



# Binge eating and personality traits: A gender-specific analysis among patients affected by obesity

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## Abstract

**Introduction:** The literature has shown the inconsistency of the specific personality profile of the patients affected by obesity. However, most studies have focused on possible differences in personality traits between subjects with and without Binge Eating Disorder (BED), neglecting possible gender differences. The present work aims to study the relationship between eating behavior and personality traits in a sample of subjects affected by obesity with and without bingeing, considering biological sex.

**Methods:** A total of 110 participants with BMI >35 kg/m<sup>2</sup>, 30 males and 80 females, aged 18-60 years (M=38.70; SD=10.31) completed the Binge Scale Questionnaire (BSQ) for detecting the presence of binge eating (tot >9) and the Big Five Questionnaire (BFQ) for assessing personality traits.

**Results:** Findings showed that no significant differences emerged when compared according to the presence or absence of the eating disorder (BED). In contrast, when gender was taken into consideration, the presence of BED in the male population was found to be associated with the sub-dimension "Impulse Control" ( $r=.263$ ;  $p < 0.05$ ) whereas in the female population it was correlated with the sub-dimension "Emotion Control" ( $r=-.206$ ;  $p < 0.05$ ) In addition, the trait Dynamism also emerged negatively correlated with the presence of binge eating in men and BMI in women.

**Conclusions:** In conclusion, the personality areas that seem to be most involved in subjects with and without BED are ascribable to the sphere of Emotional Stability but suggest some differences between males and females, which deserve clinical attention and further studies.

**Take-home message:** This study highlights the complexity of personality traits and their role in obesity, emphasizing the need for tailored interventions. Understanding gender differences in personality and eating behavior can lead to more effective strategies for addressing obesity's challenges.

**Keywords:** binge; gender; obesity; personality.

## INTRODUCTION

Studies on the personality of patients affected by obesity have often focused on identifying common traits in search of a specific and homogeneous profile characterizing this population, obtaining inconsistent results. For example, Elfhag & Morey [1] found that emotional eating was strongly associated with neuroticism, lower conscientiousness, and low extroversion. In contrast, Magee & Heaven [2] found that obesity was positively correlated with Extroversion, Neuroticism, and Amicability and inversely related to Conscientiousness. To date, there is no empirical evidence that clearly demonstrates the existence of a specific psychological and psychopathological personality configuration among people affected by obesity. Most recent studies have then focused on differences in personality traits between subjects with and without Binge Eating Disorder (BED), finding worse profiles for the latter [3].

Binge-eating disorder (BED), recognized as the most prevalent eating disorder in the United States, impacts around 3% of American adults at some point in their lives. This condition is defined by repeated episodes of binge eating that occur at least once a week for three months. These episodes, often lasting no more than two hours, are marked by psychological distress. During these episodes, individuals with BED typically consume more food than is common for most people in similar situations while feeling a loss of control over their eating [4,5].

BED is strongly associated with obesity [6], overweight, and a higher risk of psychopathology, including mood, anxiety, and sleep problems, than those of similar weight status without disordered eating [7]. BED is marked by emotional, behavioral, and physiological dysregulation about food intake and self-identity [8]. Moreover, most studies on BED and obesity associated with personality traits have been studied almost exclusively on samples of women [9]. Weisberg, DeYoung & Hirsh [10] have shown that personality assessment using the Big Five shows significant gender differences. In fact, in the general population, women report higher Extroversion, Amicability, and Neuroticism scores than men. However, to our knowledge, the relationship between personality, obesity, and BED has never been investigated, taking into account the gender variable.

Therefore, the purpose of the present study is to explore the relationship between eating behavior and personality traits in a sample of obese subjects with and without BED who are candidates for sleeve gastrectomy surgery, taking into account gender.

## METHODS

### *Study design and population*

In this cross-sectional study, the relationship between eating behavior and personality traits was explored in a sample of obese individuals, with a specific focus on the presence or absence of Binge Eating Disorder (BED). The research also considered gender as a relevant variable. The study population consisted of a clinical convenience sample of candidates for sleeve gastrectomy surgery due to obesity-related concerns.

