

Quality of life and psychological well-being in obesity management: improving the odds of success by managing distress

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SUMMARY

Background: Obesity is increasing in prevalence and placing an ever-greater burden on individuals and healthcare resources alike. Obesity management is complex and, for many, elusive. **Aims and methods:** This paper reviews the major factors that influence psychological well-being in individuals with obesity and describes the means by which their impact on distress and other aspects of quality of life (QoL) can be quantified. The goal is to enable healthcare providers to set reasonable, achievable, maintainable weight loss targets that will improve the psychological well-being and QoL of individuals living with obesity. PubMed and Web of Science searches were conducted to identify literature that addresses the key question: How can distress over obesity be measured and taken into account when tailoring weight loss interventions for a particular patient? **Discussion and conclusions:** 'Distress over obesity' is a key parameter that illustrates the psychological consequences of excess weight. Healthcare providers can draw on a range of obesity-specific and non-specific assessment tools to quantify distress as well as the other contributions of obesity to QoL and mental/emotional health. When physicians consider the psychological/QoL aspects of obesity and how these change with successful weight loss, it becomes possible to set achievable, realistic weight loss goals and develop a manageable plan to achieve them. Any future developments that make it easier to achieve these goals should be made widely available to all patients in need, in order to help them turn a vicious cycle of failure into a virtuous cycle of success.

Review criteria

- PubMed searches were conducted for papers relating to distress over obesity, quality of life scales and the QoL/psychological impact of weight loss interventions. Forward searches on key papers were conducted through Web of Science.
- With preference given to peer-reviewed, randomised trial data, literature was selected to answer the key question: How can distress over obesity be measured and taken into account when tailoring weight loss interventions for a particular patient?

Message for the clinic

In order to set achievable, realistic goals and develop a manageable plan to achieve them, physicians should evaluate and consider patients' distress over obesity and expectations about weight loss and associated QoL changes.

Introduction

Obesity: a growing health concern

Obesity is rapidly becoming one of the most important health concerns in developed countries worldwide. In Canada, the proportion of adults meeting the accepted criterion for obesity [Body mass index (BMI) ≥ 30 mg/m²] has more than doubled over the past 40 years, from 10% in 1970 to 26% in a 2009/2011 survey (1). Similar increases in rates of overweight and obesity ('abnormal or excessive fat accumulation that may impair health') have been observed in other industrialised countries (2).

The increasing prevalence of obesity places significant burdens on individuals and healthcare systems. Obesity is a risk factor for numerous medical conditions, including endocrine/metabolic disorders, certain cancers and cardiovascular disease (3,4). More than half of cases of type 2 diabetes and more than a third of

pulmonary embolisms are attributed to obesity, as are many cases of gallbladder disease, colorectal and pancreatic cancers, osteoarthritis and chronic back pain (3).

As a result of the primary effects of obesity and the health impact of these comorbidities, overall and cause-specific mortality increases with BMI in the obese range. Meta-analysis of prospective studies from North America and Western Europe suggests that a BMI between 30 and 45 confers a 2- to 10-year decrease in life expectancy; individuals with a normal BMI had almost an 80% chance of living to age 70, compared with ~60% with BMI 35–40, and ~50% with BMI 40–50. Much of this excess mortality was attributable to obesity-related complications including vascular causes, diabetes, and kidney or liver disease (5). Clearly, the management of obesity is of great clinical importance.

In addition to its clear clinical effects, obesity carries a substantial burden in personal terms, as

measured by reduced daily functioning, and by general, health-related and obesity-specific quality-of-life (QoL) metrics. Individuals living with obesity are subject to considerable stigma, which they may internalise and experience as shame, depression and anxiety (6,7). As argued below, patient affect is intimately connected to the success or failure of weight loss interventions and therefore needs to be acknowledged by clinicians and dealt with as part of a weight management programme. Here, I focus on one crucial dimension of this psychological burden, namely distress over obesity, which should be understood as the degree to which an individual is concerned and unhappy about his/her body and the impact of excess weight. I also introduce tools for evaluating a patient's experience of distress and offer suggestions about effective use of these tools in the clinical setting.

