Psychological Determinants of Obesity Treatment Effectiveness: A Narrative Review of Current Scientific Evidence and Clinical Implications

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REVIEW

Abstract

Obesity is a chronic metabolic disease with a complex etiology, in which psychological factors play a pivotal role in shaping patients' lifestyle, including dietary behaviors, motivational aspects, and long-term treatment outcomes. Despite the increasing availability of dietary and pharmacological interventions, maintaining sustained weight loss remains a major clinical challenge, while the costs of treating comorbidities associated with obesity represent an increasing burden on healthcare system.

A review of current literature indicates that factors such as intrinsic motivation, high levels of self-efficacy, emotion regulation, and social support may increase the likelihood of maintaining treatment outcomes over time. Interventions based on cognitive-behavioral therapy, including third--wave CBT approaches, can facilitate adherence to dietary recommendations and promote sustainable lifestyle changes. An essential component of obesity management is the use of supportive and non-stigmatizing communication throughout every stage of patients care, particularly among healthcare professionals. Motivational interviewing appears to be a valuable tool for supporting therapeutical goals through the enhancement of patients' autonomous motivation. In addition, mindfulness-based approaches, including mindful eating practices, may benefit various domains of patients' lives.

The integrations of psychological components into the treatment of obesity enhances therapeutic effectiveness and increases the likelihood of long--term maintenance of treatment outcomes. In clinical practice, an interdisciplinary approach combining nutritional therapy, physical activity, psychological support, and, when necessary, pharmacotherapy and bariatric surgery is recommended. Appropriate, non-stigmatizing communication that respects the dignity of individuals living with obesity is essential. Further research is needed to explore the personalization of psychodietetics interventions according to patients' psychological profiles.

Keywords: obesity, weight management, cognitive-behavioral therapy, weight stigma, motivational interviewing, mindful eating

Introduction

Obesity is a chronic disease whose treatment poses challenges for both the healthcare system and patients themselves. In order to develop new, more effective therapeutic methods, it is essential to gain an in-depth understanding not only of the metabolic mechanisms but also of the psychological mechanisms underlying the development and relapse of obesity.

Objective

The objective of this review is to present the current scientific evidence regarding the psychological mechanisms influencing the development of obesity

and the effectiveness of obesity treatment, with particular emphasis on the role of motivation, self-control, social support, emotional regulation and psychological interventions used in treatment.

Methods

This article is a narrative literature review based on publications available in the PubMed, Scopus, and Google Scholar databases. The final literature search was carried out in July 2026. The article draws on literature published between 1996 and 2026.

The following keywords and their combinations were used in the search process: „obesity", „psychological factors", „weight loss", „motivation", „self-efficacy", „emotional eating", „cognitive behavioral therapy", „motivational inteviewing", „obesity treatment", „mindful eating", „stress in obesity", „obesity and depression", „genetics in obesity", „bariatric surgery", „binge eating", „weight-loss maintenance".

The review primarily included English-language meta-analyses, systematic reviews, randomised controlled trials, observational studies and selected clinical guidelines concerning the psychological aspects of eating behaviour, the obesity treatment and psychodietetic interventions in adults. Publications relating to the psychological mechanisms underlying changes in health-related behaviour – such as motivation, self-efficacy, emotion regulation and self-regulation processes – were also included, even if they did not directly concern the obesity treatment or nutrition.

Studies on emotional eating, binge eating, and mindful eating were also included, encompassing populations with normal weight, overweight, or obesity.

Selected Polish-language publications, public institution reports, and national guidelines addressing the epidemiology of obesity and the organization of healthcare in Poland were also used.

Studies conducted exclusively in paediatric populations, conference abstracts and papers not related to the psychological aspects of health behaviours, dietary behaviours and the obesity treatment were excluded.

Publications were selected based on their relevance to the main objectives of the study. Priority was given to studies of high methodological quality, recent publications and works of significant clinical importance.

The following main thematic areas were identified in the review:

1. Definition, prevalence and diagnosis of obesity,
2. Psychological and behavioural determinants of treatment adherence
3. Psychological factors associated with weight maintenance
4. Co-morbid mental health conditions and eating disorders
5. Weight stigma and the therapeutic alliance
6. Psychological interventions to support obesity treatment
7. Clinical implications and practical recommendations

Given the narrative nature of this review, no formal assessment was carried out of the methodological quality or the risk of systematic error in the included studies.

