

ASSOCIATION BETWEEN AFFECTIVE TEMPERAMENT AND MORBID OBESITY: A CASE CONTROL STUDY

Alexandre Karam J. Mousfi MD MSc¹ – Sivan Mauer MD PhD^{1,2}

1. Assistant Professor, Faculdade Evangélica Mackenzie do Paraná, Curitiba, PR, Brazil

2. Clinical Assistant Professor, Department of Psychiatry, Tufts University Medical School, Boston, MA

ABSTRACT

Introduction: Affective temperaments are part of the spectrum of mood disorders and comprise the concepts of hyperthymia, dysthymia and cyclothymia. Numerous studies have demonstrated a strong relationship between obesity and mood disorders. The objective of the present study was to evaluate the frequency of temperaments in morbidly obese individuals and controls and to establish a possible association between affective temperaments and morbid obesity.

Methods: The study evaluated 106 cases (morbidly obese) and 100 controls (non-obese). To assess affective temperaments, the TEMPS-Rio de Janeiro scale was applied. Depressive symptoms were assessed using the Hamilton Depression Rating Scale, anxiety symptoms using the Hamilton Anxiety Rating Scale and manic symptoms using the Young Mania Rating Scale. For univariate and multivariate analysis, Logistic Regression models were adjusted. **Results:** The presence of at least one affective temperament was 74.5% in the morbidly obese group and 63% in the non-obese group. When comparing the two groups, the statistical analysis of the age subgroup of individuals aged 50 years or over showed an odds ratio of 2.56 (1.07 - 6.09) for hyperthymic temperament. **Conclusions:** In the age group of 50 years or more, cases of morbid obesity are significantly more likely (2.56 times) to occur in individuals with a hyperthymic temperament. Among the three types of temperaments evaluated, only hyperthymia is a risk factor for morbid obesity.

