



Baseline psychiatric diagnoses are associated with early readmissions and long hospital length of stay after bariatric surgery

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Abstract

Background The impact of well-controlled or historical psychiatric diagnoses in patients seeking bariatric surgery (BS) on perioperative outcomes is unclear. The primary objective of this study was to determine the impact of psychiatric diagnoses on hospital length of stay (LOS), 30-day readmission rates after BS, and post-operative weight loss outcomes.

Methods Patients who underwent laparoscopic sleeve gastrectomy (LSG) or Roux-en-Y gastric bypass (LRNYGB) from 2014 to 2016 at a single academic institution were retrospectively reviewed. Baseline demographic data and psychiatric history including depression, anxiety, and/or bipolar disorder (DAB) were obtained from the electronic medical record. Hospital LOS, 30-day readmissions, and % excess body weight loss (%EBWL) were obtained on all patients and compared between DAB patients and those without any psychiatric history.

Results During the study period, 354 patients were reviewed, of which 78% were female; 60% underwent LSG. The mean preoperative BMI was 48.9 ± 8.4 m/kg². Major depression was the leading diagnosis (42%), and 13% had both depression and anxiety. The 30-day readmission rate was significantly higher than the control (10.5% vs. 3.7%, $p=0.02$). Mean hospital LOS and the incidence of long hospital LOS (≥ 4 days) was not different between the groups, although within LSG patients, the incidence of long hospital LOS trended towards being higher for DAB patients (9.2% vs. 4%, $p=0.10$). Patients with depression and anxiety had a higher incidence of long LOS (23.4% vs. 9.2%, $p<0.005$). While 6-month %EBWL was significantly lower for DAB patients (41% vs. 46%, $p=0.004$), 1-year weight loss outcomes were not different, even when adjusting for surgical procedure.

Conclusion Patients with baseline or historical DAB had significantly higher early readmission rates, and those with multiple diagnoses were associated with a hospital LOS ≥ 4 days. Future studies should focus on elucidating the impact of psychiatric diagnoses on these quality metrics.

Keywords Mental-health · Bariatric surgery · Early readmission · Length-of-stay

Psychiatric disorders, including mood and anxiety disorders, are highly prevalent in obese patients. In fact, recent studies evaluating this topic have reported that approximately 40% of patients seeking obesity treatment met criteria for at least one psychiatric illness [1–5]. The most common of these disorders include major depression, anxiety, and eating disorders. Because of this, preoperative psychiatric screening is recommended by the American Society for Metabolic and Bariatric Surgery [6] to identify patients who may have

psychosocial risk factors that could impede their success after bariatric surgery, although this process often varies depending on the bariatric center [7]. Patients with uncontrolled psychiatric diagnoses, previously identified disorders with active symptoms, or newly diagnosed disorders that require further therapy, are not considered appropriate bariatric candidates and are screened out. However, patients who have either had a previous history of illness, or an active well-controlled psychiatric diagnosis, are deemed acceptable surgical candidates, and recent studies have found that these patients have comparable weight loss outcomes to those patients without a psychiatric history.

However, in the course of our quarterly program quality review meetings, we noted that many patients who had frequent, early readmissions, and long hospital lengths of stay

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(LOS) had significant psychiatric histories reported in their initial preoperative screening evaluation. Diagnoses that were particularly noteworthy included depression, anxiety, and/or bipolar disorders (DAB). As such, the primary objective of this study was to determine the association between baseline or historical DAB, early readmission rates, and hospital LOS after laparoscopic sleeve gastrectomy (LSG) and Roux-en-Y gastric bypass (LRNYGB). Secondary objectives included comparing post-operative weight loss outcomes for patient with baseline or historical DAB to those without any relevant psychiatric history. We hypothesized that DAB patients would demonstrate higher early readmission rates and longer hospital LOS, while ultimately demonstrating comparable weight loss outcomes after BS.

