

Original Article

Psychiatric Burden in the Morbidly Obese in Multidisciplinary Bariatric Clinic in South India

Stephen Amarjeet Jiwanmall, Dheeraj Kattula, Munaf Babajan Nandyal, Shanmugasundaram Devika¹, Nitin Kapoor^{2,4}, Mini Joseph², Sandhiya Paravathareddy², Sahana Shetty², Thomas V. Paul², Simon Rajaratnam², Nihal Thomas², Vijay Abraham³, Inian Samarasam³

ABSTRACT

Background: Obesity is a global epidemic. Bariatric surgery is being considered as the treatment of choice in morbid obesity. Psychiatric comorbidity affects outcomes in this population. There is a dearth of data on psychiatric profile of the morbidly obese from Indian subcontinent. We studied people with morbid obesity to estimate the psychiatric burden among them and to identify factors associated for developing psychiatric disorders. **Methodology:** This is a cross-sectional study done in a bariatric clinic of a tertiary care teaching hospital in South India. Sixty morbidly obese patients were evaluated by psychiatrists and data from medical records were collected and analyzed. Prevalence of psychiatric disorders was estimated. They were compared with patients without psychiatric disorders using appropriate statistical tests. **Results:** Nearly 33.33% of the patients had a psychiatric disorder. Depression and dysthymia accounted for about half of those cases. The variables that were associated with psychiatric disorders were current suicidal ideation, past self-injurious behavior, perceived poor social support, and past psychiatric history. **Conclusion:** One-third of the morbidly obese patients having psychiatric disorder is suggestive of high comorbidity. Considering this active involvement of psychiatrists in bariatric clinic would be useful.

Key words: Bariatric, comorbidity, obesity, psychiatric

INTRODUCTION


The global burden of obesity is 9.8% (7.7% in males and 11.9% in females). This rapidly increasing problem is projected to affect 1.12 billion individuals worldwide by 2030.^[1] An Indian Council of Medical Research

study conducted in Indian continent indicated that generalized obesity ranged between 11.8% and 31.3% and was significantly higher among the urban residents compared to rural areas.^[2]

This is an open access article distributed under the terms of the Creative Commons Attribution-NonCommercial-ShareAlike 3.0 License, which allows others to remix, tweak, and build upon the work non-commercially, as long as the author is credited and the new creations are licensed under the identical terms.

For reprints contact: reprints@medknow.com

How to cite this article: Jiwanmall SA, Kattula D, Nandyal MB, Devika S, Kapoor N, Joseph M, *et al.* Psychiatric burden in the morbidly obese in multidisciplinary bariatric clinic in South India. Indian J Psychol Med 2018;40:129-33.

Access this article online	
Website: www.ijpm.info	Quick Response Code
DOI: 10.4103/IJPSYM.IJPSYM_187_17	

Departments of Psychiatry, ²Endocrinology, Diabetes and Metabolism and ³Surgery, Christian Medical College, Vellore, Tamil Nadu, ¹Department of Epidemiology, ICMR-National Institute for Research in Environmental Health, Madhya Pradesh, India, ⁴Non Communicable Diseases Unit, Melbourne School of Population and Global Health, University of Melbourne, Melbourne, Australia

Address for correspondence: Dr. Dheeraj Kattula
Department of Psychiatry, Christian Medical College, Vellore - 632 002, Tamil Nadu, India.
E-mail: askdheeraj@gmail.com

It has been recognized that morbidly obese patients are described as depressed, anxious, having poor impulse control, low self-esteem, and impaired quality of life.^[2]

Obesity and metabolic syndrome have been associated with poor outcomes when there is psychiatric comorbidity, especially depression.^[4-8]

Obesity is called morbid when body mass index (BMI) is more than 40 or 35–40 and when significant medical problems are caused or made worse by the body weight.^[2]

Patients with morbid obesity present to bariatric clinics as bariatric surgery is being increasingly considered for those who have failed traditional methods of weight loss more frequently due to its beneficial impact on the improvement in the quality of life.^[3] The National Institutes of Health Consensus Statement (1991) recommended that patients for bariatric surgery should be “selected carefully after evaluation by a multidisciplinary team with medical, surgical, psychiatric, and nutritional expertise.”^[4] Psychiatric evaluation is mainly for diagnosing any existing psychiatric disorder, assessing motivation to change, understanding of the procedure, addressing marital issues, and offering help in managing mood and eating behavior.