Definition, prevalence and diagnosis of obesity

Obesity is a common, chronic and recurrent non-communicable disease with multifactorial aetiology, characterised by an excessive accumulation of adipose tissue as a result of consuming an excessive calorie intake that exceeds an individual's requirements, which poses a significant risk to health, significantly increasing the risk of conditions such as type 2 diabetes, cardiovascular disease, strokes, certain cancers and mental health disorders[1]. Despite the fact that obesity was first classified as a medical condition in the International Classification of Diseases (International Classification of Diseases, ICD) in 1948, it is only in the last 30 years that people have begun to realise that obesity not only poses a risk for other diseases, but is also a fully-fledged medical condition in its own right[2]. Obesity is currently classified in the ICD-11 under code 5B81[3]. In recent years, it has been demonstrated that susceptibility to obesity may have a genetic basis and is attributable

to specific genetic variants, particularly in the FTO and MC4R genes, which play a key role in the body's fat storage and metabolism, energy balance, and the regulation of hunger and satiety[4].

The diagnostic criteria for obesity have traditionally been based primarily on body mass index (BMI), overlooking the role of adipose tissue distribution and function in the course of the disease. In order to address the lack of a precise diagnostic tool for obesity and to bring diagnostic standards into line with those adopted for other chronic diseases, the European Association for the Study of Obesity (EASO) has proposed a new diagnostic and therapeutic approach to obesity in adults[5]. Currently, the recommended approach to diagnosing obesity involves assessing the BMI (≥30 kg/m^2), an analysis of at least one anthropometric measurement of body fat (e.g. waist circumference, waist-to-hip ratio, or an abnormal waist-to-height ratio of ≥0.5), and an assessment of the patient's quality of daily independent functioning. In people with a BMI of over 40 kg/m^2, no further measurements are required to diagnose obesity. The new classification introduces a more comprehensive grading system for obesity, which distinguishes between clinical obesity and pre--clinical obesity. BMI remains a very good screening tool for assessing individuals and a fundamental tool for population-based assessment[6].

The rising proportion of people with obesity worldwide over recent decades has led to it being described as a pandemic[7]. It is estimated that by 2035, as many as 35% of men and over 25% of women in Poland will be affected by obesity[8].

Lifestyle-change interventions

The obesity treatment poses a huge challenge both for the health service and for society as a whole, and focuses primarily on lifestyle changes as the core therapeutic approach, incorporating personalised dietary interventions and physical activity, pharmacotherapy and, in some cases, surgical intervention.

Studies have shown that lifestyle changes can lead to an average weight loss of between 2 and 9% of initial body weight one year after the intervention, whilst increasing the likelihood of a further weight loss of 5% or more in the subsequent period. However, it is commonly observed that weight returns to its initial level, even in cases where treatment is continued[9]. Studies assessing the short-term impact of physical activity and diet on weight loss have shown that physical activity accounted for 20% of the weight lost, whilst the remaining 80% was primarily due to a reduction in energy intake from the diet[10]. It is worth noting that the body's energy requirements are closely linked to the patient's daily physical activity.

Pharmacotherapy for obesity

Given the difficulty of achieving effective and sustained weight loss through lifestyle modifications alone in patients living with obesity, pharmacotherapy is becoming an increasingly important tool in the treatment of this disease. The history of attempts to treat obesity with medication dates back to the time when it was classified as a distinct medical condition, and the first drug developed to combat obesity, deoxyephedrine (methamphetamine), was approved by the US Food and Drug Administration (FDA) as early as 1947.[11] In the years that followed, obesity was treated with oral agents such as tetrahydrolipstatin, bupropion, naltrexone, phentermine and topiramate[12].

In recent decades, medicines that are analogues of glucagon-like peptide-1 (GLP-1) – an intestinal hormone belonging to the incretin group – have become popular in the obesity treatment. Studies have shown that taking GLP-1 analogues, such as semaglutide or liraglutide, activates the GLP-1 receptor in the brain, resulting in reduced food intake and weight loss[13]. A study carried out on a group of obese individuals who took semaglutide for 20 weeks showed an average weight loss of 10.6%. The weight loss was accompanied by a significant improvement in physical fitness compared with the placebo group[14]. Numerous studies indicate that tirzepatide, a dual agonist of the GLP-1 and glucose-dependent insulinotropic polypeptide (GIP) receptors, is highly effective in reducing body weight in overweight and obese individuals. A study conducted by Arrone et al. showed that participants taking tirzepatide for 88 weeks achieved a weight loss of 25.3%, whilst weight

loss in the placebo group was 9.9%. At the same time, a relapse of weight gain has been observed in people undergoing obesity treatment following the discontinuation of tirzepatide. Reintroduction of the medication resulted in a further reduction in body weight[15].

