Assessment Of The Adhesion To The Treatment And Attainment Of Weight Loss Goals On CESUPA Obesity Ambulatory

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Abstract:

Background*: Obesity is a highly prevalent disease, affecting 20% of the global population, and is a significant public health issue that impacts people of all ages. Therefore, it is essential to investigate and monitor this condition, which is primarily managed through a combination of pharmacological and non-pharmacological treatments, with the latter focusing mainly on lifestyle changes. In this context, the Obesity Outpatient Clinic at the CESUPA Medical Specialties Center (CEMEC) monitors various patients, encouraging habit changes and providing close support from a team consisting of an endocrinologist and a nutritionist to achieve weight reduction.*

Materials and Methods*: Thus, the present study aimed to identify the profile of patients attending the outpatient clinic, assess adherence to both pharmacological and non-pharmacological treatments, and evaluate the achievement of established goals. Therefore, the profile of patients treated at CEMEC is predominantly characterized by women, aged 18-29 years, who presented with grade I obesity at the end of the study.*

Results*: Most of this group experienced symptoms before starting treatment, primarily fatigue; they had associated comorbidities (such as systemic hypertension and anxiety disorder) and were neither smokers nor alcohol users. Regarding adherence to pharmacological treatment, 55% of the participants had been followed for more than 2 years at the outpatient clinic, 90% were using medication for obesity, 96% made lifestyle changes after treatment, and 100% reported an improvement in their quality of life.*

Conclusion *Regarding the weight loss goals at the Obesity Outpatient Clinic of CEMEC-CESUPA, patients started the treatment with an average weight of 89.38±4.58 kg, and by the 5th consultation, the weight had reduced to 84.18±13.89 kg, representing a 6% weight loss.*

Key Word*: Obesity; Treatment adherence; Quality of life.*

I. Introduction

Obesity is a common pathology in both Brazilian and global society, characterized by an excessive accumulation of body fat in relation to lean mass and the patient's weight status[1]. In Brazil, over the past 10 years, the prevalence of obesity has increased from 11% of the population in 2006 to 18.9% in 2016. Furthermore, in 2019, the Brazilian Institute of Geography and Statistics (IBGE) identified that 61.7% of Brazilians were overweight, with 26.8% classified as obese, indicating a rise in the incidence of this disease compared to previous years[2].

According to the National Health Survey (PNS, 2020), more than half of Brazilian adults were overweight (60.3%, representing 96 million people), with the highest prevalence among women (62.6%). In total, obesity affected 25.9% of the population, corresponding to 41.2 million adults[3].

It is worth noting that with modernization and global growth, people have adopted increasingly fast-paced lifestyles. As a result, poor-quality fast food has become a part of many Brazilians' daily routines, mainly due to its convenience. Fast food follows the principle of quick preparation and consumption[4], directly linking its intake to the mass emergence of obesity worldwide[5].

For a long time, obesity was described as a failure of motivation to lose weight. However, it is now understood to be a chronic disease with a multifactorial etiology, including genetic, endocrine, environmental, social, psychological, and psychiatric factors[6].

Additionally, overweight and obese individuals are more predisposed to developing systemic arterial hypertension, cardiovascular diseases, diabetes mellitus, dyslipidemias, gastrointestinal disorders, osteoarthritis, sleep apnea, psychosocial disorders, and other conditions secondary to excess weight, including reduced life expectancy[7].

Studies reveal that even a small weight loss of 5% to 10% of initial body weight can significantly improve the health of obese patients by reducing risk factors for cardiovascular diseases and improving overall quality of life[8].

According to the literature, anthropometric measures are used for diagnosing obesity, with the most common being the Body Mass Index (BMI). BMI is a parameter that utilizes an individual's weight and height to classify their nutritional status[9]. It is calculated as follows: weight (kg) / height² (m). Based on cutoff points, obesity is classified as Grade I for BMI 30-34.9 kg/m², Grade II for BMI 35-39.9 kg/m², and Grade III for BMI $\geq$ 40 kg/m². Educating patients about BMI and its associated risks is strongly recommended by the Health Care Guideline – Prevention and Management of Obesity in Adults, published by the Institute for Clinical Systems Improvement (ICSI)[10].