Methods

Data collection

After obtaining Institutional Review Board approval under a waiver of consent process, a retrospective review was conducted on de-identified patients who underwent primary bariatric surgery, including laparoscopic Roux-en-Y gastric bypass (LRNYGB) or laparoscopic sleeve gastrectomy (LSG), at a single academic institution from July 2014 to June 2016. Inclusion criteria involved all patients for whom psychiatric evaluations were available through the electronic medical record (EMR).

Demographic data included age, gender, race (Caucasian or African American), insurance type (public vs. private), preoperative body mass index (BMI), ideal body weight (IBW) [Men: $50 \text{ kg} + 2.3 \text{ kg} \times (\text{inches over } 5 \text{ feet})$; women: $45.5 \text{ kg} + 2.3 \text{ kg} \times (\text{every inch over } 5 \text{ feet})$]. Psychiatric data were obtained through review of the preoperative psychiatric assessment and included any baseline (historical or active) diagnosis of major depressive disorder, post-partum depression, bipolar disorder, and anxiety disorders (general anxiety disorder, post-traumatic stress disorder, social anxiety disorder).

Evaluation of psychological fitness for bariatric surgery

Psychological evaluations are obtained by integrating both patient report and psychological testing. Specifically, in addition to a patient's past psychiatric history, all surgery candidates are required to undergo a psychiatric evaluation by the staff psychologist. During the evaluation, a thorough mental health history is obtained which includes history of patients' current and past psychiatric conditions, psychosocial and medical histories, mental status examination, and psychological testing, including the Three Factor Eating

Questionnaire, Binge Eating Scale, Shipley-2 for cognitive capacity, the MMPI-2 for personality assessment, and screening for major mood disorders. Based on this, the psychologist will submit a diagnostic impression and make recommendations on the psychological fitness of a candidate seeking bariatric surgery. Recommendations are stratified as (a) patients being fit for surgery, (b) patients requiring additional counseling before pursuing surgery, or (c) patients being denied surgery.

Operative technique

Laparoscopic Roux-en-y gastric bypass was performed a standard fashion, including (a) formation of a jejunojejunostomy 150 cm distal to a biliopancreatic limb, measuring 60–80 cm, using a 60 mm staple-load, (b) creation of a 5 cm gastric pouch, and (c) formation of the gastrojejunostomy using a 25 mm EEA circular stapler. Laparoscopic sleeve gastrectomy involved division of the vessels along the greater curvature 6 cm proximal to the pylorus, and formation of the sleeve over a 36F or 40F Bougie. Post-operatively, standardized post-operative order-sets for pain and nausea control, DVT prophylaxis, Foley catheter management, and diet were used for all patients.

Outcome measures

Primary outcome measures included overall LOS of the index hospitalization as well as $\text{LOS} \geq 4$ days. Additionally, 30-day readmission rates, which included only those emergency department visits that resulted in an admission, were evaluated.

Secondary endpoints included post-surgical percent excess body weight loss (%EBWL) at 2, 6, and 12 months post-operatively. Calculation of excess body weight (EBW) was determined at each time point using the formula: total weight (kg) – ideal body weight (IBW). %EBWL was calculated as follows: $1 - [(\text{EBW at each post-surgical time point}) / (\text{initial EBW})] \times 100$.

Data analysis

All statistical analyses were carried out using Stata 15 (Stat Corp, College Station, TX). Differences in parametric variables between groups were calculated using student's squared or Fisher's Exact test were utilized to compare proportions, as appropriate. A p value < 0.05 was considered statistically significant.

