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Original article

The impact of mental health disorders on 30-day readmission after bariatric surgery

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Abstract

Background: Mental health disorders are common among bariatric surgery patients. Mental health disorders, particularly depression, have been associated with poorer surgical outcomes, indicating the bariatric surgery patient population warrants special clinical attention.

Objective: Our study sought to examine the effect of diagnosed mental health disorders on 30-day readmission for those undergoing bariatric surgery in hospitals across Pennsylvania from 2011 to 2014.

Methods: We used Pennsylvania Healthcare Cost Containment Council data to perform this analysis. Inclusion criteria encompassed patients aged >18 years who underwent bariatric surgery at any hospital or freestanding surgical facility in Pennsylvania between 2011 and 2014. Mental health disorders were identified using predetermined International Classification of Disease, Ninth Revision codes. Logistic regression was used to model the risk of 30-day readmission and estimate the effect of mental health disorders on 30-day readmission.

Results: Of the 19,259 patients who underwent bariatric surgery, 40.3% had a diagnosed mental health disorder; 6.51% of all patients were readmitted within 30 days. Patients with a diagnosed mental health disorder had 34% greater odds of readmission (odds ratio = 1.34, 95% confidence interval: 1.19–1.51) relative to patients with no diagnosed mental health disorder. Patients with major depressive disorder/bipolar disorder had 46% greater odds of being readmitted compared with patients with no major depressive disorder/bipolar disorder diagnosis.

Conclusion: Study findings imply the need for risk assessment of patients before postoperative discharge. Given that patients with mental health diagnoses are at increased risk of 30-day readmission after bariatric surgery, they may benefit from additional discharge interventions designed to attenuate potential readmissions. (Surg Obes Relat Dis 2017;▮:00–00.)

Keywords: Mental health; Readmissions; Bariatric surgery

In 2012, the annual rate for inpatient bariatric procedures was 47.3 per 100,000 adults [1], and bariatric surgery continues to increase in popularity [2]. In a meta-analysis of studies published between 1988 and 2015, the prevalence of any preoperative mood disorder among bariatric patients was found to be 23% [3]. This figure is higher than published rates for the general population in the United States [4]. Broader surgical literature suggests that certain mental health disorders, particularly depression, may be associated with undesirable surgical outcomes, including mortality [5,6], indicating that the bariatric surgery patient population may warrant additional clinical attention.

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The overall safety of bariatric patients with mental health conditions presents a complex issue due to variability in scales, thresholds, and outcomes used within the literature [3]. Much of the bariatric surgery postoperative literature regarding mental health has focused on the association between mental health diagnoses and weight loss outcomes; however, these studies have produced mixed results [7–9]. In the previously cited meta-analysis, the authors found no clear evidence that preoperative mental health conditions were associated with differential weight loss after surgery [3]. While the literature consistently shows improvement in the first and second years postsurgery in regard to mental health, these initial improvements tend to dissipate by the third postoperative year [10] with deterioration in mental health symptoms at 10 years, despite successful weight loss [7].

Studies examining postoperative healthcare utilization in the bariatric surgery population found that patients diagnosed with preoperative mental health disorders had higher postoperative healthcare utilization. A study examining length of stay (LOS) and frequency of emergency department visits found patients who underwent bariatric surgery and had a diagnosis of severe depression, bipolar disorder, schizophrenia, psychosis, or anxiety disorders had longer LOS and more frequent emergency department visits compared with those with no mental disorder [6]. In another study, risk factors for postoperative hospital admissions within the first 2 years after bariatric surgery included female sex and psychoses/depression [11].

Readmission rate is a common quality care indicator in surgical practice and is typically measured within the first 30 days of surgery. Recent studies have suggested reasons for early readmissions after bariatric surgery are multifactorial [12]. To our knowledge, only 1 study has examined the psychological aspects of 30-day readmission rate for bariatric surgery patients. This study found readmitted patients were more likely to have a history of psychiatric hospitalization, yet these same patients were less likely to be receiving current mental health treatment, reported less use of psychotropic medications for mental health than nonreadmitted patients and presented in a more socially desirable manner in response to psychologic testing and evaluation compared with patients who were not readmitted [13]. This presentation may suggest underreporting of mental health and other psychosocial factors that impact postsurgical adherence.

Mental health co-morbidities may be a risk factor for readmission in bariatric surgery patients. Preoperatively identifying patients who are at increased risk for readmission may help clinicians provide appropriate and targeted postoperative care for this vulnerable population. Given the evidence regarding the most commonly measured postsurgical outcomes, uncertainty arises concerning not only long-term prospects for success among bariatric patients with mental health co-morbidities, but also whether these patients are receiving appropriate discharge and postoperative care after surgery.

Therefore, the purpose of this study was to examine the effect of diagnosed mental health disorders on 30-day readmission for those undergoing bariatric surgery in hospitals across Pennsylvania from 2011 to 2014. It was hypothesized that bariatric patients diagnosed with mental health disorders would be more likely to be readmitted within 30 postoperative days than patients without diagnosis of mental health disorders.

Methods

Data

The data set used in this study was from the Pennsylvania Healthcare Cost Containment Council, a state agency addressing high healthcare costs and providing information on healthcare provider performance to the public. The Pennsylvania Healthcare Cost Containment Council collects inpatient hospital discharge and ambulatory procedure records for admissions to all hospitals and surgical facilities in Pennsylvania as well as demographic information, diagnosis codes, procedure codes, hospital information, and financial data.

Patient selection

Patients over the age of 18 years who underwent bariatric surgery at any hospital or freestanding surgical facility in Pennsylvania between 2011 and 2014 were included in this study. Bariatric surgery was defined using an algorithm based on the International Classification of Disease, Ninth Revision (ICD-9) diagnosis and procedure codes. Any patient with a principal ICD-9 procedure code of 44.68 or 44.95 was included. In addition, patients were included if they had a principal procedure code of 43.89, 44.31, 44.38, or 44.39, and a primary ICD-9 diagnosis code of obesity. Patients were excluded if they had any diagnosis of gastric neoplasm, colitis, or inflammatory bowel disease, or if their surgery was deemed revision.

Outcome

The primary outcome evaluated in this study was readmission within 30 days of discharge from the initial hospital stay. Because the data set is longitudinal, we could identify any readmission to any Pennsylvania hospital; readmission to hospitals outside of Pennsylvania was not included.

Covariates

The primary covariates of interest were indicators of mental health disorders obtained from bariatric surgery discharge data, which reflect data from entire admission. Mental health disorders were identified using ICD-9 codes