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Research paper

Binge Eating Disorder and Bipolar Spectrum disorders in obesity: Psychopathological and eating behaviors differences according to comorbidities

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ABSTRACT

Background: Obesity is not a mental disorder, yet DSM-5 recognizes a strong association between obesity and psychiatric syndromes. Disorders within the Bipolar Spectrum (BSD) and Binge Eating Disorder (BED) are the most frequent psychiatric disorders among obese patients. The aim of this research is to investigate the psychopathological differences and the distinctive eating behaviors that accompany these comorbidities in obese patients.

Methods: One hundred and nineteen obese patients (40 males; 79 females) underwent psychological evaluation and psychiatric interview, and a dietitian evaluated their eating habits. Patients were divided into four groups according to comorbidities, and comparisons were run accordingly.

Results: Forty-one percent of participants presented BED+BSD comorbidity (Group 1), 21% BED (Group 2) and 8% BSD (Group 3); only 29% obese participants had no comorbidity (Group 4). Female gender was overrepresented among Groups 1 and 2. BSD diagnosis varied according to comorbidities: Type II Bipolar Disorder and Other Specified and Related Bipolar Disorder (OSR BD) were more frequent in Group 1 and Type I Bipolar Disorder in Group 3. A trend of decreasing severity in eating behaviors and psychopathology was evident according to comorbidities (Group 1=Group2 > Group3 > Group 4).

Limitations: Limitations include the small sample size and the cross-sectional design of the study.

Conclusions: BED and BSD are frequent comorbidities in obesity. Type II Bipolar Disorder and OSR BD are more frequent in the group with double comorbidity. The double comorbidity seems associated to more severe eating behaviors and psychopathology. Distinctive pathological eating behaviors could be considered as warning signals, symptomatic of psychiatric comorbidities in Obesity.

1. Introduction

Obesity is endangering the health of a rapidly growing number of citizens in Western society (WHO, 2015). It is not a mental disorder (Marcus and Wildes, 2009), yet DSM-5 (APA, 2013) recognizes a strong association to psychiatric syndromes resulting in high social and economical burden (Amianto et al., 2011a).

Many studies have deepened this relation, from the psychiatric point of view, by taking into consideration the most important psychiatric diagnoses, for example, by investigating the frequency and causes of obesity among patients with Schizophrenia (Chouinard et al., 2016; Godin et al., 2015; Henderson et al., 2015; Manu et al., 2015; Ventriglio et al., 2015), Bipolar Spectrum Disorders (BSD) (McElroy, 2004; McElroy and Keck, 2012; McElroy et al., 2016a, 2016b; Shapiro et al., 2016; Soreca et al., 2008; Wildes et al., 2006) or Depression (Lilenfeld et al., 2008). Even if biological, psychological and social variables influence both the onset and the maintenance of obesity in psychiatric disorders (Wildes et al., 2006; Garner, 1993), most studies conclude that obesity can either be the consequence of the disorder or of treatment, and that it is associated with increased medical morbidity, weaker response to drug therapy and worse general psychiatric outcome (Ramacciotti et al., 2013; Amianto et al., 2015).

Less data exist considering the problem of this comorbidity from the other side of the coin, for example, regarding the frequency of

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Schizophrenia, BSD, Depression or Binge Eating Disorder (BED) among obese patients (Mather et al., 2009; Simon et al., 2006; Vázquez et al., 2008). Regardless of the etiology and the direction of these associations, it is clear that the association between obesity and BED is the most frequent.

BED is the most prevalent Eating Disorder (ED) and has only been classified as a separate diagnostic entity in the DSM-5 in recent years. Although specific psychological, behavioral and metabolic profiles distinguish patients with BED (Aloi et al., 2015; Succurro et al., 2015; Villarejo et al., 2014), it is often unrecognized (Montano et al., 2016) or misdiagnosed, and, thus, mistreated or left untreated, leading to severe dysfunction (Filipova and Stoffel, 2016). By the same token, the high comorbidity with other psychiatric disorders, especially mood disorders (Grilo et al., 2013; McElroy et al., 2011; Winham et al., 2014), make BED a challenging disorder for physicians. Recent research has focused on the comorbidity between BED and BSD. Although investigations of this kind, which explore the overlap of mood symptoms and eating behaviors, are scarce and non-systematic (McElroy et al., 2005), preliminary results indicate a positive correlation between BED and BSD (Amianto et al., 2011b; McElroy et al., 2013).

Given these considerations, the aim of the present research is to look for the psychopathological differences and the distinctive eating behaviors among obese patients with comorbid BED and/or BSD. We hypothesize that although BED and BSD are frequent comorbidities among obese subjects, the double comorbidity determines a greater psychopathological severity and more altered eating patterns than the single comorbidity, and, accordingly, distinctive eating patterns can be identified.