Results

Demographics

A total of 354 patients who underwent bariatric surgery and had a psychiatric evaluation were identified during the study period. Seventy-eight percent were female, and 83% Caucasian. Sixty percent underwent LSG, and the mean preoperative BMI was 48.9 ± 8.4 kg/m². Baseline or historical diagnoses of depression, anxiety, or bipolar disorders was present in 191 patients (54%), and with the most common diagnosis being major depressive disorder (42%), followed by anxiety disorder (22%). Thirteen percent of patients had concurrent baseline diagnoses of depression and anxiety, while only 3% of patients had a

diagnosis of bipolar disorder (Table 1). When comparing the two groups, there was no difference in mean preoperative BMI, insurance status, or surgery type. However, there were significantly more female and Caucasian patients in the DAB group compared to the control group (Table 2).

Thirty-day readmission rates

Overall, 7.2% ($n = 25$) of patients were readmitted within 30-days of their index hospitalization. A significantly higher proportion of DAB patients were readmitted compared to the control group (10.5% vs. 3.7%, $p = 0.02$) (Table 3). Analysis of readmissions by surgery type demonstrated a trend towards an increased early readmission rate for the DAB group for both LRYGB and LSG (11.0% vs. 3.7% and 10.1% vs. 4% for LRYGB and LSG, respectively; $p = 0.11$) (Table 3). Next, readmission rates were analyzed based on each psychiatric diagnosis and compared to the control group (Fig. 1). While all groups demonstrated elevated early readmission rates, patients with anxiety disorder (10.1% vs. 3.7%, $p < 0.05$) or with bipolar disorder (45.5% vs. 3.7%, $p < 0.05$) had significantly increased readmission rates compared to the control (Fig. 1).

Hospital length of stay

Patients with DAB had a slightly higher mean hospital LOS compared to the control group (2.8 ± 3.2 days vs. 2.4 ± 1.5 days, $p = 0.16$), although this was not significant. Even when accounting for surgery type (LRNYGB vs. LSG), there was no statistical difference in LOS between the two groups. However, among patients who underwent LSG, DAB patients did have a slightly higher LOS compared to the control group (2.7 ± 4.1 days vs. 2.1 ± 1.2 days, $p = 0.16$) (Table 4a). Analysis of long hospital LOS (≥ 4 days) demonstrated no difference between the DAB and control groups

Table 1 Overall cohort demographics

	<i>N</i> = 354
Preoperative BMI (kg/m ²): mean \pm SD	48.9 \pm 8.4
Surgery type	
LRYGB [% (<i>n</i>)]	40% (145)
LSG [% (<i>n</i>)]	60% (216)
Gender	
Female [% (<i>n</i>)]	78% (276)
Male [% (<i>n</i>)]	22% (78)
Race	
Caucasian [% (<i>n</i>)]	83% (294)
African American [% (<i>n</i>)]	17% (60)
Prevalence of depression, anxiety, and bipolar disorder [% (<i>n</i>)]	54% (191)
Major depressive disorder [% (<i>n</i>)]	42% (151)
Anxiety disorder [% (<i>n</i>)]	22% (79)
Bipolar disorder [% (<i>n</i>)]	3.1% (11)

Table 2 Comparative demographics

	Control (<i>n</i> = 163)	DAB (<i>n</i> = 191)	<i>p</i> value
Preoperative BMI (kg/m ²): $\bar{X} \pm$ SD	48.3 \pm 7.7	49.4 \pm 9.0	0.40
Gender			< 0.005
Female (%)	69%	86%	
Male (%)	31%	14%	
Insurance status			0.18
Public (%)	13%	19%	
Private (%)	87%	81%	
Surgery type			0.40
LSG (%)	61%	57%	
LRNYGB (%)	39%	43%	
Race			0.006
Caucasian (%)	77%	88%	
African American (%)	23%	12%	

Table 3 30-day readmission rates

	Control (n = 163) (%)	Depression, anxiety, bipolar (n = 191) (%)	p value
Overall	3.7	10.5	0.02
LRNYGB	3.2	11.0	0.11
LSG	4	10.1	0.11