1 INTRODUCTION

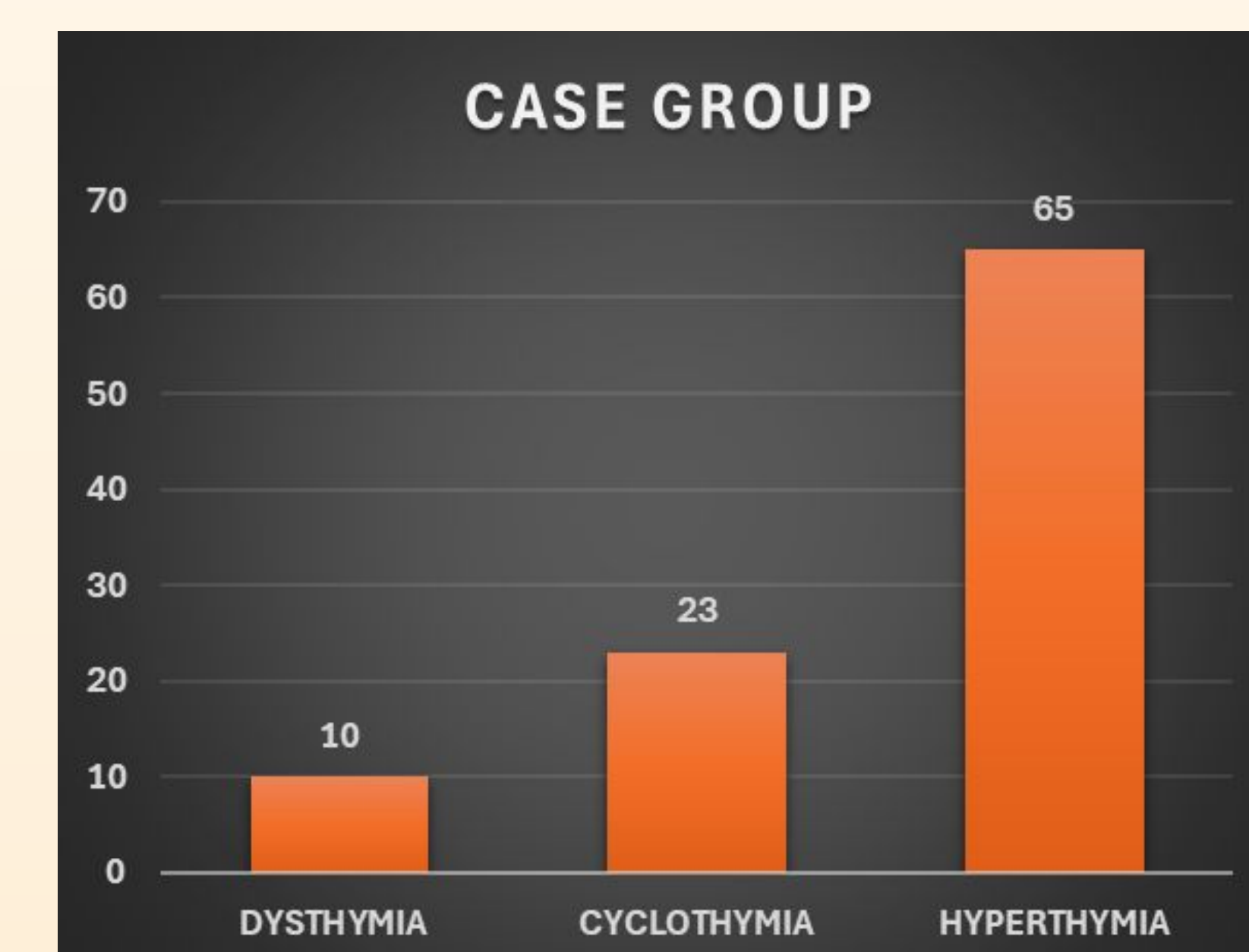
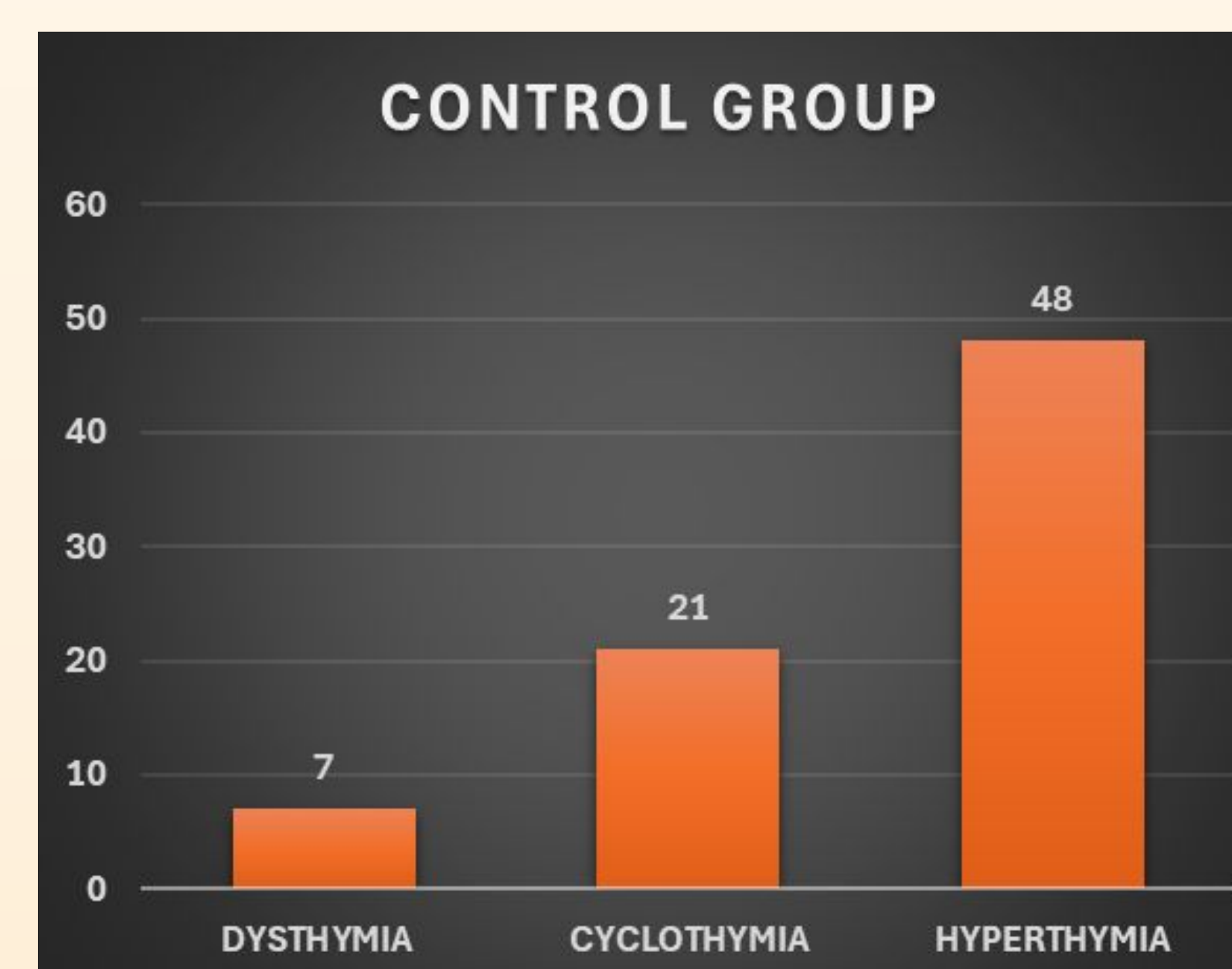
- Affective temperaments are currently understood as part of the spectrum of mood disorders, based on family, genetic and clinical studies.
- Temperaments can also be seen as precursors, risk factors or even mediators of different clinical manifestations of mental illnesses.
- The three main types of affective temperaments are hyperthymia, dysthymia and cyclothymia. Hyperthymia presents as a mild and chronic manic state. Dysthymia consists of mild and persistent depressive symptoms. Cyclothymia is a constant alternation between manic and depressive symptoms, lasting a day or a few days.
- Obesity is a complex and multifactorial disease that negatively interferes with the body's physiological functions and increases the risk of conditions such as diabetes, cardiovascular diseases, premature death, some types of cancer, musculoskeletal and psychiatric diseases.
- Numerous studies have demonstrated a strong relationship between obesity and psychiatric illnesses, especially mood disorders.
- **OBJECTIVE:** Evaluate the frequency of the three main types of affective temperaments in morbidly obese patients and in controls without a diagnosis of obesity and to establish a possible association between affective temperaments and morbid obesity in candidate patients. bariatric surgery.

