patients to recover from an acute disease and return to social life (Manfredi et al., 2019). The majority of patients (55.8%) reported living with close relatives while 26.7%, with their spouses and/or children. Social support is

essential to engage the patient in psychiatric treatment (Fernandes et al., 2018) and maintain greater adherence to treatment (Aylaz & Kılınc, 2017).

Still in this context, the hospital has a patio and places for outdoor activities; this way, inpatients are encouraged to practice physical activity, with the help of a physical educator, and they have autonomy to exercise their daily and personal activities in a patio and on an outdoor sports court built for patients. The participants demonstrated to be active individuals (58.2%) and to practice physical activity at least three times a week.

Previous research has reported that a low level of education is more closely related to prevalence of MD, in line with the findings of this study, in which 60.7% of the participants studied up to elementary and high school. Moreover, a total of 56.7% of the participants self-reported as brown, a finding similar to that of another study conducted in Brazil, in which non-white individuals were found to have a greater tendency to develop MD (Smolen & Araújo, 2017).

**Table 1** - Description of sociodemographic and treatment-related characteristics.

	<b>Variables</b>	<b>n (%)</b>
Sex	Female	44 (36.7)
	Male	76 (63.3)
Marital status	Single	80 (66.7)
	Married	25 (20.8)
	Widowed	4 (3.3)
	Divorced	11 (9.2)
Education	Illiterate	9 (7.5)
	Literate	13 (10.8)
	Elementary and high school	74 (61.7)
	Higher Education and Graduate Studies	24 (20.0)
Religion	Catholic	58 (48.3)
	Evangelical	36 (30.0)
	Spiritist	5 (4.2)
	None	21 (17.5)
Ethnicity	White	25 (20.8)
	Brown	68 (56.7)
	Black	16 (13.3)
	Yellow	5 (4.2)
	Would rather not say	6 (5.0)
Current working situation	Sick leave	12 (10.0)
	Retired	36 (30.0)
	Unemployed	32 (26.7)
	Student	6 (5.0)
	Employed	34 (28.3)
Who you live with	Close relatives	67 (55.8)
	Spouse and/or children	32 (26.7)
	Alone	21 (17.5)
Psychiatric diagnosis <sup>a</sup>	Schizophrenia	52 (43.3)
	Chemical Dependency	37 (30.8)
	Depression	24 (20.0)
	Anxiety	12 (10.0)
	Bipolarity	11 (9.2)
	Other disorders	11 (9.1)
Time of diagnosis	< 1 year months	19 (15.8)
	> 1 year	11 (9.2)
	> 2 years	14 (11.7)
	> 5 years	76 (63.3)
Form of access to treatment	Private health seervices	76 (63.3)
	Public health services	44 (36.7)
Physical activity	Active	71 (59.2)
	Sedentary	49 (40.8)

Caption: n - absolute frequency. % - percentage relative frequency. <sup>a</sup> More than one response per patient. Source: Authors.

The current working situation of the participants is also worth of notice, since the limitations brought by their clinical condition, together with their level of education, make patients with MD unable to perform work-related activities. Another percentage rate that is worrying is the share of sick leaves and retirements, possibly due to the presence of MD, as found in this study and in others published in the literature (Bastos et al., 2018; Bhui et al., 2012). Only 28.3% of the participants declared to be working and, among these individuals, the high workload and the level of demanding work activities may be associated with the occurrence of MD, although other studies considered only the presence of anxiety and depression in their samples (F. M. Campos et al., 2020; T. C. Campos et al., 2020; Santos & Siqueira, 2010; Giroto et al., 2020).

Marital statuses in which individuals are alone (single, divorced, separated or widowed) also seem to influence the prevalence of MD (Smolen & Araújo, 2017). These results may be due to a possible difficulty in relationships and in participating in social life, because of the psychiatric symptoms involved in the clinical picture and the social stigma attached to the diagnosis of psychiatric diseases. As a consequence, these patients are segregated from society or by their family and relatives, who should actually support them (Kantorski et al., 2013). The increased use of psychotropic drugs in Brazil may be due to the occurrence of social and economic problems (de Oliveira et al., 2021), although difficulty in increasing adherence to drug treatment has been reported (Borba et al., 2018).

Table 2 shows the drug classes used in the psychiatric treatment of patients, associated with health and body weight variables. Mood stabilizers and antipsychotics were more used in men, with a statistically significant difference between groups, while the medication most taken by women was antidepressants, corroborating previous findings from the existing literature (de Oliveira et al., 2021). As side effects, psychotropic drugs can cause weight gain (Gafoor et al., 2018) and, consequently, the development of associated comorbidities (Asaye et al., 2018).

