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ASMBS Guidelines/Statements

Recommendations for the presurgical psychosocial evaluation of bariatric surgery patients

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Abstract Psychosocial factors have significant potential to affect long-term outcomes of bariatric surgery, including emotional adjustment, adherence to the recommended postoperative lifestyle regimen, weight loss outcomes, and co-morbidity improvement and or resolution. Thus, it is recommended that bariatric behavioral health clinicians with specialized knowledge and experience be involved in the evaluation and care of patients both before and after surgery. The evaluating clinician plays a number of important roles in the multidisciplinary treatment of the bariatric patient. Central among these is the role of identifying factors that may pose challenges to optimal surgical outcome and providing recommendations to the patient and bariatric team on how to address these issues. This document outlines recommendations for the psychosocial evaluation of bariatric surgery patients, appropriate qualifications of those conducting these evaluations, communication of evaluation results and suggested treatment plan, and the extension of behavioral healthcare of the bariatric patient to the entire span of the surgical and postsurgical process. (Surg Obes Relat Dis 2016;12:731–749.)

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Since the 1991 National Institutes of Health Consensus Conference Development Panel recommendation of a multidisciplinary team approach to the surgical treatment of morbid obesity [1], the requirement of presurgical psychosocial evaluation of patients seeking weight loss surgery has been adopted by the majority of third-party payors and by over 80% of bariatric surgery programs in the United States [2,3]. Subsequent best practice guidelines, including the recent guidelines published by Mechanick et al. [4] have called for psychosocial evaluation of patients seeking weight loss surgery (WLS), either in all cases or in those in which there may be psychosocial concerns [4–8]. Despite the widespread utilization of presurgical psychosocial evaluation, however, there presently is a lack of standardized, empirically-based guidelines [9].

The purpose of the present document is to update the 2004 American Society for Metabolic and Bariatric Surgery

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(ASMBS) Suggestions for the Psychological Evaluation of WLS Candidates [10], drawing upon the most current, published literature. The 2004 suggestions were developed by an ASMBS ad hoc committee comprised of bariatric behavioral health providers with experience in presurgical evaluation and long-term care of bariatric patients. Although much of the content of that document remains relevant today, the state of knowledge has increased dramatically since that time. Accordingly, this document will require periodic revisions to continue to reflect the most current knowledge. The authors of this revision of the 2004 document represent a subcommittee of the Integrated Health Clinical Issues and Guidelines Committee.

Methods

Three literature searches were performed during the preparation of this document. The original literature search was conducted using PubMed for articles related to weight loss surgery and psychosocial factors related to weight loss surgery, focusing on adults and published in English between January 1, 2002 and June 30, 2013, to ensure capture of all pertinent articles published since the 2004 document was written. The review focused on current surgical procedures that are commonly employed: laparoscopic adjustable gastric banding, Roux-en-Y gastric bypass (RYGB), sleeve gastrectomy, biliopancreatic diversion, and duodenal switch. The specific search terms were bariatric surgery, gastric banding, gastrectomy, or sleeve gastrectomy; gastric bypass; duodenal switch; jejunoileal bypass; AND: assessment; evaluation; testing; personality; traits; eating disorder; binge eating disorder; depression; anxiety; psychosis; psychotic; psychosocial; psychological; psychology; social; substance; and alcohol. Each surgery procedure search term was combined with each of the psychosocial search terms. Additional papers were identified upon examination of bibliographies from collected reports. In all, 2346 unique articles were initially identified through the PubMed search. Of these, 522 appeared to be potentially relevant in a preliminary screen of titles and abstracts. Ultimately, 277 articles identified in the initial search were deemed to be relevant and reviewed in detail. An additional 160 articles were identified through other means, and additional, existing sets of relevant published guidelines [4–8,11–14].

In January 2015, a second search of the literature from July 1, 3013 to January 30, 2015, was performed to ensure consideration and inclusion of any relevant literature published after the time period covered by the first search. The same databases, search terms, and additional procedures used for the first search were used in the second search. The ASMBS Textbook of Bariatric Surgery [15] was also reviewed. In addition, a search was conducted for the entire time period (January 1, 2002 to January 30, 2015) using the search term "quality of life" in response to feedback suggesting inclusion of material related to this topic in the final document. A further 12 sources, recommended by ASMBS members during the preliminary comment period for this document (January 28 to February 11, 2015), were reviewed and incorporated. In all, an additional 222 unique articles were identified in the later literature searches, read by the authors, and, where appropriate, incorporated into the current document. In all, a total of 673 articles, book chapters, or other sources were reviewed in the preparation of this document.

Objectives of the preoperative psychosocial evaluation

The primary objective for the psychosocial evaluation for WLS is to provide screening and identification of risk factors or potential postoperative challenges that may contribute to a poor postoperative outcome. These factors may lead to the recommendation of additional management or intervention before and or after surgery [16], or, in some cases, may contraindicate surgery [17]. The ultimate aim of these evaluations is to enhance surgical outcomes [18,19].

The preoperative psychosocial evaluation also serves the purpose of obtaining information of importance to the other providers (within and outside the surgical program) who will be working with the patient before and after surgery [20]. Proactive referrals to behavioral health resources, delivery of interventions designed to mitigate identified risks and challenges [21], and coordination of pre- and postsurgical care with other providers are important components of the bariatric behavioral health clinician's role, though the degree to which these are practicable will vary with the degree of integration of the behavioral health clinician with the rest of the bariatric team.