Obesity management means behaviour change

As obesity is a chronic and often progressive condition, its management requires long-term behavioural change (8–10). Indeed, for all obesity intervention strategies (i.e. behavioural interventions, medication and surgery), an individual's commitment to new habits and practices is crucial to success. Behavioural intervention requires the individual to implement new behaviours and maintain them after initial weight loss is achieved (8,10). Maintenance of behaviour change continues to be an issue even when other strategies are introduced. Currently available pharmacological treatments generally do not stand alone, but are used as part of an integrated strategy that includes behaviour change (11,12). Medication adherence is a key behaviour that determines treatment success. Indeed, even with bariatric surgery, long-term success in maintaining weight loss is influenced by behaviour postsurgery (e.g. emotional eating), and, in some cases, by the steps taken ahead of surgery to prepare for the procedure (13,14). Thus, in all cases, it is essential to help the patient adopt the new behaviours (e.g. healthy eating, physical activity, medication adherence, protein supplementation following surgery) as part of their normal routine (8). Both in primary and specialty care, these efforts should be tailored to the patient's strengths and barriers, with a clear understanding of the distress that he or she experiences as a result of obesity.

Methods

Literature on psychological and behavioural issues in obesity treatment was queried using the following PubMed search terms: “distress over obesity”, “psychological/behavioural/social mediators of obesity”, “obesity-specific quality of life scale” and the major

weight management strategies (surgical, behavioural modification, pharmacological) along with “QoL” or “psychological impact”. For key papers, a forward search was conducted through Web of Science to identify additional literature building on relevant concepts.

Obesity and psychological health – a complex, bidirectional relationship

Psychological, social and behavioural mediators of obesity

The relationship between excess weight and psychological well-being is complex, encompassing physical, social and psychological factors (Figure 1) (15). Furthermore, this relationship is bidirectional: living with obesity impairs QoL and increases the risk of psychiatric and affective disorders; conversely, patients with psychological troubles may become obese as a medication side effect and/or because they use food as a coping strategy (15–20). Many individuals living with obesity experience self-blame, low self-esteem, and general negativity towards themselves and their situation (15). Managing distress over obesity has the potential to directly improve QoL and indirectly affect health behaviours such as treatment adherence. For this reason, distress should not be regarded as strictly a matter of mental health, but rather as a critical factor in successful long-term weight management.

The social aspects of obesity play important roles in distress over obesity. One of the most damaging is stigma, which in many cases is both external (i.e. stemming from others) and self-directed. Pervasive negative attitudes towards people who are obese pose a significant challenge to individuals' access to employment, education, social opportunities and healthcare (6). Many individuals living with obesity internalise these feelings of stigmatisation and feel shame or distress about their own size and habits; this can contribute to low self-esteem, impaired work and social life, and diminished overall psychological well-being (21).

Behaviours strongly tied to psychological and motivational attitudes also have a significant impact on weight loss outcomes. Many individuals with obesity get stuck in a cycle of ‘yo-yo dieting,’ where any weight lost with a given intervention is soon regained. This cycle can be mediated for many by the distress associated with not achieving either the desired amount of weight loss or the desired body shape (22). These experiences often colour the patients' attitudes towards and persistence with any future management strategies (9), especially as QoL may ‘yo-yo’ along with weight (23). For individuals