We studied people with morbid obesity to estimate the psychiatric burden among them and to identify factors associated for developing psychiatric disorders.

METHODOLOGY

Study site

This was a cross-sectional study of morbidly obese patients being managed in the multidisciplinary Bariatric clinic of Christian Medical College, Vellore, Tamil Nadu, South India. The team included endocrinologists, surgeons, dieticians, and psychiatrists. This hospital is a 2600-bedded tertiary care teaching hospital catering to the medical needs of patients from all over India and its neighboring countries.

Data collection

The psychiatric evaluation was done for all patients attending the bariatric clinic by psychiatric consultants and diagnoses were made using the International Classification of Diseases -10 criteria. The data were collected from the medical records of the clinic.

Statistical analysis

Data were entered in Microsoft Excel and analyzed using SAS software version 9.2 (SAS Institute Inc.,

Cary, North Carolina, USA).^[5] Frequency distribution with percentage was presented for categorical variables and descriptive statistics such as mean with standard deviation were given for continuous variables. The association between psychiatric diagnoses with bariatric surgery and psychiatric-related categorical variables were analyzed using Chi-square test or Fisher’s exact test depending on the distribution of the data. Independent sample *t*-test was used to compare the means of the continuous variables between the psychiatric diagnoses status. For all the analyses, *P* < 0.05 was taken for statistical significance.

RESULTS

The Bariatric clinic had sixty patients from January to December 2016. Prevalence of psychiatric disorder was 33.33% with twenty out of the sixty patients having some psychiatric disorder. Dysthymia and depression account for half of those with psychiatric disorders. Table 1 highlights the prevalence of psychiatric disorders in the sample.

The patients with psychiatric disorders and those without the disorders were compared for differences in sociodemographic, dietary behavioral, psychosocial, and treatment variables. There were no significant differences in behaviors related to dietary behavior and anthropometric characteristics. There were differences in past psychiatric history, self-injurious behavior in the past, current suicidal ideation, and use of psychiatric medications. All of these were associated with patients with psychiatric diagnosis. In the psychiatric medications, use of benzodiazepine and antiepileptic was not associated with psychiatric disorder. These are highlighted in Table 2.

DISCUSSION

Morbid obesity is significantly associated with psychopathology in three different ways.^[6] First, psychopathology may predispose a person to unhealthy lifestyle and can lead to weight gain. Second, living with obesity may lead to psychopathology. Third, both of these may be related to an unknown factor.

Table 1: Distribution of psychiatric disorders

Disorder	n (%)
Dysthymia	7 (35)
Psychotic disorder	3 (15)
Depressive disorder	3 (15)
Substance use disorder	5 (25)
Anxiety disorder	1 (5)
Obsessive-compulsive disorder	1 (5)

Table 2: Distribution of sociodemographic, dietary behavioral, psychosocial, and treatment factors by psychiatric diagnosis

