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Multimorbidity: A Review of the Complexity of Mental Health Issues in Bariatric Surgery Candidates Informed by Canadian Data

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ABSTRACT

Background: Multimorbidity is significant for obesity and mental health issues. As a consequence, mental illness is overrepresented in patients seeking bariatric surgery. This review addresses that overlap, with a focus on Canadian data.
Conclusion: The healthcare system in Canada is unique, but issues related to prevalence of mental health in patients seeking bariatric surgery are similar to those in studies conducted in other countries. Although data on suicide are lacking, Canadian data have shown similar rates of self-harm behaviours and linkages between psychopathology and weight regain after surgery. Geographic issues that make it difficult for individuals to attend regular follow-up appointments have encouraged the use of e-health tools to engage patients and ensure access to follow-up care, which may provide unique opportunities going forward. Additional work is needed to inform best practices in the Canadian system, but in keeping with other data, the consistent message from Canada is that appropriate evaluation and aftercare are essential components of a well-informed bariatric program.

RÉSUMÉ

Introduction : La multimorbidité est significative lors d'obésité et de problèmes de santé mentale. Par conséquent, la maladie mentale est surreprésentée chez les patients qui souhaitent subir une chirurgie bariatrique. La présente revue traite de ces points communs en insistant sur les données canadiennes.
Conclusion : Le système de soins de santé du Canada est unique, mais les enjeux liés à la prévalence de la santé mentale chez les patients qui souhaitent subir une chirurgie bariatrique sont semblables à ceux des études menées dans d'autres pays. Bien que les données sur le suicide fassent défaut, les données canadiennes ont montré des taux de comportements autodestructeurs similaires et des liens entre les troubles psychopathologiques et la reprise de poids après la chirurgie. Les facteurs géographiques qui nuisent à la présence des individus à leurs rendez-vous de suivi réguliers ont favorisé l'utilisation des outils de télésanté pour inciter les patients à participer aux soins de suivi et à leur en assurer l'accès, ce qui donne lieu à des occasions uniques pour aller de l'avant. Des travaux supplémentaires sont nécessaires pour établir de meilleures pratiques dans le système de santé du Canada, mais conformément aux autres données, le message que le Canada souligne sans cesse est que l'évaluation appropriée et la postcure sont des composantes essentielles d'un programme de chirurgie bariatrique bien documenté.

Introduction

Obesity is a costly illness, representing one of the biggest drivers of preventable chronic diseases and healthcare costs. Currently, estimates for these costs range from $147 billion to nearly $210 billion per year (1). In addition, obesity is associated with job absenteeism, costing approximately $4.3 billion annually (2). There is also a life expectancy cost, with obesity-related diseases being linked to increased mortality and a decreased life expectancy of as much as 11.7 years, depending on age, gender, race, and body mass index (BMI) classification (3). Moreover, other research has demonstrated that even modest levels of overweight are associated with significant reductions in health-related quality of life (HRQOL) (4). The impact of overweight and obesity on HRQOL is not limited solely to their effects on physical health parameters, because weight issues can also have a significant negative impact on psychologic functioning (5).

The relationship between obesity and mental health is complicated and bidirectional. As weight issues increase, so does the likelihood of an individual experiencing a mental illness (6). Similarly, if an individual has a major mental illness, the likelihood of having

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weight issues is increased (7). This association is more pronounced as BMI increases, and as a consequence, mental health issues are overrepresented among patients seeking bariatric surgery (8). This is an issue because bariatric surgery is an effective treatment for obesity, and in addition to leading to long-term weight loss, it reduces overall mortality and incidence of diabetes and cardiovascular disease (9), improving HRQOL. Both obesity and mental illness are highly stigmatized illnesses, and when they co-occur, the added complexity unfortunately affects treatment decisions and access to healthcare (10).

The purpose of this review is to examine the evidence pertaining to mental illness and bariatric surgery, highlighting Canadian data, to help direct clinicians to ensure all patients receive the best possible healthcare.