**Table 2** - Variables on weight and use of psychotropic drugs in patients with mental disorders.

Variables		Anxiolytics and hypnotics		Mood stabilizers		Antipsychotics		Antidepressants	
		n (%)	p-value	n (%)	p-value	n (%)	p-value	n (%)	p-value
Sex	Female	25 (41)	0.348 <sup>F</sup>	11 (19.6)	<0.001 <sup>F</sup>	31 (29.5)	<0.001 <sup>F</sup>	16 (72.7)	<0.001 <sup>F</sup>
	Male	36 (59)		45 (80.4)		74 (70.5)		6 (27.3)	
Type of treatment	Outpatient	47 (77)	0.161 <sup>F</sup>	51 (91.1)	<0.001 <sup>F</sup>	83 (79)	<0.001 <sup>F</sup>	12 (54.5)	0.074 <sup>F</sup>
	Inpatient	14 (23)		5 (8.9)		22 (21)		10 (45.5)	
Other pathologies <sup>a</sup>	Diabetes	9 (14.8)	0.583 <sup>F</sup>	4 (7.1)	0.165 <sup>F</sup>	13 (12.4)	1.000 <sup>F</sup>	2 (9.1)	0.736 <sup>F</sup>
	Hypertension	15 (24.6)	0.026 <sup>F</sup>	7 (12.5)	0.328 <sup>F</sup>	16 (15.2)	0.274 <sup>F</sup>	6 (27.3)	0.201 <sup>F</sup>
	Dyslipidemias	5 (8.2)	0.761 <sup>F</sup>	4 (7.1)	0.540 <sup>F</sup>	11 (10.5)	0.355 <sup>F</sup>	3 (13.6)	0.421 <sup>F</sup>
	Thyroid disorders	3 (4.9)	1.000 <sup>F</sup>	0 (0)	0.060 <sup>F</sup>	3 (2.9)	0.117 <sup>F</sup>	3 (13.6)	0.042 <sup>F</sup>
	No pathologies	39 (63.9)	0.239 <sup>F</sup>	44 (78.6)	0.048 <sup>F</sup>	73 (69.5)	0.775 <sup>F</sup>	12 (54.5)	0.126 <sup>F</sup>
	Other	3 (4.9)	0.619 <sup>F</sup>	1 (1.8)	0.622 <sup>F</sup>	4 (3.8)	1.000 <sup>F</sup>	3 (13.6)	0.019 <sup>F</sup>
Body changes	Gained weight intentionally	2 (3.3)	0.485 <sup>Q</sup>	3 (5.4)	0.311 <sup>Q</sup>	3 (2.9)	0.822 <sup>Q</sup>	0 (0)	0.036 <sup>Q</sup>
	Gained weight unintentionally	30 (49.2)		31 (55.4)		57 (54.3)		19 (86.4)	
	Lost weight intentionally	0 (0)		1 (1.8)		1 (1)		0 (0)	
	Lost weight unintentionally	8 (13.1)		6 (10.7)		12 (11.4)		1 (4.5)	
	There were no changes	21 (34.4)		15 (26.8)		32 (30.5)		2 (9.1)	
Willingness to change weight	Yes, gain	13 (21.3)	0.033 <sup>Q</sup>	13 (23.2)	0.236 <sup>Q</sup>	25 (23.8)	0.353 <sup>Q</sup>	2 (9.1)	0.015 <sup>Q</sup>
	Yes, lose	24 (39.3)		23 (41.1)		50 (47.6)		17 (77.3)	
	No	24 (39.3)		20 (35.7)		30 (28.6)		3 (13.6)	
Perception of one's own body	Underweight	11 (18)	0.116 <sup>Q</sup>	4 (7.1)	0.119 <sup>Q</sup>	14 (13.3)	0.221 <sup>Q</sup>	3 (13.6)	0.273 <sup>F</sup>
	Adequate weight	28 (45.9)		26 (46.4)		46 (43.8)		6 (27.3)	
	Overweight	22 (36.1)		26 (46.4)		45 (42.9)		13 (59.1)	
Nutritional status	Eutrophy	24 (39.3)	0.266 <sup>Q</sup>	18 (32.1)	0.970 <sup>Q</sup>	33 (31.4)	0.530 <sup>Q</sup>	6 (27.3)	0.581 <sup>Q</sup>
	Overweight	22 (36.1)		22 (39.3)		44 (41.9)		8 (36.4)	
	Obesity	15 (24.6)		16 (28.6)		28 (26.7)		8 (36.4)	
Waist circumference	No risks	33 (54.1)	0.692 <sup>Q</sup>	31 (55.4)	0.580 <sup>Q</sup>	56 (53.3)	0.170 <sup>Q</sup>	8 (36.4)	0.022 <sup>Q</sup>
	Low to moderate risk	11 (18)		10 (17.9)		19 (18.1)		2 (9.1)	
	Substantially higher risk	17 (27.9)		15 (26.8)		30 (28.6)		12 (54.5)	

Caption: N - absolute frequency. % - percentage relative frequency. Q - Chi-square test. F - Fisher's exact test. <sup>a</sup>More than one answer per patient. Source: Authors.

