

BRIEF REPORT

Impulse Control Disorders in Obese Patients

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Abstract

The aim of this study was to determine the prevalence of impulse control disorders (ICDs) in morbidly obese individuals. One hundred bariatric surgery candidates were examined using a module of the Structured Clinical Interview for DSM-IV that has been developed for ICDs. Nineteen per cent suffered from at least one current ICD and 27% met the criteria for any lifetime ICD, most frequently skin picking (current, 8%; lifetime, 9%), compulsive buying (current 6%, lifetime 8%), and intermittent explosive disorder (current, 5%; lifetime, 10%). Patients with regular binge eating ($N = 25$) reported significantly more often a history of at least one ICD compared with those without binge eating. The results indicate a high prevalence of ICDs among morbidly obese prebariatric surgery patients that are related to regular binge eating. Copyright © 2012 John Wiley & Sons, Ltd and Eating Disorders Association.

Keywords

obesity; bariatric surgery; impulse control disorders; binge eating

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Introduction

Impulse control disorders (ICDs) are characterized by repetitive urges leading to impulsive behaviours that have no clear rational motivation, cannot be controlled, and are potentially harmful to oneself and/or others (Dilling, Mombour, & Schmidt, 2000). In DSM-IV (American Psychiatric Association, 1994), the following formal ICDs are included: pathological gambling, kleptomania, intermittent explosive disorder, trichotillomania, and pyromania. Furthermore, several behaviours characterized by difficulties resisting temptations to engage in excessively are conceptualized as ICDs not otherwise specified (ICD-NOS), such as compulsive buying, pathological skin picking, nonparaphilic compulsive sexual behaviour, and pathological internet use (Dell'Osso, Altamura, Allen, Marazitti, & Hollander, 2006).

Previous research suggested that ICDs are common in clinical populations, e.g. among depressive inpatients (Lejoyeux, Arbaretaz, McLoughlin, & Adès, 2002), psychiatric inpatients (Grant, Levine, Kim, & Potenza, 2005; Müller et al., 2011b), patients with obsessive compulsive disorder (Grant, Mancebo, Pinto, Eisen, & Rasmussen, 2006), and individuals with eating disorders (Fernandez-Aranda et al., 2006, 2008). Fernandez-Aranda et al. (2006) investigated 227 nonobese women with bulimia nervosa (BN) and observed a lifetime prevalence of ICDs of 23.8%, most commonly compulsive buying (17.6%) and intermittent explosive disorder (13.2%). In addition, Fernandez-Aranda et al. (2008) explored lifetime ICDs in a nonobese sample of 709 women with a history of anorexia nervosa or BN, including subthreshold forms. Lifetime ICDs occurred in 16.6% of their sample, most frequently compulsive buying (11.8%) followed by kleptomania (4.5%), trichotillomania

(1.8%), intermittent explosive disorder (0.6%), pathological gambling (0.3%), and pyromania (0.3%). Of interest, lifetime ICDs were more present in patients with binge eating subtypes.

To our knowledge, no study has addressed the question of how common ICDs are among severely obese individuals and whether they are related to regular binge eating. The present study aimed to explore (1) the prevalence of ICDs in a sample of morbidly obese prebariatric patients, and (2) the relationship between ICDs and regular binge eating in this sample. From the aforementioned research, we assumed that ICDs will be prevalent among obese patients, in particular among bariatric surgery candidates with regular binge eating.

Methods

Procedure

Data for the present study were collected between November 2009 and November 2010 in consecutive morbidly obese patients who were seen for a routine psychosocial prebariatric surgery evaluation. Assessments were conducted up to 6 months prior to the surgery, and all participants were assured that information provided for research would not influence their candidacy for surgery. Inclusion criteria were body mass index (BMI) ≥ 35 kg/m², age 18 years or older, and sufficient German language skills. In total, 118 individuals met the inclusion criteria and were potentially eligible for the study. Of those, 100 individuals agreed to participate in the present study (participation rate, 85%). Ninety-four individuals additionally filled out self-ratings for another investigation, which was described in detail elsewhere (Müller et al., 2011a).

Participation in the study was completely voluntary, and written informed consent was obtained prior to study participation. The protocol was approved by the Institutional Ethics Committee of the University of Erlangen-Nuremberg.

Patients

The sample consisted of 74 female and 26 male patients aged between 18 and 66 years ($M = 37.9$, $SD = 11.1$). The mean BMI was 48.5 kg/m^2 ($SD = 8.3$, range 35.5–73.7). The majority ($N = 84$) suffered from grade 3 obesity ($BMI \geq 40 \text{ kg/m}^2$); only 16 individuals had grade 2 obesity ($BMI: 35\text{--}39.9 \text{ kg/m}^2$). With regard to patients' charts, 44 individuals were diagnosed with a psychiatric disorder, most frequently binge eating disorder (23%) and depression (14%).