Another important function that the preoperative psychosocial evaluation process serves is to establish a positive and trusting working relationship between the behavioral health clinician and the patient. It is particularly important for the evaluator to communicate to the patient that his or her role is to work with the patient to be able to proceed to surgery, and ensure the best possible outcome afterward. This will help to increase the patient's willingness to be open and candid during the evaluation [22]. Establishing trust and rapport during the initial evaluation also serves to enhance the patient's willingness to seek behavioral support after surgery if problems are encountered.

It is worth noting that weight loss is not the only important domain of surgical outcome, though it is the outcome most frequently examined in the bariatric empirical literature. Other aspects of surgery outcome, such as improvement in metabolic status and medical co-morbidities, increased quality of life, and better psychosocial and behavioral functioning, are clearly important considerations as well [23–27]. Even a patient with excellent postsurgical weight loss may encounter psychosocial difficulties and

challenges after surgery, ranging from disruptions in interpersonal relationships [28] and body image dissatisfaction [29] to concerns as serious as substance abuse [30] and even suicidal behavior [31]. The aim of preoperative psychosocial assessment is to enhance all domains of surgical outcomes.

If the evaluator has reservations about a patient undergoing surgery and/or believes that time is needed to deliver an intervention or increase supports to enhance the safety and efficacy of surgery, this should be communicated clearly to both the patient and the rest of the bariatric team. There may be cases in which the evaluator concludes that even with extra support or intervention, WLS would not be an appropriate treatment for the patient in question.

Presurgical psychosocial evaluation methods

Current practices

A number of approaches to the preoperative psychosocial evaluation have been described in the literature [2,32]. The inclusion of a clinical interview seems to be nearly universal and interview is widely regarded as the essential component of the presurgical psychosocial evaluation [32]. Because of the very specific role that the psychosocial evaluation plays in developing a comprehensive treatment plan for the surgery process, the clinical interview conducted during WLS evaluation will differ from a routine general mental health intake interview, which is typically limited to assessing psychopathology and mental status [2,22]. The clinical interview for WLS will include those domains but must also examine a number of additional factors [2,19,21]; this common core of domains will be described in the following. In addition, psychometric testing is utilized by the majority of providers [2,32,33].

Domains for presurgical psychosocial evaluation

Weight history

Obtaining a comprehensive history of the patient's weight trajectory over time, including past weight loss attempts, is an essential component of the evaluation [4,8,11,12]. This information is routinely collected by dieticians or nutritionists evaluating bariatric patients, but is also important in the psychosocial evaluation because it clarifies the various environmental and physiologic contributors that have affected the patient's weight [7,19,21,22]. It also allows the evaluator to obtain information about the specific types of weight loss interventions that have been tried, duration of adherence to the various approaches, and what factors were either helpful in promoting adherence or barriers to sustained behavior change.

Eating disorder symptoms

A substantial body of research has examined the relationship between preoperative eating disorder symptoms and/or diagnoses and surgery outcome. Because of varying study designs and methodology, sample sizes, and follow-up duration, it is difficult to draw precise conclusions from this body of research. However, clinical experience and expert opinion, as well as most published sets of practice guidelines, suggest that it remains important to carefully assess past and current eating disorder symptoms [19,34–36]. A synthesis of the existing literature suggests that, in and of themselves, such symptoms do not necessarily represent an absolute contraindication for WLS [4,7,8,11,12,36].

Binge eating. Evaluators should be familiar with the most current (i.e., Diagnostic and Statistical Manual of Mental Disorders, 5th Edition) [37] diagnostic criteria for binge eating (BE) disorder (BED), the most common eating disorder observed in patients presenting for WLS. However, even BE that does not meet full diagnostic criteria for BED may be clinically relevant to surgery outcome. Estimates of the prevalence of BED in WLS-seeking samples vary widely, ranging from about 2% to as high as 30% [38–40] and as high as 39% to 50% when the definition of BE is expanded to include subclinical BED symptoms [41]. BE is the focus of the majority of published research on WLS and eating pathology, with studies examining either formal BED or the general presence of BE.

The presence of BE episodes and associated pathology, rather than their absolute frequency, should be the evaluator's primary focus [42]. In particular, research suggests that the clinical significance of BE is related more to the experience of loss of control while eating than whether the eating episode involves an objectively large amount of food [43]. Loss of control appears to be the factor most related to the severity of impairment and attendant psychopathology [44], as well as to postsurgical eating pathology, depression, and poorer quality of life [45]. Similarly, BE that occurs in response to, or as a way of coping with, negative emotions, may be of greater concern than BE triggered by other factors [46]. The general tendency to eat in response to negative emotions is related to poorer postoperative weight loss [47–49]. Thus, the evaluator should probe for the use of eating as one's primary coping strategy, regardless of the volume consumed [50].

Studies relating preoperative BE symptoms or BED and WLS outcomes have produced mixed findings, with some studies finding that baseline BE or BED is associated with somewhat poorer postoperative weight loss [51–55] and others (typically those with shorter follow-up durations) finding no association between baseline BE or BED and weight loss outcomes after surgery [56–66]. Some of the variability in these findings may be related to differences in study quality and methodology or variability in postoperative follow-up duration [43].