Bariatric Surgery and Mood Disorders

Mood disorders, primarily categorized as major depressive disorder and bipolar disorder, have lifetime prevalence rates of 12% and 2%, respectively, (11, 12) so it is not unexpected that this category of illness would be highly represented in populations undergoing bariatric surgery. This was confirmed recently in a Canadian cohort with the use of data from the Ontario Bariatric Registry, a multisite, observational registry database that contains information on all patients who have undergone bariatric surgery at participating centres in Ontario, Canada, since 2010 (13). This study of more than 10,000 bariatric surgery candidates demonstrated that approximately 51% had a current or previous diagnosis of some form of mental illness (14). The most common diagnosis was depression, which was identified in 41.7% of the total population, representing 82.3% of those with documented mental illness, while 2.2% of the population had bipolar disorder (14). The impact of depression and bipolar disorder on postoperative outcomes is well established, but according to a recent meta-analysis, neither disorder is consistently associated with differences in weight outcomes. Of interest, this meta-analysis also revealed that bariatric surgery is consistently associated with postoperative decreases in the prevalence of depression (7 studies: 8%–74% decrease) and the severity of depressive symptoms (6 studies: 40%–70% decrease) (15). In a recent Canadian study, in which data from a single tertiary centre were used to compare the weight loss outcomes of patients with complex psychiatric histories (bipolar disorder, schizophrenia, history of suicide attempt) with those of patients with less severe psychiatric histories and no mental health diagnoses, investigators found no differences in the 1-year weight loss results across groups (16), validating results from studies in other regions in which results for participants with bipolar disorder and schizophrenia were examined (17, 18). These findings contradict results of earlier studies suggesting that those with severe psychiatric illness do not lose weight after bariatric surgery (19, 20). These conflicting results necessitate further study, but they suggest that it may not be a diagnosis of a major mental illness per se that affects weight loss after surgery, but rather other complicated variables such as an ability to engage in programs designed to help with lifestyle changes (20). This would imply that such programs must be readily available. A stable course of any preexisting mental illness is also important, because this seems to be associated with better outcomes compared with more severe or unstable mental illness (17, 18).

Furthermore, despite the unclear nature of the relationship between preoperative depression and surgical weight outcomes, there is a fairly clear relationship between postoperative depression symptoms and/or a diagnosis of depression and poorer outcomes (21, 22), providing evidence for the need for effective postoperative psychiatric follow up.

It is also important to recognize issues pertaining to pharmacotherapy in this population. In the previously mentioned study of Ontario Bariatric Registry data by Hensel et al, 38% of all individuals seeking bariatric surgery were taking at least 1 psychotropic medication at baseline, most commonly antidepressants (14). Given that reduced drug absorption may occur after bariatric surgery (23), individual dose adjustment and therapeutic monitoring may be required to ensure there is no exacerbation of the mental illness.

Eating Disorders in Bariatric Surgery

There is little consensus with respect to the significance of eating disorders and bariatric surgery. Binge eating disorder (BED), the most prevalent of the eating disorders in this population, with prevalence rates of up to 30% depending on the study (24), has been linked to suboptimal postoperative weight loss (25, 26). Some studies indicate that there is no association (27, 28), whereas others suggest that bariatric surgery with its forced behavioural modification is a reasonable treatment approach for BED (29). The main issue seems to be related, not necessarily to having symptoms of BED but to experiencing significant feelings of loss of control, which may be part of a major depressive disorder diagnosis or other psychopathology often comorbid with BED. This is supported by research from Canada that suggests that difficulties in regulation of emotions may be an important clinical issue to address to reduce binge eating in bariatric surgery candidates (30). Additional research by this group indicates that participants with loss of control over eating also had significantly higher levels of night eating, depressive symptoms and eating disorder psychopathology and poorer mental HRQOL (31). A challenge is illustrated by recent research that indicates that standard assessment tools used for eating disorders—the Eating Disorder Examination Questionnaire, Questionnaire of Eating and Weight Patterns Revised and the Three Factor Eating Questionnaire— are not accurately translatable to candidates for bariatric surgery (32). Psychometric evaluation did not support the use of the commonly used disordered eating measures in their original forms for patients undergoing bariatric surgery.

Although anorexia nervosa is a common area of concern, there is very little evidence that bariatric surgery routinely results in the development of this eating disorder. This type of outcome has been reported in a series of case studies (33–35). This is also true of bulimia nervosa (BN). There is only 1 published case study on purging before surgery, and it indicates that purging before surgery is not associated with weight issues after surgery. A case report of a person with a history of BN, who received a gastric band and then manipulated the band by inflation and deflation as a way to engage in BN behaviours, illustrates how important it is to ensure that BN is recognized (36). There is a small amount of evidence that after bariatric surgery, purging may emerge as a means to control weight, but like anorexia nervosa, this is uncommon (33, 37). Some of the variability in these findings may be related to differences in study quality and methodology or variability in duration of postoperative follow up (38).

Active BN is considered a contraindication to bariatric surgery, whereas a history of severe anorexia nervosa is a reason to do a diligent assessment for other psychopathology that would be a cause for concern (39).

The Association between Suicide and Bariatric Surgery

Perhaps the outcome of most concern with respect to the link between mental illness and bariatric surgery is the elevated risk of suicide in candidates for bariatric surgery. A 2013 meta-analysis estimated a suicide rate of 4.1 per 10 000 person-years, which is 4 times higher than that of the general population and included 1 study that indicated an almost 7-fold increase (40). This difference is even more