Maintaining an adequate body weight is essential, as is monitoring anthropometric measurements, which are related to an increased risk of cardiovascular and metabolic diseases[11]. However, challenges such as difficulty adapting to treatment, low education levels, daily struggles faced by families in patient care, and financial difficulties impact how obesity is managed, hindering patient adherence to treatment[12].

There are still limited studies evaluating the effectiveness of obesity programs and the mechanisms that contribute to treatment success or failure[13]. Numerous studies indicate that traditional obesity treatment is ineffective in the long term, as 95% to 98% of patients regain weight within three to four years after interventions, with no significant lifestyle changes[14].

Given these aspects, regular medical appointments promote awareness of self-care in obese individuals, encouraging attitudes, habits, and healthy eating practices. Treatment adherence is established through behavioral changes leading to a new, healthier lifestyle[15]. Furthermore, if weight reduction is not achieved through lifestyle modifications, medications approved by the National Health Surveillance Agency (Anvisa) are recommended[3].

The indications for pharmacological treatment include a BMI $\geq$ 30 kg/m², a BMI $\geq$ 25 kg/m² in patients with comorbidities, failure to lose weight with non-pharmacological treatment, and an elevated waist circumference associated with metabolic syndrome or other comorbidities[16]. The approved medications for obesity treatment include Sibutramine, Orlistat, Liraglutide, and Bupropion combined with Naltrexone, with Semaglutide being the most recently approved drug[17]. Each medication has a specific mechanism of action, contraindications, and side effects.

Sibutramine is one of the most widely used medications in the public healthcare system (SUS) due to its low cost. It works by blocking the reuptake of norepinephrine and serotonin, reducing food intake[18]. However, it is contraindicated in patients with arrhythmias, uncontrolled hypertension, acute myocardial infarction (AMI), and a history of stroke (CVA). Common side effects include dry mouth, palpitations, constipation, and sweating[4].

Bariatric surgery is reserved for patients who have attempted non-pharmacological and pharmacological treatments for at least two years, are between 18 and 65 years old, and have a BMI $\geq$ 40 kg/m² without comorbidities or $\geq$ 35 kg/m² with severe comorbidities[19].

Given the rising obesity rates in Brazil, it is crucial to explore the level of awareness regarding this pathology and the factors that contribute to greater treatment adherence. In light of the importance of raising awareness about this prevalent disease and ensuring appropriate obesity management, this study aimed to assess patient adherence to treatment, their understanding of the disease, and their achievement of weight loss goals throughout their follow-up at the Obesity Clinic of the CESUPA Medical Specialty Center (CEMEC).

II. Material And Methods

Ethical Aspects:

This study was submitted for review by the Research Ethics Committee (CEP) of the University Center of the State of Pará (CESUPA) and was conducted in compliance with the guidelines of Resolution 466/12 of

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the National Health Council[20], the Declaration of Helsinki, and the Nuremberg Code. Data collection began only after approval by the CEP under protocol number 6.266.983.

Sample Design:
This was an exploratory observational study with a cross-sectional, descriptive, and analytical design. Data collection took place at the University Center of the State of Pará (CESUPA) in September 2023, involving patients who attended follow-up appointments at the Obesity Clinic of the CESUPA Medical Specialty Center (CEMEC), located in the municipality of Belém, state of Pará, at Avenida José Malcher, No. 1242, São Brás neighborhood.

Data Collection:
The data were gathered using a questionnaire and a table developed by the authors. Two instruments were used in the study:

Social and Health Questionnaire: A sociodemographic questionnaire aimed at characterizing the sample based on aspects such as gender, age, duration of follow-up, current weight, alcohol consumption, health conditions, use of obesity medication, and perceived improvement in quality of life since the start of treatment.

Comparative Table of Observed Obesity Indices: This included variables such as weight, BMI, and abdominal circumference.
It is important to highlight that no prior consultation records of patients before their admission to the Obesity Clinic at CEMEC-CESUPA were accessed, as these aspects were not part of the inclusion criteria for this study.