Despite this variability, it remains important to evaluate for symptoms of BE before surgery, as several studies have found that subjective or objective BE before surgery predicts BE or other eating disturbances after surgery [40,45,65,67–69]. Studies have consistently shown that postoperative eating disturbances are related to both poorer long-term weight loss [40,43,45,68,70–79] and poorer psychosocial outcomes [72,80]. Although not all patients with presurgical eating disturbances will go on to exhibit such disturbances after surgery, it is recommended for the evaluator to educate patients about the risks of recurring eating pathology after surgery and to provide resources for treating such problems if they do occur, in addition to providing long-term postsurgical monitoring [7,22,43,67,81].

Night eating syndrome. Night eating syndrome (NES) is a pattern in which individuals exhibit a temporal shift toward late-evening or nocturnal eating [82]. To date, only a few studies have examined NES and WLS outcome, with general agreement that presurgical NES did not predict weight loss outcome after WLS [83,84]. However, the presence of NES *after* surgery has been found to be associated with a higher postsurgical body mass index and lower satisfaction with outcome [83]. Therefore, evaluators should assess for the presence of NES and make appropriate recommendations regarding intervention or postsurgical monitoring [7].

Compensatory behaviors. Compensatory behaviors, such as self-induced vomiting for weight and shape reasons, are often considered to be a contraindication for WLS [4,85,86]. To our knowledge, there is only one published study examining the relationship between presurgical compensatory behaviors (e.g., purging) and WLS outcome, finding no relationship between purging and weight loss 1 year after surgery [87]. However, there is some evidence that the presence of purging behavior may be a marker for more severe psychopathology [88]. In addition, after surgery, a significant minority of patients do engage in self-induced vomiting for the purpose of controlling weight [67,89,90], which may evolve from the involuntary vomiting that is not uncommon after WLS [91]. These behaviors are obviously a cause for concern in terms of the patient's psychological and physical health [22].

Anorexia nervosa. Some patients seeking WLS have a past history of anorexia nervosa (AN) symptoms. No studies examining whether a history of AN has an impact on WLS outcomes were identified in this review. However, there have been case reports of patients developing concerning overrestrictive eating patterns after surgery [89,92,93], and patients with a history of AN symptoms should be educated and monitored during the surgical process and long-term follow-up.

Other eating behaviors

The exploration of current eating behavior and patterns is distinct from a formal assessment of eating pathology. Even in the absence of clear eating pathology, patients may engage in eating habits likely to undermine successful weight loss after surgery, such as skipping meals, eating in the absence of hunger, consuming large portions, and obtaining many meals outside the home [94]. The evaluator may examine specific details about meal planning and preparation, portion sizes, and food choices, as well as frequency of meals, snacking patterns, and consumption of caloric beverages [11]. Grazing, or frequent consumption of small amounts of food in an unplanned manner, although apparently not related to eating disorder pathology per se [95], is of particular concern because engaging in this type of behavior after surgery may compromise weight loss outcomes [68,69,96,97]. Examining these factors allows the interviewer to assess the patient's ability to plan, organize, and initiate goal-directed behavior, which is likely to have an impact on postsurgical outcomes [35]. While obtaining this information, the evaluator also has the opportunity to provide education about the specific changes involved in the postsurgical eating regimen. The overarching goal here is to facilitate proactive behavioral problem-solving to enhance postsurgical adherence and adjustment [19,21].

Psychosocial history

Psychiatric history and psychosocial functioning. Patients with severe (e.g., Class III) obesity tend to exhibit more psychopathology than healthy-weight individuals or those with less-severe obesity [98]. In addition, individuals with obesity who seek weight loss treatment exhibit more psychopathology than individuals with obesity from community samples [16,98,99]. Patients with severe obesity and/or those seeking surgical weight loss treatment are more likely to report current or lifetime mood and anxiety disorders (particularly posttraumatic stress disorder, social phobia, and panic disorder) [3,6,19,98,100–109].

The relationship between presurgical psychopathology and WLS outcomes appears to be complex. A number of studies have not demonstrated significant relationships between presurgical psychopathology and postsurgical outcome [18,51,110–112], though an impact of psychopathology on outcome is more likely to be observed in studies with a follow-up duration of more than 1 year [113,114]. One reason for the lack of a clearly interpretable body of research about these relationships is the methodological variation in definitions, data collection modality, follow-up duration, and other factors [69]. Findings may also be affected by the fact that patients with marked psychopathology are typically not represented in outcome studies because they are frequently excluded from surgery [7,99,115–117].

Another factor likely contributing to the mixed evidence of relationships in this domain is that the presentation and functional impact of specific symptoms or disorders may vary considerably among individuals who share the same diagnoses, making it difficult to characterize or quantify the relationship between presurgical psychopathology and postsurgical outcomes. For instance, some individuals with major depression are able to function adequately in their daily lives, while others are greatly impaired by their symptoms. There is evidence that the severity of psychiatric symptoms, rather than their mere presence, plays a more influential role in determining surgery outcome [51,113,118–120]. Therefore, the relevant focus of the presurgical evaluation should be the impact that such symptoms or diagnoses have on postsurgical adherence and self-care. The evaluator is encouraged to focus on extent to which symptoms are affecting the patient's functioning, how stable the patient has been and for how long, whether appropriate mental health treatment is in place, and how well any symptoms are currently being managed [8,21]. In general, current severe, untreated psychopathology is widely considered to be a contraindication for WLS, which is reflected in most of the existing practice guidelines [4,5,11].