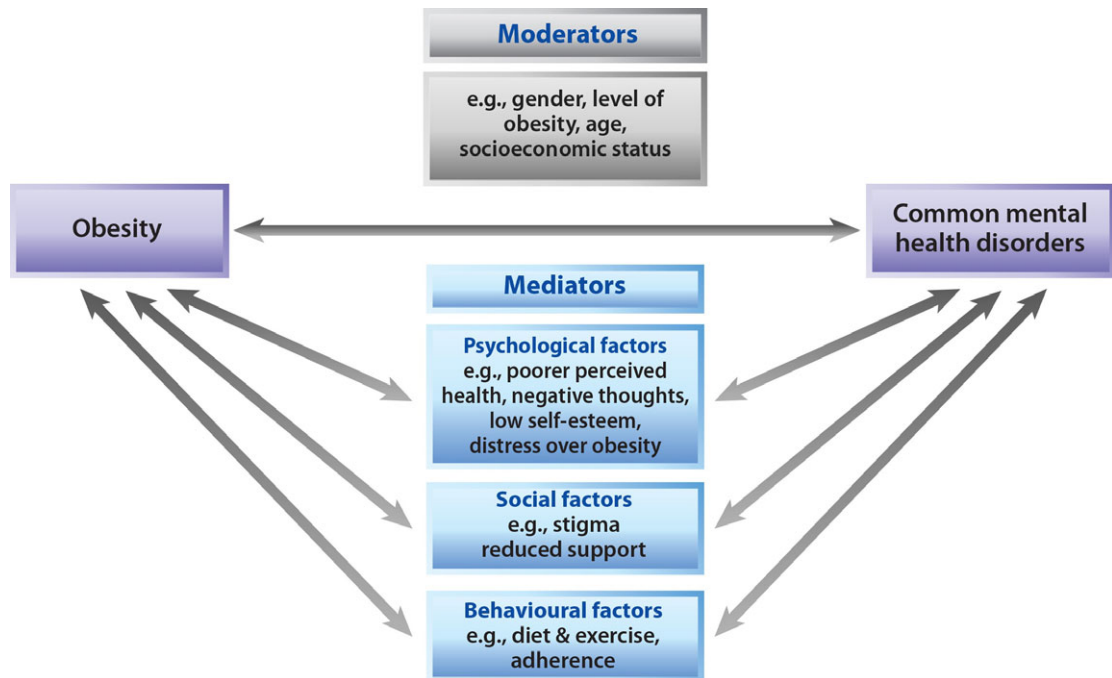


Figure 1 A model of the moderating and mediating psychological factors that contribute to the relationship between obesity and well-being (Adapted from Gatineau and Dent (15))

with obesity-related conditions causing pain or mobility restrictions (e.g. osteoarthritis, cardiovascular disease, chronic back or joint pain), physical disability may contribute to a vicious cycle of inactivity, depressed mood and further weight gain (19,24,25).

Distress over obesity: a key mediator to appreciate and quantify

Distress over obesity is both a contributor to and a result of obesity, influences self-esteem and the individual's motivation to initiate and maintain behavioural changes (21,26,27). As a general principle, it would be prudent for healthcare providers to assess the degree of negative impact of living with obesity on psychological functioning. Physicians can choose scales based on the relevance of the content of the scales (e.g. psychological distress vs. functional interference) to the clinical context.

In particular, scales that evaluate distress over obesity can contribute valuable insight into patients' emotional experience of their condition and how it could motivate them to initiate and maintain change. A diverse set of scales can be used to evaluate the impact of obesity on patient function and QoL (Table 1), some designed specifically for use in people with obesity and/or studied and validated in this patient population. Of these, two validated tools are particularly useful for gauging distress over obesity and are brief and easily introduced into clinical care.

The Obesity Adjustment Survey (OAS) is a brief questionnaire designed for use in primary and specialist care to focus specifically on an individual's level of distress over obesity (Table 2). This tool was developed and validated in a morbidly obese population [either ≥ 100 lbs (45 kg) over ideal weight or 100% over ideal weight)], and can assess individuals' overall distress levels at any point. When used to track QoL impacts of interventions (26), the tool's value is most evident in management. For instance, asking a patient to complete the OAS provides valuable information that the physician can share with the patient. Educating the patient about distress over obesity and supporting the patient in pursuing methods to achieve a healthier weight and address issues of obesity distress enables the physician to apply the self-management support perspective – the dominant model in chronic disease management (28). As exemplified by large-scale campaigns such as Dove's Campaign for Real Beauty and Movement for Self-Esteem (29), a patient with low self-esteem can be encouraged to resist comparing herself to societal norms.