Variable	Sociodemographic and dietary behavioral characteristics		Psychiatric diagnosis	
	Yes (n=20), n (%)	No (n=40), n (%)	χ^2	P
Gender (female)	16 (80.00)	32 (80.00)	-	1.0000 [‡]
Marital status (married)	17 (85.00)	29 (72.50)	-	0.347 [‡]
Trials at weight reduction	9 (45.00)	25 (62.50)	1.6629	0.197
Trials at weight reduction with diet	7 (35.00)	18 (45.00)	0.5486	0.459
Was diet control regular?	2 (10.00)	7 (17.50)	-	0.704 [‡]
Trial to decrease weight by exercise	10 (50.00)	21 (52.50)	0.0334	0.855
Was exercise regular?	0	5 (12.50)	-	0.159 [‡]
Change in dietary style during stress/holidays	14 (70.00)	19 (47.50)	2.7273	0.099
Binge eating	7 (35.00)	6 (15.00)	-	0.101 [‡]
Grazing	10 (50.00)	16 (40.00)	0.5430	0.461
Skipping breakfast	8 (40.00)	13 (32.50)	0.3297	0.566
>50 calories after 7 pm	6 (30.00)	7 (17.50)	-	0.326 [‡]
Age, mean (SD)	39.15 (12.41)	36.60 (11.35)	0.80	0.430*
BMI, mean (SD)	41.18 (6.33)	39.39 (4.51)	1.26	0.212*
Waist circumferences (cm), mean (SD)	121.70 (19.13)	117.40 (14.84)	0.92	0.350*
Hip circumferences (cm), mean (SD)	119.30 (7.17)	123.30 (12.00)	-1.52	0.135 [‡]
Variable	Psychosocial and treatment factors		Psychiatric diagnosis	
	Yes (n=20), n (%)	No (n=40), n (%)	χ^2	P
Current stress	14 (70)	21 (52.5)	1.68	0.195
Adequate social support	13 (65)	38 (95)	-	0.004 [‡]
Current suicidality	5 (25)	0	-	0.003 [‡]
SIB in the past	6 (30)	1 (2.5)	-	0.004 [‡]
Past psychiatric history	13 (65)	0	-	<0.0001 [‡]
Use of psychiatric medicines	11 (55)	0	-	<0.0001 [‡]
Use of antidepressant drugs	8 (40)	0	-	<0.0001 [‡]
Use of antipsychotic drugs	4 (20)	0	-	0.01 [‡]
Use of antiepileptic drugs	1 (5)	0	-	0.3 [‡]
Use of benzodiazepines	1 (5)	0	-	0.3 [‡]

[‡]Fisher's exact test; *Independent sample *t*-test (pooled); [†]Independent sample *t*-test (Satterthwaite). SD – Standard deviation; BMI – Body mass index; SIB – Self-injurious behavior

There is substantial literature showing a relationship between psychiatric comorbidity with morbid obesity.^[7-9] Studies show a prevalence of 40%–50% in morbidly obese patients.^[10,11]

Depressive disorders have been found to be the most common psychiatric comorbidity with anxiety disorders coming second. Even our study demonstrated that depressive disorders were highly prevalent, and if dysthymia is included in depressive disorders, it would comprise more than half of psychiatric burden. The reasons for this relation could be bidirectional. Patients in depressive disorder spectrum have tendency to overeat, eat for relief during periods of stress, and also have a sedentary lifestyle. Many obese patients have a history of parental loss, marital discord, and dissatisfying sexual relationships.^[12] It is also known that people with morbid obesity are discriminated and are denied educational, vocational, and advancement opportunities which lead to low employment and poor social integration. These factors could explain low mood and therefore depressive spectrum disorders.

Some studies report rates of depression to range from 29% to 56%.^[10,13,14] This is higher than the lifetime prevalence of depression in general population which is 17%.^[15]

Morbidly obese patients have dysfunctional eating habits such as binge eating.^[16-19] This study showed that only about a fifth of the patients have binge eating (rapid ingestion of large amounts of food with a feeling of loss of control). In our population, a more common problem was grazing (eating small amounts of food continuously throughout the day). We had twice the number of grazers compared to the binge eaters. The reason for this needs further exploration.

There is no single personality type typical of obesity in comparison to normal population.^[20-22] Impaired self-esteem, low frustration tolerance, interpersonal sensitivity, paranoid ideation, hostility, psychosomatic symptomatology, and marital instability have been reported in obese patients. Though there are studies to show no greater psychopathology in obesity, these

could be suggestive of adaptation to the chronic condition.^[9,18,20,21]

We found majority of our clinic patients to be female. Studies show that women have slightly more psychopathology compared to men.^[9] This too highlights the need for mental health evaluation for these patients.

We also had a high prevalence of a history of psychosis in our participants. It has been established that patients with schizophrenia and other psychotic disorders had a high prevalence of metabolic disturbances,^[22] however it was surprising that these mentally ill patients had reached a bariatric clinic for their weight issue. It is common for people with serious mental health illnesses being weeded out of surgical programs for weight loss. It was reassuring to see mentally ill patients not being discriminated through the referral pathway.