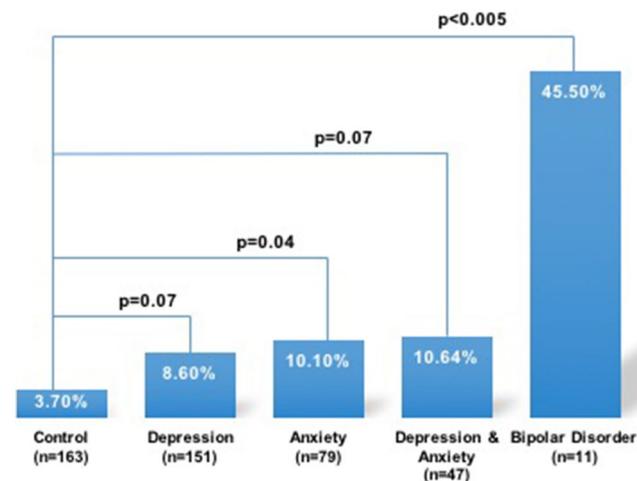


Fig. 1 30-day readmission rate by psychiatric diagnosis. Patients with bipolar disorder or anxiety disorder had significantly higher early readmissions after bariatric surgery compared to patients without baseline major psychiatric diagnoses. Patients with depression or depression and anxiety trended towards higher early readmissions

within the overall cohort. However, when stratified by surgery type, a higher proportion of DAB patients trended towards a long hospital LOS compared to the control group among those patients that underwent a LSG (9.25% vs. 4%, $p = 0.100$) (Table 4b).

Stratifying long LOS by psychiatric diagnosis demonstrated that patients with both depression and anxiety disorders had a significantly higher prevalence of long hospital LOS (23.4% vs. 9.2%, $p < 0.05$), while those with with bipolar disorder trending towards a higher percentage of long hospital LOS (18.2% vs. 9.2%, $p = 0.10$) (Fig. 2).

Weight loss outcomes after bariatric surgery

The mean %EBWL was not statistically different between the DAB and control groups at 2 months after bariatric surgery (29% ± 21% vs. 27% ± 22%, $p = 0.45$). At six months, DAB patients had significantly lower %EBWL compared to the control group (41% ± 13% vs. 46% ± 18%, $p = 0.004$). One year after BS, however, there was no statistical difference between the two groups (Table 5). Similar trends were noted when stratifying by surgery

Table 4 (a) Hospital LOS (days). (b) Long hospital LOS (≥ 4 days)

	Control (n = 163)	DAB (n = 191)	p value
(a)			
Overall: \bar{X} (SD)	2.4 (1.5)	2.8 (3.2)	0.16
LRNYGB: \bar{X} (SD)	2.9 (1.7)	2.9 (1.0)	0.94
LSG: \bar{X} (SD)	2.1 (1.2)	2.7 (4.1)	0.16
(b)			
Overall	9.2%	13.6%	0.19
LRNYGB	17.4%	19.5%	0.83
LSG	4%	9.2%	0.1

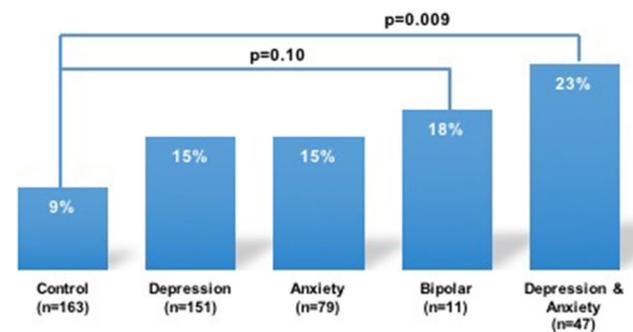


Fig. 2 Hospital length of stay ≥ 4 days by psychiatric diagnosis. Patients with depression and anxiety disorders demonstrated significantly higher incidence of long hospitalizations compared to those without baseline major psychiatric diagnoses. Bipolar patients had twice the incidence of long hospitalization after bariatric surgery, although this only trended towards significance

type, with the only exception being that at 6 months after LRNYGB, DAB patients only trend towards a lower %EBWL (Table 5).