Statistical Analysis:
The collected data were organized into spreadsheets using Microsoft Excel 2010. Tables were constructed using tools available in Microsoft Word and Excel. For descriptive statistical analysis, results were presented in tables displaying absolute and relative values of the studied variables.
The normality of the variables was tested using the Kolmogorov-Smirnov test. A bivariate analysis was also performed for initial data exploration and to test differences between quantitative variables using Student's t-test. Comparative analysis of variables was conducted using the Chi-square test. These statistical tests were applied using the Statistical Package for the Social Science (SPSS) software for Mac (version 24), with a significance level of 5% ($p \leq 0.05$).

III. Result
A total of 50 patients from the Obesity Clinic at the CESUPA Medical Specialty Center (CEMEC) were interviewed, with ages ranging from 18 to 69 years and an average age of 41 years. The characteristics of these patients are detailed in Table 1.

Table no 1: Profile Characteristics of Patients Attended at the CEMEC Obesity Clinic. Belém, 2023.

Variables	N	%	P value
Sex			
Female	47	94	<0,001*
Male	03	06	
Age Group			
18 to 29 years old	15	30	
30 to 39 years old	07	14	
40 to 49 years old	12	24	0,285
50 to 59 years old	11	22	
Over 60 years old	05	10	
Symptoms Before Starting Treatment			
Yes	38	76	<0,001*
No	12	24	
Reported Symptoms			
Fatigue	33	66	
Dizziness	08	16	<0,001*
Binge Eating	08	16	
Others	02	04	
Smoker			
Yes	00	00	<0,001
No	50	100	

Alcohol Consumption			
Yes	07	14	<0,001*
No	43	86	
Frequency of Alcohol Consumption			
Weekends and/or holidays	07	14	
4 times a week	0	0	0,083
> More than 4 times a week	0	0	
Comorbidities			
Yes	38	76	<0,001*
No	12	24	
Reported Comorbidities			
Hypertension (HAS)	18	36	
Anxiety Disorder	12	24	
Type 2 Diabetes Mellitus (DM)	06	12	0,285
Dyslipidemia	05	10	
Others	10	20	
Engages in Physical Activity			
Yes	38	76	<0,001*
No	12	24	
Type of Activity			
Walking	21	42	
Weight Training	11	22	0,039*
Others	05	10	
Frequency of Physical Activity			
Once a week	01	02	
Twice a week	10	20	
Three times a week	15	30	0,721
> More than three times a week	12	24	

*t: Student's t-test. p<0.005. Source: Research Protocol, 2023.

The studied sample was predominantly female (94%), with an age range of 18 to 29 years (30%). Most patients reported symptoms before starting treatment (76%), with the most prevalent symptoms being fatigue (66%), dizziness (16%), and binge eating (16%) (Table 1).

None of the evaluated patients were smokers, and the majority did not consume alcohol (86%). Among those who consumed alcohol (14%), it was primarily on weekends and/or holidays (12%). Another important finding in this research is that most participants had comorbidities (76%), with the most common being hypertension (36%), anxiety disorder (24%), type 2 diabetes mellitus (12%), and dyslipidemia (10%).

As shown in Table 1, 76% of the patients engaged in physical activity, with the most common types being walking (42%) and weight training (22%). The frequency of activity varied, with 30% performing it three times a week, 24% more than three times a week, 20% twice a week, and 2% once a week.

It was noted that the participants were at different stages of treatment, with the majority having been in follow-up for up to 1 year (44%), followed by 18% with 3 years of follow-up and 14% with 2 years of follow-up, as shown in Table 2.

A statistically significant difference was observed between patients using obesity medication (90%) and those who made lifestyle changes after starting treatment (96%). The most commonly used medications were Sibutramine (86%), followed by Fluoxetine (24%), Topiramate (16%), and Orlistat (10%).

Furthermore, 96% of the evaluated patients made lifestyle changes, with the most common being a healthy diet (94%), followed by physical activity (76%). Lastly, a highly relevant finding was that 100% of these patients noticed the impact of these lifestyle changes, either in the improvement of the reported symptoms or in their increased energy for daily activities. As a result, they reported an improvement in quality of life after starting obesity treatment, regardless of the amount of weight they had lost.

Table no 2: Characterization of Adherence to Pharmacological and Non-Pharmacological Treatment. Belém, 2023.