A second tool, the IWQOL-Lite (Impact of Weight on Quality of Life-Lite), also incorporates a measure of distress over obesity. The IWQOL and IWQOL-Lite have been validated in an overweight population and are commonly used in trials of weight loss interventions to assess public distress, as well as physical

Table 1 Scales for evaluating QoL in patients with obesity

Scale	Reference	Key parameters measured
Scales incorporating measures of distress over obesity		
Obesity Adjustment Survey (OAS)	Butler et al. (26)	Distress over obesity
Obesity-related Coping (OCQ) and Obesity-related Distress (ODQ) questionnaires	Ryden et al. (70)	Distress over obesity, coping mechanisms
Impact of Weight on QoL, short version (IWQOL-Lite)	Kolotkin et al. (30)	Five domains: physical function, self-esteem, sexual life, public distress, work
Quality of Life, Obesity and Dietetics (QOLOD)	Ziegler et al. (34)	Based on IWQOL-Lite, with questions added specific to French culture and experiences
Laval Questionnaire	Therrien et al. (33)	Six domains: symptoms, activity/mobility, personal hygiene/clothing, emotions, social interactions (including public distress), sexual life
Scales assessing other aspects of psychosocial well-being related to obesity		
LEWIN-TAG questionnaire	Mathias et al. (71)	Wide range of global and obesity-specific domains
Obesity-specific QoL instrument (OSQOL)	Le Pen et al. (72)	Four domains: physical state, vitality, social interactions, psychological state
Bariatric Analysis and Reporting Outcome System (BAROS)	Oria et al. (73)	Developed specifically for bariatric surgery patients; QoL dimensions include self-esteem and daily activities
Obesity-related Well-being Questionnaire (ORWELL 97)	Mannucci et al. (74)	Psychological status, social adjustment, physical symptoms
Obesity and Weight-loss QoL questionnaire (OWLQOL) and Weight-related Symptom Measure (WRSM)	Niero et al. (75)	Two questionnaires intended to be used together to measure presence and impact of obesity symptoms on QoL
Obesity-related Problems Scale (OP)	Karissou et al. (76)	Psychosocial functioning
Moorehead-Ardelt QoL instrument (MAQOL)	Moorehead et al. (77)	Six domains: self-esteem, physical well-being, social relationships, work, sexuality, eating behaviour
Health-related QoL (HRQL)	Mathus-Vliegen et al. (50)	General well-being, health distress, depression, self-esteem, physical activities, social activities
BQL	Weiner et al. (78)	Developed specifically for bariatric surgery patients; includes QoL and symptom-related scales
Weight Bias Internalization Scale (WBIS)	Hilbert et al. (79)	Assesses extent to which patient has internalised weight-related stigma
Bariatric and Obesity-Specific Survey (BOSS)	Tayyem et al. (80)	Developed specifically for bariatric surgery patients; six domains: incapacity, work and well-being, social function, appearance and health, eating patterns, sexual health

Table 2 The 20 items of the Obesity Adjustment Survey, Short Form (OAS-SF)

1. I am so unhappy that I am too big to exercise as I would like to
2. I avoid showing my body to my partner or close friend
3. I cannot walk even short distances without becoming short of breath and getting very tired
4. I do not avoid public situations like going to stores, parties, or the beach because of my present weight
5. If I stay at the weight I am now, I will probably die sooner than if I weighed less
6. Walking up stairs is especially difficult at my present weight
7. My partner (or close friend) doesn't understand what I go through being overweight
8. I always find a way to eat my favourite foods
9. I avoid looking at my body in a full-length mirror because of my present weight
10. I hate the appearance of my body
11. I believe that being at my present weight is one of the worst things that could happen to me
12. My present weight prevents me from doing social activities that I would enjoy
13. My present weight prevents me from moving around freely
14. I feel more comfortable around people who are overweight than those who are not
15. My sex life would be a lot better if I lost weight
16. I am fat and ugly
17. I am disgusted by my fascination with food
18. I believe that being at my present weight is a sign of personal weakness
19. It is depressing to be at my present weight
20. As a child, I was very inactive and avoided sports or exercise at school

Items are scored on a 5-point Likert scale where 1 = not at all true, 2 = a little bit true, 3 = somewhat true, 4 = moderately true, 5 = extremely true. Items 1, 4, and 17 are reverse scored. Permission from Butler et al. (26).

functioning, self-esteem, sexual life and work life (30,31). Their validity and applicability in patients with comorbid psychiatric disorders have also been established (32). Elements of the IWQOL – including assessment of public distress – have also been incorporated in other obesity-specific QoL tools, including the Laval Questionnaire (33) from Canada and the QOLOD scale (34) from France. A systematic review of obesity-specific QoL scales can be found in Stucki et al. (35).