There was a relationship between the use of anxiolytics and hypnotics and the presence of hypertension among the patients in this study. These results demonstrate an evident need to monitor the presence of comorbidities associated with the use of psychotropic medications in psychiatric patients, since they are used with high frequency and their complications generate consequences on their quality of life as well as their life expectancy. Therefore, it should be stressed that the clinical management of these secondary pathologies must be encouraged and closely monitored by the health workers responsible for their respective patients (Sord et al., 2015; Manfredi et al., 2019; Xavier et al., 2014).

Still with regard to antidepressants, anxiolytics and hypnotics, an unintentional increase in body weight was found after the start of psychiatric treatment, although it has been reported in the literature that mood stabilizers and antipsychotics (drugs used in mood disorders and schizophrenia) (Azevedo et al., 2007) are the drugs most frequently associated with weight gain.

Notably, in the present study, antidepressants were more used by women, which may be associated with the outcome of greater weight gain. For this reason, it appears that women with MD are more concerned with health and diet, and follow an aesthetic standard imposed by society, although some antidepressants, such as fluoxetine, are prescribed to induce weight loss (da Silva et al., 2018; Carlini et al., 2009). There is no consensus over the cause/effect in relation to obesity and the development of MD. However, it is known that there is an association, especially with regard to depression and anxiety.

This increase in patients' body weight can lead to deleterious effects on their health and quality of life, as it can be correlated with the reduction in life expectancy and increase of NCDs. No differences were found between nutritional status and classes of psychotropic drugs. However, adherence to treatment may be associated with the undesirable presence of side effects (Xavier et al., 2014), as well as perception of one's health, diagnosis of MD, time of illness and treatment and family participation (Borba et al., 2018).

The accumulation of visceral adiposity may be associated with inadequate nutrition (high energy density, intake of saturated and trans fats) and sedentary habits in the adult population, which may result in a higher prevalence of NCDs (da SILVA et al., 2017). This fact corroborates the findings of this research, since 54.5% of patients using antidepressants had a substantially high risk in relation to WC, a value (49.3%) close to the one found in a previous study with psychiatric patients conducted in Mexico (Ramírez et al., 2017).

The perception of body image was associated with the patients' current nutritional status, perception of a healthy body and a body that individuals would like to have, in addition to satisfaction with one's own body image (Table 3). It was found that eutrophic patients identified themselves, for the most part, with bodies larger than their own, corresponding to 34.2% of overweight silhouettes and 28.9% of obesity. This is a trend found especially in women and is well defined in the literature, and it shows that the association between body image and presence of mental disorders, especially depression, explains the presence of clinical symptoms of low self-esteem in the systematic review of Silva et al (2019).

**Table 3** - Perception of body image and current nutritional status.

	<b>Eutrophy n (%)</b>	<b>Overweigh n (%)</b>	<b>Obesity n (%)</b>	<b>p-value</b>
Body Satisfaction				
Satisfied	17 (43.6)	28 (58.3)	15 (45.5)	0.325
Dissatisfied	22 (56.4)	20 (41.7)	18 (54.4)	
Identification of one's own body				0.574
Low weight	5 (12.8)	6 (12.5)	4 (12.1)	
Eutrophy	10 (25.6)	16 (33.3)	11 (33.3)	
Overweight	13 (33.3)	16 (33.3)	15 (45.5)	
Obesity	11 (28.2)	10 (20.8)	3 (9.1)	
Identifying a healthy body				0.544
Low weight	11 (28.2)	12 (25)	6 (18.2)	
Eutrophy	16 (41.0)	19 (39.6)	18 (54.5)	
Overweight	12 (30.8)	15 (31.3)	9 (27.3)	
Obesity	0 (0)	2 (4.2)	0 (0)	
Identification of the body you would like to have				0.894
Low weight	6 (15.4)	9 (18.8)	8 (24.2)	
Eutrophy	20 (51.3)	20 (41.7)	16 (48.5)	
Overweight	11 (28.2)	17 (35.4)	8 (24.2)	
Obesity	2 (5.1)	2 (4.2)	1 (3)	

Caption: n - absolute frequency. % - percentage relative frequency. Q - Chi-square test. Source: Authors.

It should be noted that only 9.1% of the obese patients identified themselves in silhouettes related to obesity. This finding indicates that they underestimate their own bodies and have a distorted perception of their own body image. This process may be due to the social stigma of obesity, which leads to discrimination and prejudice, reinforcing the body dissatisfaction that exists in this group. Obese individuals have also demonstrated a desire for underweight or eutrophic bodies, confirming the influence of aesthetic body patterns in today's society (Alvarenga et al., 2019; Taroza & Pessa, 2020).