Variables	N	%	P value
Follow-up Duration			
Up to 1 year	22	44	
2 years	7	14	
3 years	9	18	0,011*
4 years	5	10	

5 years	5	10	
6 years	2	4	
Uses Medication for Obesity			
Yes	45	90	<0,001*
No	5	10	
Type of Medication			
Sibutramine	43	86	
Fluoxetine	12	24	
Topiramate	8	16	<0,001*
Orlistat	5	10	
Made Lifestyle Changes During Treatment			
Yes	48	96	<0,001*
No	2	4	
Type of Lifestyle Change			
Quit smoking	1	2	
Quit drinking	1	2	
Healthier diet	47	94	0,011*
Started physical activity	38	76	
Noticed Improvement in Quality of Life			
Yes	100	100	<0,001*
No	00	00	

*t: Student's t-test. p<0.005. Source: Research Protocol, 2023.

Regarding the classification of the participants' nutritional status according to BMI, Grade II (35.66±5.05 kg/m²) was the most prevalent at the start of treatment, followed by Grade I (34.00±4.56 kg/m²) after the 5th consultation. However, no statistically significant difference was found (p=0.079) when comparing initial and final BMI. According to the Chi-square Test, there was also no significant correlation between initial and final weight (p = 0.082), as well as between initial and final abdominal circumference (p = 0.075), as described in Table 3. A 6% reduction in body weight was observed on average in the patients' weight losses during the analyzed period (with the smallest weight loss percentage being 1% and the largest 24%).

Table no 3: Comparative Analysis of Variables Related to Obesity Management Goals for Patients Attended at the CEMEC Obesity Clinic. Belém, 2023.

Variables	Mean ± Standard Deviation		χ^2	p-value
	Initial	**Final**		
Weight (kg)	89,38±4,58	84,18±13,89		0,082
Abdominal Circumference (cm)	105,72±11,90	100,42±10,50		0,075
BMI (kg/m²)	35,66±5,05	34,00±4,56		0,079

*χ^2: Chi-square Test. p<0.005. Source: Research Protocol, 2023.

IV. Discussion

The research investigated adherence to pharmacological and non-pharmacological treatment among patients attended by the obesity outpatient clinic at CEMEC-CESUPA. The results showed that 55% of participants had been followed up in the clinic for over two years, 90% used medication for obesity, 96% made lifestyle changes after treatment, and 100% noticed an improvement in quality of life.

According to Burlandy[21], the main barriers in the treatment of obesity are adherence, long-term weight loss maintenance, and weight-related stigma. Swinburn[22] highlight that in traditional obesity control and prevention programs, the focus is on indicators like weight and BMI, recommending an expanded approach to promote behavioral changes by considering environmental factors, body image concerns, and the prevention of eating disorders. Luz[23] also emphasize that treatment should focus on understanding the patient, not just on the pathophysiological mechanisms of obesity.

Adherence to treatment can be measured in several ways, including weight loss and BMI reduction. In this study, adherence was considered achieved by patients who reduced their body weight, with an average weight reduction of 6%.

Florido[24] highlight that adherence is a challenge, and many professionals feel helpless when asked about the reasons for non-adherence. They emphasize the importance of health education strategies to reorient the care model. Moreover, many studies on "adherence" and "non-adherence" do not address the subjectivity of patients and their difficulties, focusing solely on the accuracy with which patients follow health professionals' recommendations.

According to Palmeira[25], the prevention and control of obesity face challenges related to the blame and stigmatization of patients, which diverts attention from the obesogenic causes. Resistance to therapeutic treatment can lead to frustration and helplessness among professionals and multidisciplinary teams[26].

Silva[27] suggest that integrated treatments for obesity, including eating disorders, may improve adherence, as without dietary reeducation, the weight lost tends to be quickly regained. Santos[28] highlight that changes in eating habits not only promote weight loss but also assist in awareness, prevention, acceptance, and maintenance of treatment results.

Generally, individuals with obesity seeking treatment have a history of failed attempts at weight loss, mainly due to the lifestyle changes required[29]. Understanding the motivational factors leading to abandonment of obesity treatment is essential, especially considering the scarcity of studies on the subject[30].

Understanding these factors can help provide more personalized and qualified care, reducing treatment abandonment. It is crucial for patients to recognize the need for changes in their eating habits to adopt healthy dietary strategies and improve their nutritional status[31].