Among the psychological disorders most studied in this population is depression [99]. It should be noted that there is some overlap between symptoms of major depression and the physical consequences of obesity, such as fatigue, increased appetite, and poor sleep [121,122], which may lead to overdiagnosis of depression in this population [123]. Care should be taken to differentiate symptoms truly reflecting depression from symptoms that are solely secondary to obesity itself.

Although a few studies have found that patients with a diagnosis of depression or exceeding a clinical cutoff on a measure of depression symptoms at baseline lose less weight in the short term [124,125] or exhibit poorer postoperative adherence [54,126,127], most studies have found no difference in outcomes between patients with and without baseline depression [57,64,77,128–132]. However, 1 recent large, prospective, multicenter study found that patients scoring within the mild to severe range on the Beck Depression Inventory before surgery were at increased risk of major adverse medical event in first 30 days after surgery [133]. There is evidence that patients with a diagnosis of depression at baseline may experience remission of depression in the short term (e.g., within the first year after surgery). However, these individuals are more likely to meet a depression diagnosis in the longer term (e.g., 2–3 yr) after surgery [118,133]. Furthermore, despite the unclear nature of the relationship of preoperative depression to surgical weight outcomes, there is a fairly clear relationship between *post*operative depression symptoms and/or diagnosis and poorer outcomes [69,77,113,118].

It is important to evaluate current and past suicidal ideation and attempts, as studies have found a higher prevalence of previous suicidality and suicide attempts in this population [134–137]. In addition, there is evidence of an elevated risk for suicide after WLS [31,138–140], and the strongest predictor of future suicide attempts is a history of past attempts [141]. There is clinical consensus that current or recent suicidality is a contraindication for WLS [2,32]. However, to date there is no empirical basis for considering a remote history of suicide attempts to be an absolute contraindication for WLS, or for how long the patient should have been free of suicidal ideation or behaviors before proceeding to surgery.

Findings from 1 recent study indirectly suggest that a lifetime history of bipolar disorder may be associated with poorer weight loss after surgery [142]. On the other hand, in 2 other studies weight loss for bipolar patients was not found to be significantly different from those without this disorder at 12 [143] and 24 [112] months after surgery. All 3 of these studies included relatively small numbers of participants with bipolar disorder. A larger recent study with a mean postoperative follow-up of 2 years concluded that undergoing WLS did not have an adverse impact on the psychiatric course or treatment of patients who had bipolar disorder [144]. There is no clear evidence that bipolar disorder, in and of itself, is an absolute contraindication for WLS, but as with other psychiatric conditions, the evaluator must assess the current functioning and stability of the individual patient with bipolar disorder and the degree to which these symptoms may affect postsurgical adjustment and adherence.

Anxiety disorders are the most common type of psychiatric diagnosis among the WLS-seeking population [145]. However, the impact of anxiety symptoms and diagnoses on WLS outcomes has been studied less frequently than depression. The few studies examining the relationship between preoperative anxiety scores or diagnoses and postoperative weight loss in the short and long term after surgery have generally not found an association [57,118,132]. However, these studies include relatively small sample sizes, and the rigor of their methodology is variable. One of these studies demonstrated that a lifetime history of an anxiety disorder diagnosis (as opposed to a current diagnosis) was related to poorer weight loss both within the first postoperative year and also at 2 to 3 years after surgery [118]. These mixed findings may reflect the fact that different types of anxiety symptoms have varying potential to affect adjustment and outcome after surgery. For instance, the evaluator should bear in mind that certain types of anxiety symptoms, such as agoraphobia and social phobia symptoms, may have an impact on postsurgical adherence to medical appointments and support groups [112,146,147]. This is particularly relevant given that although (as noted previously) depression symptoms remit in the short term after surgery for some individuals, anxiety

disorder symptoms do not seem to change significantly after surgery [118].

Only 2 studies were identified examining the outcomes of patients with schizophrenia who have undergone WLS, likely because such patients are often screened out of the surgery process. No significant differences in weight loss outcomes were found, but both studies included very small numbers of patients and both examined only short-term follow-up (6 mo to 1 yr) [112,148].

Estimates of the prevalence of personality disorders among patients seeking WLS range from ~20% to 30% [3,105,149]. Findings regarding the impact of Axis II pathology on WLS outcomes are relatively limited and mixed [125,150,151]. For instance, in a review of 14 studies examining the relationship between personality disorder diagnosis or symptoms and postoperative weight loss, Livhits et al. [125] found that half demonstrated that patients with personality disorders had significantly poorer postsurgical weight loss, whereas 3 showed no association and 4 suggested better weight loss. Varying quality among these studies makes it difficult to draw firm conclusions. However, individuals with personality disorders, particularly those associated with mood lability, attention-seeking, and self-harming behaviors, may encounter more difficulty in psychosocial adjustment after surgery. In addition, they may pose clinical challenges to members of the bariatric surgery team. Therefore, identifying signs that a personality disorder may be present can be useful in formulating recommendations that will be helpful to both the patient and the other clinicians involved in the patient's care.

Developmental and family history. The aim of this portion of the evaluation is to obtain a broad overview of the patient's early and more recent psychosocial history, including notable or significant life events (e.g., familial disruption, abuse, difficulties with learning, etc.) The bariatric population is more likely to report a history of adverse life events, given emerging findings that stressful early life experiences are associated with the development of obesity [152,153].