It bears mentioning that there are many other QoL scales that provide an overall snapshot of psychological well-being, not tied to obesity or other particular conditions. Some such non-specific scales (e.g. the SF-36 (36) and the Beck Depression Inventory (37)) have been validated in obese populations. Although they are not designed to highlight drivers of obesity-related distress (31), these more general scales can be useful in screening for psychopathology or overall QoL. In such circumstances, if a person were to be screened as a 'case', the physician would need to explore the extent to which obesity determines or contributes to the symptoms identified.

Qualitative patient research

Additional insights into the lived experience of obesity can be gained through studies that take a qualitative approach to describing patients' experiences in living with obesity. In this area, the DAWN/DAWN2

(Diabetes Attitudes, Wishes, and Needs) studies in individuals with type 1 and type 2 diabetes may serve as a useful model (38,39). These studies collected patients' self-reports regarding their levels of diabetes self-management, their experiences of distress in dealing with their condition, the quality of their relationships with healthcare providers and their satisfaction with treatment. Study populations included a high proportion of individuals with type 2 diabetes, most of whom were overweight or obese (8). In the Canadian arm of DAWN2, over 80% of obese respondents reported feeling very anxious about their weight; high levels of concern over weight were associated with lower self-rated health, more diabetes-related distress, poorer psychological well-being and higher rates of psychological treatment compared with patients who were not distressed about their weight (40). Significant negative correlations were found between BMI and all QoL indicators, including self-reported health status (EQ-5D VAS), overall QoL (WHO-QOL-BREF) and psychological well-being (WHO-5). The questions and themes explored in DAWN/DAWN2 and the preliminary findings in the subpopulation of overweight respondents provide a framework that could easily be extended to the general population of individuals living with obesity, to provide a more comprehensive picture of the psychosocial implications of excess weight – in particular, psychosocial factors including distress over

obesity, and the impact of weight management interventions on psychological well-being.

Obesity management in clinical practice

Impact of weight management strategies on distress over obesity

As excess weight can have a significant and multi-faceted impact on psychological well-being, interventions leading to or helping maintain weight loss can improve various aspects of QoL. In trials of surgical and non-surgical methods, weight loss is associated with improvements in overall scores for validated QoL instruments (e.g. SF-36, IWQOL-Lite) and in key subscales related to physical well-being and public distress (13,41–51). Behavioural interventions and bariatric surgery have also been shown to moderate distress over obesity along with depressive symptoms (13,46,47,51).

The relationship between weight management and the key psychological parameter of distress over obesity is particularly illuminating, in that it has evolved along with our understanding of how best to assess the impact of obesity on patients' psychological well-being. In the past, patients with the greatest psychological burden (obesity-related and otherwise) were specifically excluded from surgical and behavioural treatment (52,53). The introduction of QoL scales specific to the concerns and circumstances of the obese population has allowed us to broadly stratify subjects into three groups (high, moderate or poor functioning) and compare outcomes after surgical or other management. We now know that baseline distress level does not affect the degree of weight loss achieved with bariatric surgery, and that patients in the most distressed group can see a normalisation of their distress scores to levels similar to those in higher functioning groups (48). The exclusion of patients with lower function at baseline was therefore based on a misunderstanding, and we now appreciate that obesity treatment should not be withheld because of psychological burden; indeed, doing so can be considered a form of obesity bias.

Limitations of the 'minimally clinically important difference'

The relationship between the degree of weight loss and improvements in QoL (including psychological well-being) is a subject of considerable debate. While some studies have suggested that the relationship is linear, in that a greater amount of lost weight yields a greater improvement in psychological well-being (44), other analyses have found that surgical and non-surgical interventions can produce QoL benefits,

regardless of the degree of weight loss (46,47). In particular, interventions that incorporate cognitive-behavioural strategies appear to improve depressive symptoms independently of weight loss, by encouraging self-acceptance and self-esteem (47).