2 METHODS

- A cross-sectional case-control study.
- The control group consisted of 100 patients without a diagnosis of obesity and the case group comprised 106 patients diagnosed with morbid obesity.
- **INCLUSION CRITERIA:** Controls: 1) BMI less than 30kg/m²; 2) be over 18 years of age; 3) be collaborative with the application of tests; 4) sign the informed consent. Cases: 1) BMI greater than or equal to 40kg/m² or greater than or equal to 35kg/m² with comorbidities; 2) be in pre-operative monitoring for bariatric surgery; 3) be over 18 years of age; (4) be collaborative with the application of tests; 4) sign the informed consent.
- **EXCLUSION CRITERIA:** 1) refusal to collaborate with the proposed tests; 2) functional or sensory impairment that prevented the assessment; 3) being pregnant; 4) having previously undergone bariatric surgery.
- **RATING SCALES:** Brazilian version of the TEMPS-A self-report questionnaire (Temperament Scale of Memphis, Pisa, Paris and San Diego Autoquestionnaire); Hamilton Depression Rating Scale (HAM-D); Hamilton Anxiety Rating Scale (HAM-A); Young Mania Rating Scale (YMRS).
- **STATISTICAL ANALYSIS:** For the univariate and multivariate analysis of factors associated with obesity, Logistic Regression models were adjusted, the estimated measure of association was the odds ratio with 95% confidence intervals. Analysis included the description of the sample according to age, education, weight, height, BMI, gender, marital status, and ethnicity. Current and previous psychiatric characteristics, family history and clinical history were also evaluated.

3 RESULTS

- In the total sample, mood disorders (depression and bipolar disorder) were the most prevalent, present in 19%. Next, we had anxiety, with 13.6%. In the group of patients with morbid obesity, 33% reported having some psychiatric diagnosis. The percentage reporting a diagnosis of mood disorders was 22.6% and anxiety disorders, 10.4%.
- The Case Group presented a greater number of individuals in psychiatric treatment (23.6% x 18%) and psychotherapy (17.9% x 8%) compared to the Control Group. Previous suicide attempts were more frequent in the Control Group (10%) than in the Case Group (5.7%).
- In the group of patients with morbid obesity, 79.2% of individuals had some clinical comorbidity. The most prevalent diseases were hypertension (45.2%), diabetes mellitus (31.3%), dyslipidemia (22.6%) and thyroidopathy (21.7%).
- In the analysis of hyperthymic temperament, the odds ratio was 1.72 (0.99 - 2.99), suggesting that morbidly obese individuals are 72% more likely to have hyperthymia compared to non-obese individuals.
- The statistical analysis of the age group of individuals aged 50 years or over showed an odds ratio of 2.56 (1.07 - 6.09) for hyperthymic temperament.
- The results of the multivariate analysis indicate that, for those aged ≥ 50 years, regardless of gender and marital status, having hyperthymia tends to be associated with obesity (p=0.082).



4 DISCUSSION

- The literature points to association of morbid obesity only with the cyclothymic temperament. Understanding that hyperthymia and cyclothymia are part of the bipolar spectrum, our finding is comparable with the results of a previous study that indicated a prevalence of 89% of bipolar spectrum diagnoses in morbidly obese patients seeking surgical treatment.
- The main interpretation of this result would be that temperaments with manic symptoms, hyperthymia and cyclothymia, present clinical characteristics such as impulsivity, anxiety and addictive behaviors, manifesting themselves in a chronic course and favoring dysfunctional eating behaviors, could contribute to the onset of morbid obesity in the long term.
- The literature shows that the prevalence of obesity increases with age.
- Questioning in the interview the presence of any psychiatric diagnosis throughout life, we found a percentage of 33%. Rates ranged from 36.8 to 72.6% in analyzes carried out in the USA, Europe and Brazil. In turn, the prevalence of psychiatric illnesses in the general population ranges from 4.3 to 29.6%.
- The most prevalent conditions among morbidly obese people were mood disorders (major depression and bipolar disorder), present in 22.6%.
- **Clinical importance:** Evidence suggests that preoperative psychiatric conditions are associated with worse postoperative outcomes, such as insufficient weight loss, surgical complications, and psychosocial problems.

5 CONCLUSIONS

- In the age group of 50 years or more, cases of morbid obesity have a significantly greater chance (2.56 times) of occurring in individuals with a hyperthymic temperament, compared to individuals who do not have this temperament.
- Among the three types of affective temperaments evaluated, only hyperthymia could be a risk factor for morbid obesity.