Although the drug treatments currently available are undoubtedly effective in reducing body weight in patients struggling with obesity, they do not ensure that weight is effectively maintained after it has been reduced without further doses of the medication.

Weight regain in patients with obesity following previous weight loss presents a major therapeutic challenge. It is commonly observed, regardless of the intervention used to reduce body weight, whether this involves lifestyle changes, drug therapy or bariatric surgery. Studies show that four main mechanisms may be responsible for weight regain, namely: immune memory associated with obesity, the gut microbiome – the transplantation of which may limit weight gain – excessive loss of lean body mass as a side effect of weight loss, and the challenge of controlling appetite, which increases following weight loss[16].

Given the challenges associated with long-term weight maintenance following weight loss, particular consideration should be given to two potential predictors of treatment outcomes:

- the individual level of 'weight suppression', based on the obese patient's baseline weight and their highest weight ever recorded, and
- the week-on-week change in body weight during the first 6 months of weight-loss treatment[17].

The long-term treatment success depends on a sensible pace of weight loss (i.e. avoiding excessive weight loss over a short period) and systematic, in-depth work on the patient's habits that contributed to their becoming overweight.

Obesity is an extremely difficult condition to treat and is characterised by a strong tendency to relapse. Given the high rates of failure to achieve sustained weight loss, understanding and addressing the psychological aspects of the disease, as well as the intrinsic and extrinsic motivations of patients living with obesity, appears to be critically important yet frequently overlooked throughout the treatment process.

Psychological and behavioural determinants of treatment adherence

Pharmacotherapy used in the obesity treatment is a useful tool that acts on physiological and biological mechanisms such as the sensation of hunger and satiety. Behavioural interventions, on the other hand, require the patient to work on self-regulation processes in order to change their eating habits. To achieve lasting change, it would be beneficial to implement an intervention that combines behavioral strategies with pharmacotherapy. It is worth noting, however, that patient adherence is essential for achieving effective treatment outcomes.

It is worth noting that, in the case of chronic conditions requiring long-term treatment, adherence can be as low as 50%[18]. When obesity medications are used, 91.91% of patients fail to follow their doctor's instructions during the first 60 days of treatment[19]. Patients demonstrate greater adherence when the change they are working towards is in line with their goals and values. Changes introduced under external pressure are usually associated with lower adherence.

Studies conducted among individuals undergoing bariatric surgery have shown that psychological well-being and higher self-efficacy are significant predictors of greater engagement in weight-loss interventions, such as dietary adherence and physical activity, following surgery. Preoperative depressive symptoms were associated with lower adherence to follow-up appointments, dietary interventions, and physical activity recommendations. The patient's beliefs, and any accompanying mood disorders, are therefore of significant importance in ensuring treatment adherence[20].

An important predictor of treatment success is understanding and appropriately addressing the patient's actual motivation, including its nature – whether internal or external. There is a substantial difference in the outcomes of interventions depending on the source of the patient's motivation,

reflecting their genuine willingness or reluctance to change. In the obesity treatment, developing an internal motivation for change is associated with greater effectiveness and a more significant reduction in body weight[21].

According to self-determination theory, a sense of personal autonomy plays a key role in human motivation and refers to how individuals perceive the reasons underlying their own actions. A sense of personal autonomy reflects autonomous motivation and indicates the extent to which an individual personally endorses an action and perceives it as a voluntary choice. The opposite involves engaging in actions perceived as driven by a sense of obligation and external pressure, typically expressed through statements such as "I have to" or "I should"[22].

Psychological factors associated with maintaining weight loss

Autonomous motivation is of significant importance not only for achieving short-term therapeutic goals, but also for the long-term maintenance of the results achieved. The findings of a randomized controlled trial conducted among women indicate that intrinsic motivation to exercise was a significant predictor of behavioral change, with beneficial effects in terms of maintaining weight loss remaining evident at follow--up assessments even three years later[23].

To increase the likelihood of maintaining long--term weight loss, it is essential to consider the patient's psychological and environmental factors. Psychological and behavioural factors, such as unrealistic expectations regarding the treatment outcomes, fatigue resulting from long-term dietary restrictions, and emotional eating, may contribute to weight regain. In the treatment of a recurrent condition such as obesity, it is essential to manage the patient's environment appropriately and limit their exposure to high-calorie foods, even after the desired weight loss has been achieved[24].