The question of how much weight patients need to lose in order to experience improvements in psychological well-being has been further complicated by a recent analysis (54). For many of the available QoL scales, the developers have calculated a 'minimal clinically important difference' score (MCID) – that is, the number of points of improvement (or deterioration) on a particular scale that a patient would have to experience to show a noticeable change in QoL. A recent study sought to define how much weight individuals living with obesity would have to lose to achieve these predefined MCIDs on the IWQOL-Lite and several non-obesity-specific QoL scales. The findings showed that in order to achieve a clinically significant change, as defined by the MCIDs, subjects had to lose anywhere from 9% to 25% of their starting weight, depending on the QoL scale used. This degree of weight loss was routinely achieved over the 2-year study by patients undergoing bariatric surgery, but seldom by those who underwent behavioural/diet counselling only (54). However, it should be noted that the only obesity-specific scale evaluated was the IWQOL-Lite and the scores on its subscales were not analysed; this could have masked important effects on specific concerns such as public distress. The MCIDs for the general QoL instruments have been calculated primarily in chronic medical conditions, where physical symptoms are treated with specific medications and a direct link can usually be made between the treatment effect (i.e. symptom relief) and QoL. Conversely, the links between obesity interventions, weight loss and psychological effects are more complex and indirect, and it is possible to improve self-image and outlook independently of weight loss. For all these reasons, it is likely that the extent of weight loss required to achieve an 'important clinical difference' was overestimated in this study.

While the concept of MCID is reasonable in certain situations, it is not likely that this construct can be validly assessed until subjects' expectations regarding weight loss can be brought into line with what is realistically achievable.

Setting appropriate expectations

A key factor for success in weight management is the setting of realistic, measurable targets for the magnitude and rapidity of weight loss. Indeed, this is a core element of the '5A's' model of behavioural change (Ask, Assess, Advise, Agree, Arrange), an

established framework that can be adapted for obesity management (8): the fourth 'A' consists of Agreement between healthcare providers and patients about key elements of the plan, including weight loss expectations and the sustainable behavioural changes required to reach those goals (55). Unless appropriate expectations are set, patients are likely to continue to experience distress over obesity when their expectations for weight and shape are not realised (56).

Setting reachable goals is particularly important because many individuals with obesity have unrealistic expectations about the amount of weight they can hope to lose. In a classic study from 1997, subjects defined their 'ideal weight loss' as an average 32% reduction in their starting weight, and most patients said they would be 'disappointed' with a 17-kg weight loss; a 25-kg loss would be considered 'acceptable' but not ideal (57). While this magnitude of weight loss may be possible for some patients undergoing bariatric surgery, not all surgical patients will achieve or maintain these types of improvements. Furthermore, these expectations are not accurately reflective of the weight loss potential of the currently available non-surgical methods (e.g. behavioural interventions with or without adjunctive pharmacotherapy).

In many cases, excessive weight loss expectations and patients' perceptions of unsatisfactory progress towards those over-ambitious goals can lead to treatment discontinuation and failure to achieve or maintain an appreciable level of weight loss (58). Additionally, individuals who report lower overall psychological well-being (as assessed by the mental health scales of the SF-36) before starting their weight loss intervention tended to have still higher – and thus less reasonable – expectations about the degree to which weight loss would improve their QoL (59).

It is therefore important for healthcare providers to help their patients ground their expectations in reality and avoid 'making the perfect the enemy of the good.' Patients should be encouraged to appreciate that the clinical benefits of weight loss (including effects on comorbidities such as cardiovascular disease and diabetes) actually begin in the range of 5–10% loss of starting body weight (60,61). This degree of weight loss is easier to achieve than patients might expect (62), and setting relatively modest weight loss targets in this range will increase the odds of success (9). Furthermore, patients who meet their own expectations with regard to the QoL effects of weight loss report greater improvements in overall well-being than subjects whose expectations are not met (59).