The study by Castilho[32] points out that, in the long term, traditional obesity treatment is ineffective, as between 95% and 98% of patients regain the lost weight after three to four years. Multidisciplinary interventions, including nutritional therapy, physical exercise, psychological treatment, and, when necessary, pharmacological treatment, are considered the gold standard for obesity treatment, aiming for lasting behavioral changes in lifestyle[33].

The profile of patients attending the obesity outpatient clinic at CEMEC was predominantly female, with more women seeking healthcare services, which is consistent with the literature[34]. Moreover, women are more prone to fat accumulation with aging due to differences in body composition[35]. Bresolin[36] observed that most obese patients were aged 50 to 59 years, whereas the predominant age group in this research was 18 to 29 years. Silva[37] emphasize that hormonal and metabolic changes throughout life make women more susceptible to weight gain, and the study by Melo[38] reveals that obesity is more prevalent in the 30-year age group, with percentages similar to those observed at CEMEC.

In summary, adherence to both pharmacological and non-pharmacological treatments was significant among patients, with weight reduction observed, particularly emphasizing behavioral changes and improvements in quality of life. However, the study suggests the need for more effective interventions to combat obesity, considering the context of stigmatization and long-term challenges.

V.   Conclusion

Numerous guidelines indicate that weight loss, even if small, around 5% to 10% of initial body weight, can substantially improve patients' health by reducing risk factors, particularly in relation to cardiovascular diseases. Regarding the weight loss goals at the Obesity Outpatient Clinic of CEMEC-CESUPA, patients started with an average weight of 89.38±4.58 kg, and by the 5th consultation, this reduced to 84.18±13.89 kg. This represents a 6% reduction in the average body weight loss among the patients during the analyzed period.

In view of the aforementioned aspects, the weight reduction highlights progress among these patients and awareness of the recommendations for habit changes. However, as per the percentages mentioned, the weight loss varied between patients, ranging from 1% for the least weight loss to 24% for the greatest percentage of body weight loss.

Regarding the obesity treatment outcomes for these patients in line with the goals established by the literature for therapeutic success, we observed that during the first consultation, the average BMI was 35.66±5.05 kg/m², which classified them as having grade II obesity (BMI ≥ 35-39.9 kg/m²). After medical follow-up and the 5th consultation, the average BMI decreased to 34.00±4.56 kg/m², indicating grade I obesity (BMI 30-34.9 kg/m²).

As for adherence to pharmacological and non-pharmacological treatment, patients used obesity medication, primarily sibutramine, made lifestyle changes, such as incorporating physical activity into their routines, and altered their dietary patterns, adopting healthier eating habits. Additionally, all patients reported improved quality of life, particularly concerning the symptoms they experienced at the start of treatment and the adoption of new rules and behaviors. All of this was made possible by beginning treatment at the Obesity Outpatient Clinic of the CESUPA Medical Specialties Center (CEMEC), with statistically significant differences in these analyses.

Finally, the profile of patients attended by the Obesity Outpatient Clinic at the CESUPA Medical Specialties Center (CEMEC) is characterized by a predominance of women, aged 18-29 years, who had grade I

obesity at the end of the study and follow-up. Moreover, most of these patients had symptoms before starting treatment, with fatigue being the most commonly reported. They also had associated comorbidities (such as hypertension, anxiety disorders, and type 2 diabetes), and none were smokers or alcohol users.

In summary, despite the reduction in initial weight, abdominal circumference, and BMI of the patients attended by the outpatient clinic, the comparative analysis over the studied period showed statistically weak results. This indicates that, despite the improvements and subjective benefits felt by the patients, more assertive strategies are still needed to improve the current obesity situation.

Therefore, the results highlight that the best treatment for obesity remains preventive, and each individual should adopt healthy lifestyle habits and weight reduction as early as possible. Additionally, the number of consultations may be related to a better patient response and adherence to treatment. However, in this study, the number of consultations and the time interval between them were not evaluated, warranting future investigations to analyze these variables and correlate them with their influence on patients' weight loss.

Finally, it is believed that Health Education is a strategy capable of sensitizing patients with obesity and their families, primarily by conveying information about modifiable factors, thereby establishing a positive educational process regarding this highly prevalent disease in global and Brazilian society.

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