### *Sampling procedure and study instruments*

Participants were selected based on specific criteria, including their BMI, candidacy for sleeve gastrectomy surgery, and willingness to participate in the study. The inclusion criteria required participants to have a BMI greater than 35 kg/m<sup>2</sup>. The Italian version of the Binge Scale Questionnaire (BSQ) [11] was used to identify the presence of binge eating (SE tot >9), and the Italian version of the Big Five Questionnaire (BFQ) [12] was employed to assess personality traits.

### *Statistical analysis and data analysis*

Statistical analysis examined the relationship between eating behavior and personality traits, focusing on the presence or absence of BED and gender differences. Descriptive statistics were calculated for demographic variables, including age and gender distribution. Correlation coefficients were computed to assess the relationship between eating behavior and

personality traits. Specifically, the presence of BED was correlated with sub-dimensions of personality traits as assessed by the BFQ. The statistical significance of these correlations was determined using the p-value ( $p < 0.05$ ).

### ***Ethical aspects***

This study was conducted following ethical principles of Helsinki Declaration. Informed consent was obtained from all participants before they participated in the study. Anonymity, confidentiality and data protection were ensured throughout the research process.

### **RESULTS**

A total of 110 patients with BMI  $>35$  kg/m<sup>2</sup> including 30 males and 80 females, aged 18-60 years (M=38.85; SD=11.21) who had completed the Binge Scale Questionnaire (BSQ) for detecting the presence of binge eating (SE tot  $>9$ ) and the Big Five Questionnaire (BFQ) for assessing personality traits were evaluated. Among them, 10% of men and 18% of women met the criteria for the diagnosis of BED.

Our findings showed no significant differences emerged when compared according to the presence or absence of the eating disorder (BED). In contrast, when gender was taken into account, the presence of BED in the male population was found to be associated with the sub-dimension "Impulse Control" ( $r=.263$ ;  $p < 0.05$ ), whereas in the female population it was correlated with the sub-dimension "Emotion Control" ( $r=-.206$ ;  $p < .05$ ). In addition, the trait "Dynamism" also emerged negatively associated with the presence of binge eating in men and BMI in women.

**Table 1.** Gender-specific correlations between BMI, binge and personality traits.

Big Five Questionnaire	Male (n =30)			Female (n=80)		
	BMI	BSQ	BED	BMI	BSQ	BED
Dynamism	,107	-,274*	-,162	-,213*	-,030	-,049
Dominance	-,031	-,014	,081	,007	-,107	-,005
EXTROVERSION	-,027	-,007	-,118	,060	,126	,059
Cooperativeness	-,057	-,031	,012	,023	,056	,052
Politeness	,206	,160	,241	-,072	-,004	-,003
FRIENDLINESS	,046	,188	,080	,089	,144	,063
Scrupulousness	-,030	-,104	,008	-,039	-,079	-,054
Perseverance	-,097	-,118	-,105	-,104	-,022	-,037
CONSCIENTIOUSNESS	-,090	,008	-,100	,070	,067	,027
Emotion control	,160	,046	,048	-,106	-,314**	-,206*
Impulse control	,289*	,230	,263*	-,024	-,208	-,139
EMOTIONAL STABILITY	,164	,238	,091	,123	-,053	-,006
Openness to culture	-,065	,154	,099	-,109	-,006	,004
Openness to experience	-,139	,014	,042	-,065	,000	-,006
MENTAL OPENNESS	-,119	,174	-,001	,092	,116	,090

\* Note: \*  $P < 0.05$

## DISCUSSION

The purpose of the present work was to investigate personality traits in a sample of obese subjects who are candidates for bariatric surgery. The data confirm that there is no homogeneous profile representative of the subject population, which is consistent with what has been stated by several authors [13].