A brief screening for history of sexual and other forms of trauma should be completed. A number of studies have documented a link between childhood trauma and obesity [154,155]. Numerous studies have failed to find a relationship between a history of posttraumatic stress disorder, sexual abuse, or other adverse childhood experiences and postoperative weight loss [62,119,156–161]. Thus, such a history does not seem to represent a contraindication for WLS. However, trauma history may be related to general psychopathology [162] and or poorer postoperative psychosocial adjustment [155,156,158–160]. Additionally, research suggests that a history of trauma can affect the development and maintenance of chronic health conditions [163] and has the potential to impact postsurgical outcomes. When a history of trauma is present, the evaluator may wish to discuss with the patient the possibility that significant weight loss may trigger the onset or exacerbation of symptoms related to past trauma(s) [21,164].

Current and past mental health treatment. The evaluator should obtain a brief history of the patient's previous mental health treatment, including psychiatric hospitalizations [22]. One study [86] found that patients who had undergone past treatment for psychiatric or substance abuse disorders demonstrated better weight loss 2 years after surgery. However, concerns would be greater about a patient who has a history of multiple and or recent psychiatric hospitalizations, which may reflect greater psychiatric severity and or instability. Although anecdotal discussion within the field indicates that many practitioners are reluctant to recommend surgery if a patient has had a psychiatric admission within a specified recent time frame (e.g., the past year) [165], no consensus has been reached.

When the patient is currently receiving mental health treatment, it is recommended that, when possible, the evaluator contact the current provider(s) for input [22,117]. This information can assist in completing the diagnostic profile, reviewing history of adherence, and developing a collaborative working relationship with these providers(s). The evaluator should obtain information about the patient's psychotropic medication regimen because the absorption, potency, and effectiveness of some of these medications (particularly "extended-release" formulations) may be altered after procedures such as sleeve gastrectomy, biliopancreatic diversion, duodenal switch, and RYGB [166–168].

Cognitive functioning. Recent studies have identified cognitive difficulties in individuals with obesity, including those seeking WLS, particularly in the area of executive functioning [169–173]. In addition, a large body of evidence suggests co-morbidity of attention deficit disorder (ADD) and obesity and or weight gain [174–178] and an elevated prevalence of ADD in patients seeking WLS [179]. Executive functioning skills, essential for maintaining a healthy weight (e.g., planning, organization, impulse control, etc.) are those most impaired in ADD [175,177,178,180,181]. Such deficits can affect the patient's ability to adhere to the postoperative behavioral regimen, leading to poorer long-term outcome. In 1 study, baseline cognitive functioning was inversely related to body mass index at 12-month postoperative follow-up [182]. In another, cognitive functioning was found to be positively related to early postoperative adherence to behavioral recommendations [183]. Encouragingly, recent evidence suggests that there may be an improvement in cognitive functioning after surgery, particularly in the first postoperative year [169,184].

The evaluator should form a general impression of the patient's basic comprehension skills [185], as they pertain to the ability to understand information about surgical

procedures, risks, benefits, and the postoperative behavioral regimen (and thus to give truly informed consent [4]). This is typically possible without administering any formal cognitive measures. There is a documented relationship between poor literacy and poor health outcomes in the general medical literature [186]. Concerns about cognitive functioning may be particularly relevant in older patients [187]. In cases where the evaluator has significant concerns about comprehension and the potential impact on ability to give informed consent or on postsurgical self-care and/or adherence is not clear, cognitive testing may be indicated, and information should be gathered from collateral sources (parent, spouse, other treaters) about the patient's ability to manage the demands of daily living and whether adequate supports are in place to assist the patient in doing so. The evaluator should recommend collaboration between the bariatric team and a member of the patient's social or family network to help the patient comprehend, remember, and follow the postoperative regimen.

Modifications to the surgical program's educational protocol may increase the patient's ability to comprehend informational materials [21]. Adaptations should also be made to the surgical practice's standard protocol for providing education and follow-up to these patients (e.g., individual rather than group sessions, inclusion of a responsible caregiver in education sessions, provision of instructions in simpler language, etc.) [97]. Similar steps should be taken in cases where mild to moderate intellectual disability or developmental delay have already been documented [12,97]. Although true informed consent may be difficult to attain in such cases, legal consent may be furnished by a guardian, and "informed assent" should be sought from the patient.

Personality traits and temperament. One emerging area of empirical interest that holds promise for the practice of the preoperative psychosocial evaluation is the examination of the relationship between specific personality or temperament characteristics and WLS outcome. A fairly consistent body of research suggests that certain personality characteristics, such as low conscientiousness, poor impulse control, and elevated neuroticism (a tendency to experience labile and negative mood states), are related to risk for obesity [188,189]. Identifying personality phenotypes (as opposed to disorders) may improve predictions of psychosocial, medical, and behavioral outcomes and suggest novel strategies for optimizing surgical results [190]. Although studies on this topic are few, results have been promising. In particular, the trait of "persistence," or an ability to continue to pursue one's goals despite immediate setbacks and frustration, has been found in 3 separate studies to be a significant predictor of weight loss after both laparoscopic adjustable gastric banding [191] and RYGB [192,193], even after controlling for controlling for psychopathology. In 2 of these studies, this single personality variable explained over 40% of the variability in weight loss 1 year after surgery [191,192]. Further research in this domain is clearly warranted.