Assessment

Impulse control disorders were assessed by using the German version of the ICD module of the Structured Clinical Interview for DSM-IV research version (SCID-ICD) (First, Spitzer, Gibbon, & Williams, 2002). The interview includes sections for formal ICDs (intermittent explosive disorder, pyromania, kleptomania, pathological gambling, trichotillomania) as well as proposed ICD-NOS (compulsive buying, nonparaphilic compulsive sexual behaviour, pathological internet use, pathological skin picking). Assessment was conducted face-to-face by two psychiatrists and one psychologist who were experienced in working with psychiatric patients. All the assessors were trained in a standardized format beginning with observations of life interviews. Afterwards, they conducted a series of interviews, which were reviewed by the last author. During the whole study period, all the assessors were under continuous supervision by the last author.

All participants answered the Eating Disorder Examination-Questionnaire (EDE-Q) (Hilbert & Tuschen-Caffier, 2006). The EDE-Q includes items to identify objective binge eating episodes (i.e. eating an objectively large amount of food with a sense of loss of control) that were used to assess regular binge eating (i.e. ≥ 8 vs < 8 objective binge eating episodes during the past 28 days). As many patients were diagnosed with depression according patients' charts, the German version of the eight-item Patient Health Questionnaire depression scale (PHQ-8) (Kroenke et al., 2009) was administered.

Statistical analysis

Analyses were performed with SPSS 18.0. The numbers and percentages of patients with current and lifetime ICDs were determined. Differences between patients with and without regular binge eating in terms of age, gender, depressive symptoms, and prevalence rates of at least one current/lifetime ICD were analysed using parametric tests for continuous variables and χ^2 tests for gender and prevalence rates. All tests were based on a significance level of 0.05.

Results

Nineteen participants suffered from at least one current ICD, and 27% met the diagnostic criteria for any lifetime ICD (see Table 1). The most frequent ICDs were pathological skin picking, compulsive buying, and intermittent explosive disorder. There were no significant differences in age, BMI, and gender between patients with any current or lifetime ICD and those without (results not

Table 1 Current and lifetime prevalence rates of impulse control disorders among prebariatric surgery patients ($N = 100$)

	Prevalence rates, N (%)	
	Current	Lifetime
Any impulse control disorder	19 (19.0)	27 (27.0)
Intermittent explosive disorder	5 (5.0)	10 (10.0)
Kleptomania	0 (0.0)	3 (3.0)
Pyromania	0 (0.0)	0 (0.0)
Pathological gambling	1 (1.0)	3 (3.0)
Trichotillomania	0 (0.0)	0 (0.0)
Compulsive buying	6 (6.0)	8 (8.0)
Nonparaphilic compulsive sexual behaviour	0 (0.0)	0 (0.0)
Pathological internet use	2 (2.0)	5 (5.0)
Pathological skin picking	8 (8.0)	9 (9.0)

presented but available upon request). With regard to depressive symptoms, patients with any lifetime ICD showed higher PHQ-8 scores ($M_{ICD+} = 12.8$, $SD = 5.2$ and $M_{ICD-} = 7.6$, $SD = 4.9$, $F(1,89) = 19.95$; $p < 0.001$). The comparison of PHQ-8 scores by the presence or absence of any current ICD yielded the same result.

Twenty-five patients reported regular binge eating. As can be seen in Table 2, participants with regular binge eating (BE^+) did not significantly differ from those without binge eating (BE^-) in

Table 2 Comparison of prebariatric surgery patients with (BE^+) and without (BE^-) regular binge eating with regard to age, gender, body mass index, depressive symptoms, and prevalence rates of impulse control disorders

	BE^+ ($N = 25$)	BE^- ($N = 75$)	F
	M (SD)	M (SD)	
Age (years)	36.6 (11.3)	38.3 (11.0)	ns
BMI (kg/m^2)	49.5 (9.9)	48.1 (7.7)	ns
PHQ-8	12.9 (4.8)	7.7 (5.1)	18.7**
	N (%)	N (%)	χ^2
Gender, female	20 (80.0)	54 (72.0)	ns
Lifetime prevalence			
Any ICD	12 (48.0)	15 (20.0)	7.46*
Intermittent explosive disorder	4 (16.0)	6 (8.0)	
Kleptomania	2 (8.0)	1 (1.3)	
Pathological gambling	2 (8.0)	1 (1.3)	
Compulsive buying	3 (12.0)	5 (6.7)	
Pathological internet use	2 (8.0)	3 (4.0)	
Pathological skin picking	4 (16)	5 (6.7)	
Current prevalence			
Any ICD	7 (28.0)	12 (16.0)	1.75
Intermittent explosive disorder	2 (8.0)	3 (4.0)	
Pathological gambling	1 (1.3)	0 (0.0)	
Compulsive buying	2 (8.0)	4 (5.3)	
Pathological internet use	0 (0.0)	2 (2.7)	
Pathological skin picking	3 (12.0)	5 (6.7)	

Note:

BMI = body mass index; PHQ-8 = eight-item Patient Health Questionnaire (depression); ICD = impulse control disorder; ns = no significant difference.