Discussion

Psychiatric illnesses are highly prevalent in the bariatric population. Although studies have shown that bariatric candidates with a psychiatric history have comparable weight loss outcomes [8–10], the impact of well-controlled psychiatric disorders on perioperative outcomes after bariatric surgery remains unclear. This retrospective review of a single institutional experience demonstrated that patients with a history or baseline diagnosis of DAB had increased 30-day readmission rates, compared to patients without these diagnoses, which was significant for those with either bipolar disorder or anxiety disorders. Further, while overall LOS and long LOS (≥ 4 days) was not significantly different for DAB patients, even when stratifying by surgical type, incidence of long LOS was more than double in the DAB group who underwent LSG

Table 5 %EBWL

	Control	DAB	<i>p</i> value
2 months post-bariatric surgery			
Overall: \bar{X} (SD)	28.6 (20.8) (<i>n</i> = 150)	26.8 (21.8) (<i>n</i> = 180)	0.45
LRNYGB: \bar{X} (SD)	29.4 (22.2) (<i>n</i> = 57)	27.8 (26.5) (<i>n</i> = 78)	0.71
LSG: \bar{X} (SD)	28.1 (20) (<i>n</i> = 93)	26.1 (17.5) (<i>n</i> = 102)	0.45
6 months post-bariatric surgery			
Overall: \bar{X} (SD)	46.1 (17.6) (<i>n</i> = 119)	40.7 (12.8) (<i>n</i> = 149)	0.004
LRNYGB: \bar{X} (SD)	48.3 (12.6) (<i>n</i> = 45)	44.6 (12.4) (<i>n</i> = 72)	0.13
LSG: \bar{X} (SD)	44.7 (20) (<i>n</i> = 74)	37.0 (12.2) (<i>n</i> = 77)	0.004
12 months post-bariatric surgery			
Overall: \bar{X} (SD)	52.9 (16.7) (<i>n</i> = 84)	51.5 (23.7) (<i>n</i> = 100)	0.63
LRNYGB: \bar{X} (SD)	53.8 (20.5) (<i>n</i> = 32)	53.2 (19) (<i>n</i> = 41)	0.93
LSG: \bar{X} (SD)	52.4 (14.1) (<i>n</i> = 52)	50.2 (26.4) (<i>n</i> = 59)	0.58

(9.2% vs. 4%, $p = 0.10$). Interestingly, subgroup analysis revealed that patients with multiple psychiatric diagnoses (depression and anxiety disorders) had a significantly elevated incidence of long LOS (23% vs. 9%, $p < 0.005$). Finally, while DAB patients had significantly lower 6-month %EBWL, 1-year weight loss outcomes were comparable between both groups, even when adjusting for surgical procedure.

Only a small number of studies exist that report on the impact of psychiatric diagnoses on hospital LOS and early readmissions after bariatric surgery [5, 7, 11]. One such study by Litz et al. utilized the Pennsylvania Healthcare Cost Containment Council Data to review early readmission rates for over 19,000 patients who underwent bariatric surgery from 2011 to 2014. Interestingly, most of their patients underwent Roux-en Y gastric bypass, unlike our cohort where sleeve gastrectomy was the most common surgical procedure. As with this study, they reported that patients with any psychiatric disorder had a significantly elevated risk of 30-day readmission after BS [11], and subgroup analysis found that patients with bipolar/depression and those with minor affective disorder had a significantly elevated risk of early readmissions. Interestingly, while our study demonstrated that patients with anxiety disorders had significantly elevated 30-day readmission after BS, this finding was not supported by Litz et al. on multivariate logistic regression.