Current stressors

Acute and chronic stressors may have an impact on the patient's ability to focus on self-care and adherence to postoperative dietary and physical activity guidelines. Thus, the presence of current stressors and the extent to which these are having an impact on functioning and self-care should be assessed [22]. Although WLS has the potential to be a life-saving intervention for many patients, suboptimal adherence and self-care can limit the success of the surgery [18,194]. For patients experiencing severe and acute stressors (e.g., divorce, severe illness or recent death of a loved one, etc.), it is beneficial to make sure extra supports are in place or even to consider delaying surgery until the stressor has resolved or is under better control [97].

Social support

There is evidence from research in various medical realms [195,196] and behavioral weight management [197] that the extent and quality of social support have an impact on treatment adherence and outcomes. One study specific to WLS found that self-reported support from family and friends for their decision to undergo surgery was associated with a higher likelihood of having a successful outcome [198]. Evidence also suggests that attendance at postoperative support groups is related to better weight loss after surgery [199]. Although more research is needed, these findings demonstrate the value of assessing social support in the WLS-seeking patient. This may be accomplished by asking the patient about the presence and quality of relationships with romantic partners, friends, family members, and community organizations [22]. Patients who report suboptimal social support may benefit from more-frequent pre and or postoperative contact with the surgical team.

Quality of life

Obesity is associated with significant impairment in overall quality of life, particularly in terms of the impact of common co-morbidities such as depression and anxiety [200–205], infertility [206], pelvic floor disorders [207,208], physical functioning [209–212], gastroesophageal reflux disease [213], and sexual functioning [214]. Improved physical and mental quality of life are strong motivators for patients seeking WLS [215]. Numerous studies have found significant improvements in health- and weight-related quality of life after surgery [14,200–202,213,216–233], including specific domains such as occupational [234] and sexual [235] functioning. Assessing the impact of weight on quality of life provides insight as to

the reasons patients have for seeking bariatric surgery, and this may have implications for their expectations about surgery outcome. Quality of life can be assessed formally using a standardized measure or informally elicited through questioning during the clinical interview.

Health-related behaviors

Substance use. Evaluation for WLS should include an assessment of the patient's current and past use of alcohol and other substances of abuse, including abuse of prescription medications [236,237]. Toxicology screening in cases where there are concerns about substance use or abuse has been recommended [238,239]. Even in the absence of a formal substance use disorder diagnosis, evaluators should assess current patterns of intake, as substance use that does not meet criteria for abuse or dependence may still be relevant to surgical outcome. For instance, a patient who is smoking marijuana frequently may not meet criteria for substance abuse or dependence, but regular use of marijuana increases risk of surgical mortality, postoperative marginal ulcers, and infection [239].History of substance abuse and or dependence should be considered when planning for perioperative pain control interventions, as some case reports have described narcotic addictions in post-WLS patients [240,241]. Surveys of WLS practitioners find nearly unanimous agreement that current substance abuse or dependence is a contradiction for surgery [2,32,33], and this is also reflected in various practice guidelines [4,7,11].

Since individuals reporting current problematic substance use behaviors are typically screened out of the WLS process, it is not clear whether current substance abuse and or dependence at the time of surgery influences long-term weight outcomes, but concerns would remain regarding substance use after surgery in these patients. A recent large, prospective, multisite study found that problematic substance use behaviors (alcohol use disorder symptoms, recreational drug use, smoking) at or near the time of surgery is associated with a higher risk of developing alcohol use disorder symptoms within the first 1–2 years after surgery [30]. At the same time, that and other studies have found that some individuals who are overusing alcohol before surgery decrease or cease their use afterward [30,242].

Individuals who have successfully achieved durable remission from substance abuse and/or dependence in the past, however, do not seem to be at greater risk for relapse or other untoward consequences after surgery. In 2 studies, a presurgical history of treatment for or successful cessation of substance abuse and or dependence was associated with greater postsurgical weight loss [86,243]. It may be that such individuals benefit from their history of making difficult, comprehensive, and sustained behavior changes [243]. Thus, a history of past (i.e., fully remitted) substance abuse or dependence, in and of itself, should not be considered a contraindication for WLS. However, the evaluator should take into account the duration of recovery. The highest risk for relapse to substance use occurs within the first year of sobriety [244], and many programs require evidence of at least 1 year of abstinence before surgery in patients with a recent history of substance abuse or dependence [86,165,238,243].

An increasing number of empirical reports have noted a risk for problematic substance use and other "compulsive" behaviors after WLS, particularly the misuse of alcohol, which may occur even in patients with no such history in the past [30,242,245–250]. Therefore, all prospective WLS patients, regardless of current or past substance use history, should be educated about the risk of developing problematic substance use and other behaviors after surgery [238,251]. Recent AACE/TOS/ASMBS guidelines advocate complete abstinence from alcohol after RYGB for individuals at particularly high risk for alcohol abuse after surgery [4] and monitoring for substance misuse should continue throughout the long-term postoperative period for all patients. Preliminary research has identified a few preoperative factors associated with elevated risk for postoperative substance misuse, which include male gender, younger age, smoking, frequent or problematic alcohol use at the time of surgery, and recreational drug use [30].

Smoking. Recent AACE/TOS/ASMBS guidelines recommend smoking cessation before surgery [4], which is a standard policy at many surgical programs. Patients should be educated about the risks of smoking after certain WLS procedures, including impaired wound healing, infection, marginal ulcers, and pneumonia [4,252–255], and encouraged to quit smoking as part of preparation for surgery. The evaluator should suggest resources to aid the patient in smoking cessation efforts.