Another important aspect to consider, apart from the absolute weight loss in kilograms, is the issue of body shape and body satisfaction. Individuals with

obesity who are hopeful that they will achieve the body shape they most desire (e.g. turning a pear shape into an hour-glass shape) are likely to be disappointed. Interventions based on the approaches of 'health at every size' are likely to help individuals with obesity to set reasonable expectations and successfully achieve their weight management goals (63).

Setting achievable weight loss goals has several important benefits for both physicians and individuals with obesity. First, it shifts the focus of weight management from weight loss towards stopping regain. Second, once an individual develops confidence in his or her ability to maintain previously lost weight, it becomes possible to set another achievable weight loss goal. This process can lead to repeated cycles of realistic weight loss followed by behavioural adaptation to protect this new weight. With three to four of these cyclical initiatives, substantial overall weight loss would be possible over an extended period. Physicians can play a major role in supporting patients as they adopt this 'slow and steady' approach to sustainable weight management.

The current US (64) and Canadian (10) guidelines recognise that a modest loss of 5–10% of starting body weight is beneficial for most patients and that in most cases this goal should be achievable through a loss of 0.5–1 kg of body weight per week over a period of 6 months. The long-term goals should then be to maintain weight and avoid weight regain.

Unmet needs and future directions

To date, the most significant changes in distress over obesity and health-related QoL in individuals living with obesity have been achieved through bariatric surgery (41,43,46). However, in most countries surgery is available and appropriate for only a small proportion of individuals struggling with obesity; most guidelines limit its use to individuals with a BMI 40 or higher, or ≥ 35 if there is at least one obesity-related comorbidity (65). For many patients, behavioural interventions and/or pharmacological management will therefore play a dominant role, either on their own or as part of an integrated, multidisciplinary strategy. Obesity management guidelines support and recommend the use of multidisciplinary strategies, which combine behavioural approaches with pharmacologic or surgical interventions (64). With our ever-evolving understanding of the behavioural, psychological and motivational challenges of obesity and how they affect QoL, physicians have a growing range of options from which to personalise the weight management approach for each individual, to maximise the chances of success and offer the patient a greater sense of agency.

The role of medications in weight management is an evolving one. Although several pharmacological agents have been introduced in recent years, the options to date have been only modestly effective, and some have had significant safety concerns such that they have been withdrawn from the market (66,67). The pharmaceutical options currently available for long-term obesity management in Canada are orlistat (Xenical[®], Alli[®]) and liraglutide (Saxenda[®]) (68); the range of options in the United States is broader and includes these two medications as well as lorcaserin (Belviq[®]), phentermine/topiramate (Qsymia[®]) and bupropion/naltrexone (Contrave[®]). Medications could have an important role to play in an integrated weight loss plan, as a means to support and sustain the weight loss that patients achieve through behavioural changes.

Medications can enhance the impact of behavioural change in two specific aspects. First, if adding medication to behaviour change increases the magnitude of weight loss, this can be used as a motivational enhancement strategy. All behavioural choices are associated with potential benefits and pitfalls, or advantages and disadvantages (69). Increasing the amount of weight lost increases the advantages of engaging actively in weight management. In turn, this will directly help shift the decisional balance towards change. Adding medication to behaviour change can further reinforce this decisional balance as it clearly increases the advantages of change.

Second, increasing the amount of weight lost via behaviour change reinforces the value of those behaviours. In other words, people experience more pay-

off for their effort, which is positively reinforcing. Greater investment in the behaviours that produced the outcome increases self-efficacy, which, in turn, predicts longer maintenance of behaviour over time. This can increase the likelihood that positive health behaviours will be maintained after the medication for weight loss is stopped. Thus, truly integrating behaviour change and weight loss medication has the potential to potentiate both treatments and might mitigate weight regain following stopping the medication.

When physicians consider patients' distress over obesity and expectations about weight loss and associated QoL changes, it becomes possible to set achievable, realistic goals and develop a manageable plan to achieve them; this provides the framework to increase patient-centred obesity management. Any future developments – either in medical management options, behavioural techniques or other insights into the psychological factors behind weight loss success – that make it easier to achieve these goals should be made widely available to all patients in need, in order to help them turn a vicious cycle of failure into a virtuous cycle of success.

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