2. Methods

2.1. Participants

From October 2014 until December 2015, all obese outpatients seeking treatment for weight loss at a department of internal medicine in Southern Italy were given the chance to participate in this study. The treatment foresaw the possibility of nutritional re-education, medical treatment and/or bariatric surgery in a stepwise model depending on the severity of obesity and medical and/or psychiatric comorbidities of each patient. One hundred sixty-two obese patients (58 males, 104 females) were consecutively recruited for this cross sectional research. Patients were included according to the following eligibility criteria: aged between 18 and 65 years, with a body mass index (BMI)≥30 kg/m^2 and able to answer a self-reporting questionnaire. Pregnancy or having recently given birth, previous diagnosis of Type 2 Diabetes Mellitus (T2DM) under pharmacological treatment with anti-diabetic drugs, known inflammatory disease, a history of malignant disease or pathologies or drugs able to modify either glucose metabolism were considered exclusion criteria.

Patients were informed about the aim of the study, that participation was voluntary and that the anonymity of their data would be guaranteed. Every participant provided written informed consent to be included in this study before any further steps were taken. The Ethical Committee of the hospital (Azienda Ospedaliera Universitaria Mater Domini) approved the protocol in September 2013. All the investigations were performed in accordance with the principles of the Declaration of Helsinki.

2.2. Measures and procedures

Participants' eating behaviors were assessed in depth during the interview with the dietitian, and they all underwent anthropometrical evaluation, wearing light indoor clothing and no shoes, with standing height measured to the nearest .1 cm and body weight to the nearest .1 kg at 8.00 a.m. Height and weight were measured using a portable stadiometer (Seca 220, GmbH & Co., Hamburg, Germany) and a balance scale (Seca 761, GmbH & Co., Hamburg, Germany); then, their BMI (kg/m^2) was calculated.

Patients answered the following tests and questionnaires:

- The Binge Eating Scale (BES) (Gormally et al., 1982) was used to investigate the presence of bingeing. It is made up of 16 items describing the behavioral manifestations, feelings, and cognitions associated with binge eating. Each item consists of 4 statements that reflect a range of severity from which patients choose the one that best describes their perceptions and feelings about their eating behavior. A total BES score < 17, 17–27 and > 27 respectively indicate unlikely, possible and probable BED. Chronbach's alpha was .810.

- The Mood Disorder Questionnaire (MDQ) (Hirschfeld et al., 2000, 2003) was used to determine the lifetime presence of bipolar features. It consists of 3 questions. The first assesses bipolar symptoms through 13 items with dichotomous answer ('yes' or 'no'); the last 2 questions evaluate family history, past diagnoses, and disease severity. Those who answer 'yes' to at least 7 of the first 13 items in question 1, and indicate that the symptoms clustered in the same time period ('yes' on question 2) and caused moderate or serious problems ('moderate' or 'serious' on question 3) are considered positive to the screen. In present research, those participants who scored≥7 in question 1 but did not answer affirmatively to question 2 and/or did not answer 'moderate' or 'serious' to question 3 were considered MDQ under-threshold. Those who scored < 7 to question 1 were considered negative to the test. Chronbach's alpha of this test was .693.
- The 21-item self-report Beck Depression Inventory (BDI) (Beck et al., 1961) was used to ascertain the severity of depressive symptoms. Scores between 0–9, 10–16, 17–29 and ≥30 indicate minimum, mild, moderate and severe depression respectively. Participants with total BDI score > 16 have been considered as clinically depressed in present study. Cronbach's alpha in present research was .770.
- The State Trait Anxiety Inventory (STAI) (Speilberger et al., 1970) is a self-reported questionnaire consisting of 40 items and has been designed to assess state (STAI-St) and trait (STAI-Tr) anxiety. Cronbach's alpha for our data was .808.
- The Eating Disorder Inventory 2 (EDI-2) (Garner, 1991; Segura-Garcia et al., 2015) is a self-report questionnaire that assesses the psychopathology of EDs using 91 items on a six-point Likert-type scale from 0 'never' to 6 'always' coded with a 3-point system where 'sometimes', 'rarely' and 'never' were assigned zeros while 'often', 'usually', and 'always' were assigned a score of 1, 2 and 3, respectively The questionnaire measures eleven dimensions: Drive for Thinness (DT), Bulimia (B), and Body Dissatisfaction (BD), Perfectionism (P), Interoceptive Awareness (IA), Maturity Fears (MF), Ineffectiveness (I), and Interpersonal Distrust (ID), Asceticism (A), Social insecurity (SI), and Impulse Regulation (IR). Cronbach's alpha in this study was .876.
- The Temperament and Character Inventory Revised (TCI-R) (Cloninger et al., 1993) is based on Cloninger's neurobiological personality theory that assesses personality on four temperamental (Novelty Seeking, NS; Harm Avoidance, HA; Reward Dependence, RD; Persistence, P) and three character dimensions (Self-directedness, SD; Cooperativeness, C; Self-transcendence, ST). It consists of 240-item questionnaire using a five-point Likert scale. Cronbach's alpha for present data resulted .646.

A clinical interview, in accordance with the Structured Clinical Interview for the DSM-IV (SCID-I) (First et al., 2002), was conducted with each patient by a well-trained psychiatrist. The psychiatrist took into consideration the results of BES and MDQ but the final psychiatric