Adherence. Patients should be well-informed, motivated, and willing to engage in the necessary postoperative dietary and behavioral changes [4,5,8,11]. Numerous studies have established that adherence to postoperative medical appointments and behavioral recommendations has a significant impact on postsurgical outcomes [151,256–264]. Examining past adherence behaviors (e.g., attending appointments, taking medications as prescribed, continuous positive airway pressure use, etc.) provides the best available estimate of the likelihood that the patient will demonstrate adherence after surgery [22]. In addition, the possible link (previously noted) between the traits of conscientiousness and perseverance and WLS outcome is likely largely due to the impact of these traits on patient adherence [193]. The goal of examining adherence history is to identify potential barriers to adherence and to formulate interventions that will improve adherence after surgery. When the evaluator has concerns about adherence, he or she should recommend

interventions such as providing psychoeducation around the rationales behind specific behavioral recommendations, motivational interviewing, utilizing behavioral problem-solving strategies to overcome barriers to adherence, extra intervention by the team dietitian, or enlisting the help of a relative or friend to facilitate adherence.

Physical activity. A brief overview of the patient's current physical activity habits is generally conducted [19]. Structured exercise routines and lifestyle activity are assessed. Studies have consistently found that post-WLS physical activity level is related to better weight loss outcomes [265–268] and quality of life [269]. However, despite self-report of large increases in physical activity after surgery, objective measurements suggest that most patients do not make substantial changes in exercise after surgery [270,271]. For a variety of reasons, individuals seeking WLS generally participate in low levels of physical activity [272–275]. The evaluator should examine the specific physical, logistical, and psychological barriers that limit the patient's physical activity (e.g., musculoskeletal pain or self-consciousness about exercising in public) to inform strategies for facilitating consistent physical activity before and after surgery [22,276].

Patient motivation and knowledge

Weight loss expectations. Although research has established that patients almost universally hold unrealistic expectations about how much weight they will lose after WLS [277–283], it has also been found, for both non-surgical and surgical weight loss treatment, that these unrealistic expectations are highly resistant to change, even with explicit patient education [277,284]. Existing data, primarily from the behavioral weight loss literature, are mixed regarding the impact of weight loss expectations on actual weight loss outcomes [283,285–291]. However, it remains important to educate patients about the typical weight loss outcomes for the various WLS procedures, both for purposes of informed consent[12,185,279,292] and because unrealistic expectations may lead patients to accept a greater degree of surgical risk than they would if expected weight loss was lower [293]. Existing practice guidelines generally recommend evaluation of and education about postsurgical weight loss expectations, including discussion of the potential for weight regain in the long term [4,8,11,12]. Such a discussion should also include information about the likelihood that patients losing significant amounts of weight will also develop excess skin as a result [294], which may be distressing and or interfere with everyday functioning [29,295–300]. This is a particularly important discussion to have with patients who already exhibit significant body image distress before surgery and who have expectations that losing weight will allay that distress.

Motivation. Overwhelmingly, health concerns have been identified by patients as the predominant motivating factor for pursuing surgical intervention for weight loss [215,281,301,302]. Patients' reasons for pursuing WLS have not been consistently linked to surgical results. Nevertheless, it remains important to assess whether the patient holds unrealistic expectations about the degree to which weight loss will change their lives or resolve pre-existing psychosocial problems [21] and to provide psychoeducation around this topic when indicated.

Knowledge of surgical procedures, risks, and benefits. Existing practice guidelines note that patients should be well-informed about the various surgical procedures, their risks and benefits, and the postoperative behavioral regimen [4,5,8,11,12]. Although most patients are able to verbalize an understanding of the benefits of surgery, there can be a tendency to overlook or minimize the risks associated with WLS and the scope of the requisite behavior changes. It is important for patients to understand that the outcome of surgery is variable and strongly dependent upon consistent implementation of the recommended lifestyle changes. They should also be able to verbalize an understanding of the need to be an active participant in one's own care and a commitment to adhere to the postsurgical regimen [21,303]. When indicated, the evaluator may suggest specific interventions to remediate knowledge gaps. For example, the patient may be encouraged to attend a support group, review online material, or complete recommended readings.

Psychometric testing

Between one half and two thirds of practitioners report using psychometric testing instruments in their bariatric evaluation protocols, with specific instruments varying widely [2,32,33]. Psychometric testing may yield more comprehensive data regarding personality traits and psychopathology that may not be directly obtained through a clinical interview, but which have been linked to postsurgical weight loss and other surgical outcomes [304,305]. Thus, testing may contribute to a broader and more comprehensive clinical impression. Some instruments include one or more indices of the validity of the patient's responses to test items. This is an important consideration, given the tendency of some patients to present themselves in an overly positive manner and/or minimize psychological distress due to the belief that this will make it more likely that they are recommended for surgery [306–308]. There is research to support a higher likelihood of disclosure of problematic behaviors when responding to a questionnaire in a face-to-face interaction with a provider [307].