Co-morbid mental health conditions and eating disorders

In people struggling with obesity, the risk of depression increases by as much as 55%; at the same time, depression itself is associated with a 58% higher risk of developing obesity. Both depressive disorders and weight stigma reduce the likelihood of success of potential weight-loss interventions by undermining motivation and self-efficacy while increasing susceptibility to maladaptive behaviors and a sedentary lifestyle[25].

Stress appears to be a significant factor in increasing the likelihood of people becoming overweight. A study conducted on a group of healthy adults (n=588) to assess recurrent and cumulative stress found that experiencing a greater number of chronic stressors and stressful events over the course of one's life was associated with a higher BMI among the participants. It is worth noting that the relationship between stress and BMI was linear, which means that people meeting the criteria for obesity reported experiencing stress of greater intensity and frequency than those who were overweight, whilst those who were overweight experienced greater stress intensity than those of normal weight. This observation suggests that people with a higher BMI may be more prone to regulating their emotions through food and to eating in response to stress. It is worth noting that the prevalence of chronic stress in the study group was also associated with excessive alcohol consumption and cigarette smoking, which is consistent with the findings of previous studies identifying stress as a critical risk factor for the development of addictions[26].

Stress can increase the urge to eat highly palatable and energy-dense foods and is associated with more severe binge-eating episodes, which accompany, amongst other things, binge-eating disorder (BED), i.e. a disorder characterised by recurrent, excessive and uncontrolled consumption of food in a continuous manner over a short period of time (usually up to 2 hours)[27]. Binge-eating episodes in BED are usually not driven by hunger and are followed by feelings of guilt and self-disgust[28]. In people with normal BMI, stress appears to have an ambiguous effect on food intake, unlike in those struggling with obesity, where stress significantly increases the amount of food consumed[29]. From the perspective of losing weight and then maintaining

a healthy weight, snacking between meals – and the factors that drive the urge to snack – present a challenge. A study carried out on a group of people referred for bariatric surgery, with a BMI ≥ 40 kg/m^2 or ≥ 35 kg/m^2, showed that 86% of patients snacked between main meals, whilst 60% of patients reported that snacking helped them to reduce their perceived stress. Also, half of the respondents cited feelings of anxiety as the main reason for snacking[30].

Eating driven by emotions, such as anxiety, results in irregular meal times, which are determined by the patient's emotional state rather than by physical hunger. Irregular eating patterns can affect carbohydrate metabolism and insulin sensitivity, even in healthy people of normal weight. Studies show that a long-term dietary pattern characterised by irregular meals resulted in increased insulin levels in response to a meal[31]. It has been observed that overeating increases fasting glucose levels, affects the insulin response and alters the circadian rhythm of leptin secretion, a hormone that suppresses appetite[32]. Metabolic adaptation, which occurs as a result of repeated bouts of overeating, may contribute to further weight gain.

In recent years, researchers have been actively investigating the mechanisms underlying increased food intake in individuals living with excess body weight. Numerous studies and observational investigations have been conducted in populations of individuals with obesity and in animal models, with comparisons made against populations with normal body weight. A promising finding is the association between increased activation of dopamine D_1 receptor-expressing neurons in the nucleus accumbens (NAc D1SPNs), which represent one of the major dopaminergic receptor populations in the nervous system, and food-seeking behavior in mice with high-fat diet-induced obesity. Inhibition of synaptic transmission from D1SPNs in the nucleus accumbens (NAc) reduced the amount of effort expended by the mice to obtain food, reflecting decreased motivation, and attenuated weight gain. This illustrates that food may have greater motivational salience in individuals with obesity than in those with normal body weight, activating the so-called reward system and increasing the frequency and intensity of eating behaviors driven by factors other than physical hunger[33]. Earlier human studies demonstrated reduced availability of D_2-like dopamine receptors in individuals with obesity compared with those with normal body weight. Importantly, the availability of D_2-like receptors increased in the observed group of obese individuals following bariatric surgery and significant weight loss, which suggests that this phenomenon is reversible and may be a consequence, rather than a cause, of excess body weight[34].

Patients with obesity show increased activation of the nucleus accumbens (NAc) whilst anticipating a reward (i.e. anticipating that they will receive it) compared with people of normal weight; at the same time, they experience reduced activation of the reward system following the receipt of a reward in the form of food intake[35]. This observation may help explain why individuals with obesity require greater amounts of food to experience satisfaction.

It is worth noting that dopaminergic neurons encode not only the motivation to act in pursuit of a reward but also reward-based learning, which, in practice, contributes to the development of habitual behaviors[36]. Understanding the mechanisms underlying habit formation and the potential weakening of these habits following weight loss appears to be important for the long-term management of obesity.