Notably, this study introduced a novel perspective by examining the role of gender differences in personality traits. It found significant differences in personality traits between obese men and women. Men with obesity exhibited higher body weight and greater concerns related to impulse control in eating behavior. In contrast, women with obesity in the sample reported a higher presence of eating disorders, particularly those related to difficulty in controlling emotions.

These findings are particularly relevant as both sub-dimensions belong to the dimension of Emotional Stability. This dimension had not previously shown significant associations in personality studies of obese individuals when considered as a single group or when compared to normal-weight subjects.

The implications of these results are twofold. From a scientific standpoint, this study contributes to understanding the often-neglected male population affected by obesity. From a clinical perspective, the findings suggest the potential for more tailored and individualized interventions to address cognitive and emotional barriers to weight loss and maintenance [14-19]. Prior research by Dalle Grave et al. [20] has demonstrated the effectiveness of cognitive-behavioral therapy for obese patients (CBT-OB). This study underscores the importance of considering the gender variable and the possibility of integrating standard cognitive therapy with specific techniques, such as Dialectical Behavior Therapy (DBT), to enhance emotion regulation, particularly among female participants [21,22].

The relationship between Binge-eating Disorder (BED) and obesity is a significant area of concern in contemporary medical research. Additionally, BED patients frequently have other medical conditions and psychiatric disorders, making the management of BED and obesity more complex. The presence of these comorbid conditions can also exacerbate the severity of BED and obesity, creating a challenging cycle of health issues. The strong association between BED and obesity calls for an integrated treatment approach. This approach should consider the psychological aspects of BED, the physical health consequences of obesity, and the various risk factors and comorbid conditions associated with both. Comprehensively addressing these interrelated health issues can lead to more effective prevention and intervention strategies, ultimately improving patient outcomes [6].

### ***Study strengths and limitations***

In discussing the findings of this study, it is essential to consider its strengths and limitations. One notable limitation is the relatively small sample size of 110 participants. While the study's insights are valuable, a larger and more diverse sample would have strengthened the generalizability of the findings. Furthermore, the study's cross-sectional design means that we cannot establish causal relationships. Longitudinal research would be necessary to explore how these factors evolve over time. Another potential limitation is the selection bias introduced by recruiting participants primarily from individuals seeking sleeve gastrectomy surgery. These individuals may have distinct motivations and characteristics that differ from the broader population of people affected by obesity.

Additionally, the reliance on self-report measures for assessing personality traits and binge eating behavior opens the door to response bias and social desirability bias, potentially affecting the accuracy of the data.

Lastly, while the study considered gender as a variable, it's worth noting that the sample had a higher proportion of females (around 73%). Achieving a more balanced gender distribution would have provided a more comprehensive understanding of gender differences, according to new research trends.

Turning to the study's strengths, it employed a unique approach by exploring the interplay between personality traits, eating behavior, and obesity, particularly within a population preparing for bariatric surgery. The study's consideration of

gender differences in this context is commendable. Moreover, the findings have practical implications for clinical interventions. Tailoring interventions based on gender-specific personality traits can be a valuable strategy for healthcare professionals working with individuals affected by obesity. Empirically, this study contributes to the field by shedding light on previously unexplored gender differences in personality traits among obese individuals. Lastly, this study bridges the gap between psychological aspects, personality traits, and medical considerations within obesity. It offers a holistic perspective for future research and clinical practice, emphasizing the importance of considering psychological and medical facets when addressing obesity-related issues.

## CONCLUSION

The study aimed to investigate personality traits in obese individuals, particularly those undergoing bariatric surgery. The findings supported the notion that no singular, homogeneous personality profile is representative of the entire population of people affected by obesity, aligning with previous research.

In conclusion, while this study has limitations, it undeniably provides valuable insights into the relationship between personality traits, eating behavior, and obesity, specifically emphasizing gender differences. These findings underscore the need for personalized interventions in the treatment of obesity, acknowledging the unique challenges faced by both men and women. Future research endeavors with larger and diverse samples and longitudinal designs can further enrich our understanding of these intricate dynamics.

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