Although we hypothesized LOS would be significantly longer for DAB patients, this was not borne out in the data. Litz et al. echo this result, showing that LOS was not statistically elevated for patients with a psychiatric history [11]. In order to evaluate this more closely, we utilized the metric of long LOS (≥ 4 days), as this has been shown to be an independent risk factor for early readmission after BS [12–14]. While no difference was found in long LOS overall, the incidence of long LOS was more than double that of the control group (9.25% vs. 4%, $p = 0.10$) for LSG patients. Given the trend towards significance, this result may have suffered from a small sample size. Finally, when looking at our cohort overall, patients with multiple psychiatric diagnoses and bipolar disorder were found either to trend or to have significantly elevated incidences of long LOS compared to the control group, further supporting the idea of an association between psychiatric history and prolonged hospitalization.

When examining weight loss outcomes, despite demonstrating a significant drop in 6 month %EBWL, DAB patients had comparable results 1 year after BS. Although earlier literature on this subject has suggested patients with psychiatric histories are associated with decreased post-operative weight loss outcomes [2], our weight loss outcome data are in agreement with recent literature on the subject [3, 5, 7, 9, 10]. A large multicenter study which reviewed outcomes after bariatric surgery for over 8000 patients found no association between psychiatric disorders and lower weight loss outcomes after BS. In fact, even patients with severe psychiatric illnesses, such as bipolar disorders and schizophrenia, have been reported to have comparable post-surgical weight loss [9].

Bariatric candidates presenting with obesity-related comorbidities, such as type 2 diabetes, obstructive sleep apnea, and cardiovascular disease, that are associated with negative post-operative outcomes receive preoperative optimization in order to minimize their surgical risk. For example, patients with type 2 diabetes undergo intensive medical therapy to improve their hemoglobin A1C prior to surgery and are followed closely post-operatively to manage medication changes as needed. For patients with mental illnesses who are deemed appropriate bariatric candidates, there is no analogous support mechanism. In fact, even the methodology utilized for preoperatively screening patients varies significantly by bariatric center, and psychiatrists may report different behavioral and psychiatric metrics altogether [15]. The association between psychiatric history, early readmissions, and longer LOS should function as the impetus to regard this comorbidity as clinically relevant. Given the negative stigma that mental illness still confers on patients, it is important to guard against the conclusion that these patients do not benefit from bariatric surgery; in fact, the data suggest that psychiatric diagnoses

are not associated with any demonstrable long-term weight loss differences. This study, along with others cited, supports the conclusion that mental illnesses should be triaged with the same diligence as any other comorbidity. As such, it is imperative that bariatric centers seek to elucidate the impact of psychiatric histories on early readmission and longer hospitalization in order to develop a mechanism to deliver appropriate mental health support to address this deficiency.

This study is limited by its retrospective nature. In addition, when categorizing by psychiatric diagnosis, a number of the cohorts had small patient numbers which likely impacted our results. While some of the trends reported in this study may not have reached statistical significance, a number of the results show markedly increased incidences that likely would reach significance in more appropriately powered studies. In addition, we also recognize that patients with current psychiatric diagnoses are different from patients who carry historical diagnoses, and that this difference may confer differing risks on the outcomes reported in this study. For the purposes of this study, however, we were not able to delineate between the two. Future studies will look at investigating these differences.

Conclusion

Our study demonstrates that patients with either a baseline or historical diagnosis of depression, anxiety, or bipolar disorders have significantly increased 30-day readmission rates after bariatric surgery. In addition, patients with multiple psychiatric diagnoses were significantly associated with a hospital LOS \geq 4 days. Finally, while DAB patients exhibited a lower 6-month weight loss outcome, there was no difference in weight loss 1 year after surgery. In conclusion, these data suggest that while patients with baseline or historical psychiatric diagnoses have comparable weight loss outcomes after bariatric surgery, they likely represent a vulnerable patient population that requires more perioperative support to reduce long hospital lengths of stay and early readmissions.

Compliance with ethical standards

Disclosures Dr. Anahita Jalilvand, Dr. Bradley Needleman, Dr. Sabrena Noria, Jane Dewire, and Andrew Detty have no conflicts of interest or financial ties to disclose.