* $p < 0.01$, ** $p < 0.001$.

terms of age, BMI, or gender distribution, but they reported more depressive symptoms and significantly more often a history of any ICD. Similarly, current ICDs were more frequent in the BE⁺ group, although this difference did not reach statistical significance (BE⁺: 28% and BE⁻: 16%, $p = 0.185$).

Discussion

The results were in line with our expectations that ICDs are common among bariatric surgery patients. By comparing the present findings with those obtained from psychiatric inpatients within an earlier study that used the same SCID interview (Müller et al., 2011b), it appears, surprisingly, that prebariatric surgery patients barely differ from psychiatric inpatients in terms of observed ICDs. In this previous study, we found a lifetime ICD rate of 23.5% and a current ICD rate of 18.8% among consecutive psychiatric inpatients, most frequently pathological skin picking (lifetime, 7.3%; current, 6.8%), compulsive buying (lifetime, 6.8%; current, 6.0%), and intermittent explosive disorder (lifetime, 5.6%; current, 3.4%) (Müller et al., 2011b). The high ICD rates in the present obese sample may be partly attributable to psychiatric comorbidity. For the present study, information on depressive symptoms was available, which, indeed, indicates an association between depression and ICDs in our sample.

The most common ICDs in the present obese sample were pathological skin picking, compulsive buying disorder, and intermittent explosive disorder. Although we found somewhat lower prevalence rates with regard to compulsive buying and intermittent explosive disorder, the pattern is similar to the findings of Fernandez-Aranda et al. (2006), who found that these ICDs were the most prevalent ones among women with BN. However, obese patients with regular binge eating reported compulsive buying and intermittent explosive disorder as often as did women with BN in this earlier examination.

Of note, the prevalence of intermittent explosive disorder in our sample did not exceed the interview-based prevalence rates from a representative US sample (Kessler et al., 2006). With regard to compulsive buying disorder, our results also did not sufficiently differ from the population-based German prevalence estimates (Mueller et al., 2010). However, the methodology differed between our study and the representative survey that made use of a seven-item self-rating questionnaire, which may have led to an overestimation of compulsive buying.

The prevalence rates of skin picking in our obese sample are in accordance with previous findings in treatment-seeking patients with obsessive compulsive disorders (Grant et al., 2006) and individuals with trichotillomania (Odlaug & Grant, 2010). In contrast, self-report data from a community-based US study reported a current prevalence rate of 5.4% (Hayes, Storch, & Berlanga, 2009). In addition, representative telephone survey data suggest a lifetime prevalence rate of clinically significant pathological skin

picking (i.e. noticeable skin damage not attributable to another condition and with associated distress or psychosocial impairment) among US adults of only 1.4% (Keuthen, Koran, Aboujaoude, Large, & Serpe, 2010). This may indicate a much higher prevalence of skin picking in clinical samples, including obese bariatric surgery candidates, than in the general population. Compared with the results of an Italian study (Favaro, Ferrara, & Santonastaso, 2007), the prevalence rates found in our sample seem to be rather unremarkable. Favaro et al. (2007) assessed the lifetime prevalence of a large spectrum of self-injurious behaviours including skin picking by using clinical face-to-face interviews. They reported the lifetime prevalence to be 8% in the general population and 21% among women with any eating disorder.

One could argue that in the present investigation, some cases of non-suicidal self-injury (NSSI), in particular scratching without suicidal intent, were diagnosed as pathological skin picking by mistake. Therefore, we double-checked the frequencies of NSSI based on patients' charts. However, NSSI was reported only in four cases. Of those, only two patients reported both pathological skin picking and NSSI, and this is why we assume that the prevalence rates of pathological skin picking found in our prebariatric surgery sample may be rather adequate.

As hypothesized, lifetime ICDs were more prevalent in patients with regular binge eating. Further, the BE⁺ group tended to report more often any ICD at the time of the assessment than the BE⁻ group; again, the most frequently reported were current intermittent explosive disorder, pathological skin picking, and compulsive buying. This outcome may support the assumption regarding the link between high impulsivity, binge eating, and obesity. Furthermore, the BE⁺ group presented with higher depression scores, which is in line with previous research on the link between depression and binge eating in bariatric surgery candidates (e.g. Jones-Corneille et al., 2010; Mühlhans, Horbach, & de Zwaan, 2009).

Our findings are limited by the relatively small sample size and, thus, by the small number of patients with regular binge eating. Another shortcoming concerns the assessment of regular binge eating solely based on questionnaire items. The validity of the EDE-Q in differentiating binge eating from overeating in a morbidly obese population remains questionable. Hence, further research should make use not only of a larger sample but also of a more valid assessment of binge eating.

Given the sample size and lack of structured diagnostic tool for binge eating, our findings must be regarded as preliminary. However, the results indicate a high prevalence of ICDs that are related to regular binge eating among morbidly obese individuals. As the conclusion is restricted to bariatric surgery candidates, further research is needed in order to explore whether or not our findings also apply for obese individuals who are not considering bariatric surgery.

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