About a fifth of the patients had substance use disorders. It was mostly nicotine and alcohol. No one had used other substances such as cannabis, cocaine, or amphetamines. A French study has shown that about 67% of the obese patients consumed alcohol and that they had significantly higher use of cannabis, cocaine, and amphetamines in comparison to the general population.^[23] The differences can be due to culture.

Smoking is usually associated with lower BMI but is also associated with large waist circumference and abdominal obesity.^[24] Chatkin *et al.* studied morbidly obese smokers and found that male smokers had higher BMI, larger waist circumference, and higher percentage of body fat than nonsmoking morbidly obese males.^[25] It has also been found that smoking is a modifiable preoperative risk factor that significantly increases the postoperative morbidity in bariatric surgery.^[26]

The association between the use of psychiatric drugs and psychiatric disorders is understandable, the treatment being consequence of the problem.

What is striking in our study is that it is not feeling stressed but perceiving poor social support that leads to increased risk of psychiatric morbidity. It is usually assumed that one who can access care in a tertiary care setup should have good social support. Our data also indicates this superficially with 85% having adequate social support. However, it is found that most of the ones with poor social support were the ones with psychological morbidity. It can be speculated that patients with psychiatric disorders have a tendency to appraise their support in a negative way and therefore the result. However, the finding does indicate the need

to use structured instruments in assessments. This study being a chart review was not geared to that level.

CONCLUSION

Almost more than one-third of the morbidly obese had psychiatric disorders. Dysthymia and depression account for more than half of the psychiatric burden. There are no significant differences in sociodemographic, anthropological, and behavioral characteristics between patients with psychiatric disorder and without psychiatric disorder. Perceived poor social support was significantly associated with psychiatric disorders. Considering the high psychiatric comorbidity in morbidly obese patients, active involvement of psychiatrists in bariatric clinic would be useful.

Financial support and sponsorship

Nil.

Conflicts of interest

There are no conflicts of interest.

REFERENCES

1. Kelly T, Yang W, Chen CS, Reynolds K, He J. Global burden of obesity in 2005 and projections to 2030. *Int J Obes (Lond)* 2008;32:1431-7.
2. WHO: Global Database on Body Mass Index. Available from: <http://www.apps.who.int/bmi/>. [Last accessed on 2017 Feb 28].
3. Dong C, Sanchez LE, Price RA. Relationship of obesity to depression: A family-based study. *Int J Obes Relat Metab Disord* 2004;28:790-5.
4. Cummings DE, Cohen RV. Beyond BMI: The need for new guidelines governing the use of bariatric and metabolic surgery. *Lancet Diabetes Endocrinol* 2014;2:175-81.
5. Statistical Analysis Software, SAS/STAT. Available from: http://www.sas.com/en_in/software/analytics/stat.html. [Last accessed on 2017 Mar 06].
6. van Hout GC, van Oudheusden I, van Heck GL. Psychological profile of the morbidly obese. *Obes Surg* 2004;14:579-88.
7. Greenstein RJ, Rabner JG, Taler Y. Bariatric surgery vs. conventional dieting in the morbidly obese. *Obes Surg* 1994;4:16-23.
8. Maddi SR, Khoshaba DM, Persico M, Bleecker F, VanArsdall G. Psychosocial correlates of psychopathology in a national sample of the morbidly obese. *Obes Surg* 1997;7:397-404.
9. Papageorgiou GM, Papakonstantinou A, Mamplekou E, Terzis I, Melissas J. Pre- and postoperative psychological characteristics in morbidly obese patients. *Obes Surg* 2002;12:534-9.
10. Glineski J, Wetzler S, Goodman E. The psychology of gastric bypass surgery. *Obes Surg* 2001;11:581-8.
11. Guisado JA, Vaz FJ. Personality profiles of the morbidly obese after vertical banded gastroplasty. *Obes Surg* 2003;13:394-8.
12. Felitti VJ. Childhood sexual abuse, depression, and family dysfunction in adult obese patients: A case control study. *South Med J* 1993;86:732-6.
13. Hsu LK, Benotti PN, Dwyer J, Roberts SB, Saltzman E,