References

1. Lin HY1, Huang CK, Tai CM, Lin HY, Kao YH, Tsai CC, Hsuan CF, Lee SL, Chi SC, Yen YC (2013) Psychiatric disorders of patients seeking obesity treatment. *BMC Psychiatry* 13(1):1
2. Kalarchian MA1, Marcus MD, Levine MD, Soulakova JN, Courcoulas AP, Wisinski MS (2008) Relationship of psychiatric disorders to 6-month outcomes after gastric bypass. *Surg Obes Relat Dis* 4:533–541
3. Kouidrat Y, Amad A, Stubbs B, Moore S, Gaughran F (2017) Surgical management of obesity among people with schizophrenia and bipolar disorder: a systematic review of outcomes and recommendations. *Obes Surg* 27(7):1889–1895
4. Duarte-Guerra LS, Coêlho BM, Santo MA, Lotufo-Neto F, Wang YP (2017) Morbidity persistence and comorbidity of mood, anxiety, and eating disorders in preoperative bariatric patients. *Psychiatry Res* 257:1–6
5. Fisher D, Coleman KJ, Arterburn DE, Fischer H, Yamamoto A, Young DR, Sherwood NE, Trinacty CM, Lewis KH (2017) Mental illness in bariatric surgery: a cohort study from the PORTAL network. *Obesity* 25(5):850–856
6. Sogg S, Lauretti J, West-Smith L (2016) Recommendations for the presurgical psychosocial evaluation of bariatric surgery patients: ASMBS guidelines/statements. *Surg Obes Relat Dis* 12:731–749
7. Heinberg LJ, Marek R, Haskins IN, Bucak E, Nor Hanipah Z, Brethauer S (2017) 30-day readmission Following weight loss Surgery: can psychological risk factors predict nonspecific indications for readmission? *Surg Obes Relat Dis* 13:1376–1383
8. Dawes AJ, Maggard-Gibbons M, Maher AR, Booth MJ, Miakel-Lye I, Beroes JM, Shekelle PG (2016) Mental health conditions among patients seeking and undergoing bariatric surgery. *JAMA* 315(2):150–163
9. Shelby SR, Labott S, Stout RA (2015) Bariatric surgery a viable treatment for patients with severe mental illness. *Surg Obes Relat Dis* 11(6):1342–1348
10. Steinmann WC1, Suttmoeller K, Chitima-Matsiga R, Nagam N, Suttmoeller NR, Halstenson NA (2011) Bariatric surgery: 1-year weight loss outcomes in patients with bipolar and other psychiatric disorders. *Obes Surg* 21(9):1323–1329
11. Litz M, Rigby A, Rogers AM, Leslie DL, Hollenbeak CS (2018) The impact of mental health disorders on 30-day readmission after bariatric surgery. *Surg Obes Relat Dis* 4(3):325–331
12. Jalilvand A, Suzo A, Hornor M, Layton K, Mahmoud AR, Macadam L, Mikami D, Needleman B, Noria S (2016) Impact of care coaching on hospital length of stay, readmission rates, post discharge phone calls, and patient satisfaction after bariatric surgery. *Surg Obes Relat Dis* 12(9):1737–1745
13. Doumouras AG, Saleh F, Hong D (2016) 30-day readmission after bariatric surgery in a publicly funded regionalized center of excellence system. *Surg Endosc* 30(5):2066–2072
14. Lois AW, Frelich MJ, Sahr NA, Hohmann SF, Wang T, Gould JC (2015) The relationship between duration of stay and readmissions in patients undergoing bariatric surgery. *Surgery* 158(2):501–507
15. Fabricatore AN, Crerand CE, Wadden TA, Sarwer DB, Krasucki JL (2006) How do mental health professionals evaluate candidates for bariatric surgery? Survey results. *Obes Surg* 16(5):567–573