This behavior of body dissatisfaction and desire to change one's weight has a close relationship with unhealthy eating habits and behaviors, and also with the development of MD, such as anxiety, depression and even eating disorders (Silva et al., 2019; Paans et al., 2018). Still with regard to body image, patients' dissatisfaction with the side effect of weight gain may tend to abandon their treatment (Hert et al., 2006). The prevalence of individuals with body dissatisfaction in this study (50%) was even higher than the rate found in a study carried out in Singapore (30.9%), that is, the data indicate a real concern with the appearance of eating disorders and psychological distress of patients (Satghare P et al., 2019).

It is important to assess body image of psychiatric patients, in view of the need to monitor these developments, and identify ways of dealing with dissatisfaction, since there was a limitation in the pursuit of comprehensive studies addressing these analyses as regards mental disorders. There is a limitation to the discussion of available data, since there are few epidemiological studies in Brazil on MD, or most of them refer to specific diseases or specific audiences (Gomes et al., 2019).

As for the nutritional profile of the patients, 32.5% were eutrophic and 67.5% were overweight, corroborating the prevalence of studies about the Brazilian population in general and specific studies for patients with MD (Bocardi et al., 2015; Ferreira et al., 2019; Manfredi et al., 2019). This result demonstrates a high prevalence of overweight in this population, revealing this weight gain as a consequence of lifestyle, health and also possible side effects of the drugs used in this population (Bocardi et al., 2015).

The diet of patients is a key point for the high levels of obesity in this sample. The nutrition control of patients admitted to the clinic is performed by a nutritionist; 6 balanced meals are served daily. Nevertheless, family members are allowed to bring them food, and there is a preference for snacks with high caloric density and low nutritional value, which has a direct impact on the nutritional status of these patients. For outpatients, the availability and accessibility of these foods cannot be controlled and may lead to weight gain more rapidly. Thus, professional nutritionists are extremely necessary in the routine of care for patients with MD, as they can provide nutritional guidance and encourage healthy weight gain.



Obesity is a public health problem and is also one of the risk factors for increased mortality and reduced life expectancy. It is up to health workers to plan effective actions for weight control, such as physical exercise, food handling and management of medications whose side effects include weight gain (Burlandy et al., 2020).

According to the data shown in Table 4, most patients dissatisfied with their body image, expressed their desire to lose weight, 64.4%, with statistically significant differences between the groups. Regarding the opinion about their own body weight, there was a statistical difference; it was found that the majority of patients with adequate weight did not show a desire to change their weight (84.8%). The s patients who self-reported as overweight showed intense desire to lose weight (76.3%).

**Table 4** - Characteristics related to the nutritional profile and willingness to change body weight.

Characteristics related to the nutritional profile		Gain weight n (%)	Lose weight n (%)	No changes n (%)	p-value
<b>Satisfaction with one's own body image</b>	Body dissatisfaction	11 (42.3)	38 (64.4)	11 (31.4)	<b>0.006</b>
	Body satisfaction	15 (57.7)	21 (35.6)	24 (68.6)	
<b>Nutritional status</b>	Eutrophy	7 (26.9)	23 (39.0)	9 (25.7)	0.531
	Overweight	13 (50.0)	20 (33.9)	15 (42.9)	
	Obesity	6 (23.1)	16 (27.1)	11 (31.4)	
<b>Opinion about one's body weight</b>	Underweight	12 (46.2)	22 (3.4)	3 (8.6)	<b>&lt; 0.001</b>
	Adequate weight	9 (34.6)	44 (20.3)	28 (84.8)	
	Overweight	5 (19.2)	54 (76.3)	4 (24.2)	

Caption: n - absolute frequency. % - percentage relative frequency. Q - Chi-square test. Source: Authors.

A cross-sectional design is considered to be a limitation of this study, as a cause/effect relationship between the variables cannot be predicted; however, it has found relevant results that are consistent with findings previously published in the scientific literature.

#### 4. Conclusion

In the present study, the nutritional profile found in the study population was predominantly overweight (overweight and obesity), which was also associated with high prevalence of body dissatisfaction, demonstrating a possible relationship between these factors in patients with mental disorders.

According to waist circumference, the following factors were associated with females: use of antidepressants, presence of hypertension, increased weight after starting treatment, desire to change one's weight and increased risk of developing chronic diseases. There was also a distortion of body image, a desire to get thinner bodies and a relationship between body dissatisfaction, self-image and the desire to change one's body weight.

The study showed relevant results that can collaborate with interventions on eating behavior, with a potential impact on improving the nutritional profile of these patients and, consequently, on health, self-esteem and adherence to treatment. Future research could focus on the development of longitudinal studies to provide insights into how these risk factors develop and how they can be associated, with the aim of improving the nutritional status of patients with mental disorders.

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