- Shikora S, *et al.* Nonsurgical factors that influence the outcome of bariatric surgery: A review. *Psychosom Med* 1998;60:338-46.
14. Kolotkin RL, Crosby RD, Pendleton R, Strong M, Gress RE, Adams T. Health-related quality of life in patients seeking gastric bypass surgery vs. non-treatment-seeking controls. *Obes Surg* 2003;13:371-7.
15. Kessler RC, McGonagle KA, Zhao S, Nelson CB, Hughes M, Eshleman S, *et al.* Lifetime and 12-month prevalence of DSM-III-R psychiatric disorders in the United States. Results from the National Comorbidity Survey. *Arch Gen Psychiatry* 1994;51:8-19.
16. Lang T, Hauser R, Buddeberg C, Klaghofer R. Impact of gastric banding on eating behavior and weight. *Obes Surg* 2002;12:100-7.
17. Pekkarinen T, Koskela K, Huikuri K, Mustajoki P. Long-term results of gastroplasty for morbid obesity: Binge-eating as a predictor of poor outcome. *Obes Surg* 1994;4:248-55.
18. Vallis TM, Butler GS, Perey B, Veldhuyzen van Zanten SJ, MacDonald AS, Konok G. The role of psychological functioning in morbid obesity and its treatment with gastroplasty. *Obes Surg* 2001;11:716-25.
19. Fox KM, Taylor SL, Jones JE. Understanding the bariatric surgical patient: A demographic, lifestyle and psychological profile. *Obes Surg* 2000;10:477-81.
20. Stunkard AJ, Wadden TA. Psychological aspects of severe obesity. *Am J Clin Nutr* 1992;55:524S-32S.
21. Pessina A, Andreoli M, Vassallo C. Adaptability and compliance of the obese patient to restrictive gastric surgery in the short term. *Obes Surg* 2001;11:459-63.
22. Saarni SE, Saarni SI, Fogelholm M, Heliövaara M, Perälä J, Suvisaari J, *et al.* Body composition in psychotic disorders: A general population survey. *Psychol Med* 2009;39:801-10.
23. Donnadieu-Rigole H, Olive L, Nalpas B, Duny Y, Nocca D, Perney P. Prevalence of psychoactive substance consumption in people with obesity. *Subst Use Misuse* 2016;51:1649-54.
24. Chiolerio A, Faeh D, Paccaud F, Cornuz J. Consequences of smoking for body weight, body fat distribution, and insulin resistance. *Am J Clin Nutr* 2008;87:801-9.
25. Chatkin R, Chatkin JM, Spanemberg L, Casagrande D, Wagner M, Mottin C. Smoking is associated with more abdominal fat in morbidly obese patients. *PLoS One* 2015;10:e0126146.
26. Haskins IN, Amdur R, Vaziri K. The effect of smoking on bariatric surgical outcomes. *Surg Endosc* 2014;28:3074-80.

Author Help: Reference checking facility

The manuscript system (www.journalonweb.com) allows the authors to check and verify the accuracy and style of references. The tool checks the references with PubMed as per a predefined style. Authors are encouraged to use this facility before submitting articles to the journal.

- The style as well as bibliographic elements should be 100% accurate, to help get the references verified from the system. Even a single spelling error or addition of issue number/month of publication will lead to an error when verifying the reference.
- Example of a correct style
Sheahan P, O'leary G, Lee G, Fitzgibbon J. Cystic cervical metastases: Incidence and diagnosis using fine needle aspiration biopsy. *Otolaryngol Head Neck Surg* 2002;127:294-8.
- Only the references from journals indexed in PubMed will be checked.
- Enter each reference in new line, without a serial number.
- Add up to a maximum of 15 references at a time.
- If the reference is correct for its bibliographic elements and punctuations, it will be shown as CORRECT and a link to the correct article in PubMed will be given.
- If any of the bibliographic elements are missing, incorrect or extra (such as issue number), it will be shown as INCORRECT and link to possible articles in PubMed will be given.