The ASMBS is an educational professional surgical society that does not endorse any for-profit companies, including companies that produce specific psychometric tests. Therefore, recommendations for specific tests are not

provided here. When considering whether to include psychometric measures in the evaluation protocol, a number of factors should be considered, such as:

- The general reliability and validity of the measure [306] (i.e., how accurately and consistently the instrument measures the intended construct), including administration with ethnically and racially diverse patient populations
- The existence of empirically established, bariatric-specific norms for the instrument
- The empirical evidence demonstrating a relationship between the instrument and various facets of surgical outcome
- The relevance of the domains assessed by the instrument to the WLS process
- The degree to which the measure is subject to self-report bias and the inclusion of indices of patient response validity
- The burden of time, personal intrusiveness, and/or cost that the measure imposes on patient, program, and/or clinician
- The amount and incremental value of additional information that the measure will provide beyond what can be readily and reliably obtained during a clinical interview

Ultimately, it is the responsibility of the behavioral health provider to use sound clinical judgment based on thorough knowledge of the current bariatric literature and to work collaboratively with the surgical program in the development of protocols that take into account patient, payor, and program requirements and resources. As in any psychosocial assessment, conclusions and/or recommendations should not rely too heavily on any one source of information, including testing data [306].

Qualifications of the evaluator

Behavioral health professionals are, by virtue of their specialist training, most qualified to assess behavioral, emotional, psychosocial, and psychiatric domains. The psychosocial evaluation of WLS patients should be conducted by an individual who is professionally credentialed (e.g., licensed) in a recognized behavioral health discipline (e.g., psychology, social work, psychiatry, psychiatric nursing, etc.). Furthermore, because this evaluation assesses a number of domains that are not part of a standard psychosocial assessment, it is recommended that the evaluator also possesses specialized knowledge, experience, and training relevant to obesity, eating disorders, and WLS [7,11,19,33,109,277,309]. In the absence of specialized knowledge, experience, and training, behavioral health practitioners conducting WLS evaluations are advised to do so under supervision from an experienced provider who has the appropriate background to guide the evaluator's work in this area.

Written report

At a minimum, the evaluator's report should include a brief summary of the relevant findings of the interview and, when applicable, other sources of clinical information. Most importantly, the report will include requirements and/or recommendations based directly on the findings of the evaluation. These may include, when applicable, suggested pre- or postsurgical interventions designed to minimize barriers to optimal psychosocial and medical outcomes after surgery [306]. For instance, rather than simply noting that the patient has severe depression, ideally the evaluator will recommend specific steps to be taken or interventions that should take place to ensure that the patient's mood symptoms do not interfere with postsurgical self-care and behavioral adherence or pose a risk for self-harm. Ideally, recommendations will be specific, with a clear delineation of what must occur before the patient will be ready to proceed with surgery. Collaboration with the multidisciplinary team of providers caring for the patient is widely considered a standard of care. Discussing this process directly with the patient and documenting the active collaboration among team members is recommended.

Behavioral health monitoring after WLS

Given the importance of long-term follow up after WLS, the preoperative psychosocial assessment provides a valuable opportunity for patients to establish a trusted connection to a behavioral health provider as an additional resource and integral participant in their postoperative care. The need to ensure that postoperative psychosocial care is available has been noted in established practice guidelines [7,8,11], and evidence suggests that such care is associated with better outcomes after surgery [199]. As discussed previously, a number of adverse outcomes have been documented, including nonadherence to the postoperative regimen [54,90,126,127,151,261,264,310,311], insufficient weight loss [312], weight regain [59,72,264,313–316], eating disturbances [40,45,67,68,71,72,93], problems with addiction [30,241,242,245,249,250], and, in extreme circumstances, even suicide [31,139,140]. Even in the absence of severe adverse outcomes, postsurgical psychosocial involvement may assist patients in the complex and dynamic process of behavior change by supporting health behavior change and sustained adherence to the postoperative regimen in the long term [69]. Psychosocial factors are more likely to affect outcomes beyond the first year after surgery, when the biological and mechanical effects of surgery wane and behavioral factors thus become more influential [113]. Furthermore, postoperative improvements in quality of life, psychosocial functioning, and psychiatric symptoms have been observed to deteriorate over time [133,317]. Provision should be made for long-term psychosocial follow-up of WLS patients [26,57,63,115,267,318–324], and the plan for

this follow-up care should be defined before surgery. How this is achieved, however—through in-house behavioral health services, support groups, or monitoring by surgical staff and referral to appropriate providers when needed—will depend upon the resources of individual surgery practices.

Conclusions

Psychosocial factors and adherence to the recommended postoperative dietary and lifestyle regimen have significant potential to affect postoperative outcomes. Thus, it is recommended that bariatric behavioral health clinicians with specialized knowledge and experience be involved in the evaluation and care of patients both before and after surgery. The evaluating clinician plays a number of important roles in the multidisciplinary treatment of the bariatric patient. Central among these is the role of identifying factors that may pose challenges to optimal surgical outcome and providing recommendations to the patient and bariatric team on how to address these issues.

Disclosures

The authors have no commercial associations that might be a conflict of interest in relation to this article.

Disclaimer

The American Society for Metabolic and Bariatric Surgery (ASMBS) is established as an educational professional medical society. These recommendations are based on expert opinion and literature review of empirical and clinical data with a varying level of evidence; they are offered only as suggestions and are not intended to establish a local, regional, or national standard of care for the presurgical psychosocial assessment of patients seeking weight loss surgery (WLS). Although the ASMBS views these recommendations as being important to the patient selection process and the multidisciplinary provision of high-quality patient care, it does not warrant, guarantee, or promise that compliance with these recommendations will ensure positive surgical outcomes for any specific program or patient. It is the responsibility of the individual behavioral health provider and the bariatric surgery program to determine appropriate psychosocial assessment protocols for patient selection. These recommendations should be used in conjunction with best clinical judgment, the current empirical literature, and in consideration of the resources available regionally to the surgical program and to the individual patient.

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