Chronic stress and a lack of satisfaction in other areas of patients' lives (i.e., insufficient activation of the reward system in contexts unrelated to food consumption) may be important factors contributing to irregular eating patterns, to which individuals with excess body weight may be particularly susceptible. Using food to regulate emotions can become a habit, which, without appropriate therapeutic support, hinders the effective obesity treatment.

Weight stigma and the therapeutic alliance

Individuals with excess body weight may experience prejudice and stigma from others. Prejudice relating to being overweight involves holding

negative attitudes and beliefs towards people who are overweight or obese. It is hypothesized that prejudice may stem from misconceptions about the causes of obesity and individuals' ability to control their own weight. This type of prejudice results in the stigmatisation of people who are overweight. Stigmatization manifests in various behaviors that lead to discrimination against and exclusion of individuals living with obesity[37].

Studies show that as many as 88% of people with obesity face discrimination, stigmatisation and criticism on a daily basis as a result of being overweight[38]. Stigmatisation of people living with obesity is also widespread amongst healthcare professionals, for example through medical staff showing less respect towards patients. This may lead patients with obesity to avoid seeking healthcare, undergo routine screening less frequently, and receive lower overall quality of healthcare[21].

It is worth noting that weight stigma among healthcare professionals may contribute to the persistence of obesity in patients through physiological, cognitive, and emotional mechanisms. Feelings of rejection, misunderstanding, and marginalization experienced by patients living with obesity negatively affect their motivation to pursue further interventions and increase the risk of compensatory behaviors, such as emotional eating. Furthermore, the stigma associated with being overweight contributes to an increased risk of depression, anxiety and suicidal thoughts amongst patients, and significantly reduces their psychosocial well-being[37].

The way in which support is expressed by the social environment of individuals living with obesity appears to play an important role in patients' well-being and their subsequent motivation to engage in therapeutic interventions. A supportive and encouraging approach to change facilitates the implementation of behavioral changes and strengthens the self-efficacy of individuals facing these challenges. Support perceived by the patient as critical and delivered in a directive tone may substantially undermine self-efficacy, potentially triggering a defensive response manifested as rejection of the support offered, feelings of shame, and, in some cases, even defiance and deliberate non-adherence to the recommendations provided[39].

The substantial impact of social support is well illustrated by a 12-month randomized controlled trial conducted by Leahey et al., in which three approaches to weight loss were evaluated in a group of 278 patients with obesity. The interventions were based on a reduced-intensity behavioral weight loss (rBWL) program, with the frequency of patient meetings gradually reduced over successive weeks. In the first group, the subjects took part in regular sessions based exclusively on the standard rBWL programme. In the second group, in addition to rBWL, patients received online support from a Mentor – defined as someone who had previously achieved a weight loss target of at least 10% of their initial weight and maintained this for at least one year. The third of the study groups was based on the rBWL programme and online support provided by a person assigned to the same group, who was also attempting to lose weight at the same time (rBWL + Peer). It is worth noting that those in the third group have been trained in how to provide support to others. Participants in the third group, who received additional support from another program participant, achieved significantly greater weight loss than those assigned to the other groups. The difference between receiving support from a mentor and receiving support from another program participant lay in the underlying psychological mechanism. Participants perceived the mentor as someone who had achieved better outcomes (upward social comparison), whereas comparison with another participant who had achieved similar results (lateral social comparison) made the goal seem more attainable, resulting in greater motivation and, consequently, greater weight loss[40].

These findings illustrate that understanding from those in the patient's social environment, compassionate support, and the perception of treatment goals as attainable all play an important role in motivating patients with obesity to engage in treatment.

Psychological interventions to support obesity treatment

Classic cognitive behavioural therapy (CBT)

Obesity is a multifactorial disease; however, repeated health-compromising behaviors, such as unhealthy dietary habits and insufficient physical activity, are direct and necessary contributors to its development. Studies show that cognitive processes play a significant role in perpetuating unhealthy eating behaviours. Effective intervention therefore requires achieving meaningful and sustained changes in patients' behaviors and habits. Numerous studies point to the effectiveness of cognitive--behavioural therapy (CBT), existential therapy and the psychodynamic approach in the obesity treatment[41]. CBT is considered the most effective psychotherapeutic approach for treating binge-eating disorder (BED) among available psychotherapies and is a recommended psychological intervention for addressing the underlying causes of obesity[42]. It is worth noting that although CBT interventions are effective in reducing the occurrence of maladaptive behaviors, such as binge-eating episodes that may contribute to further weight gain, they do not necessarily result in weight loss in patients who are already living with obesity[43]. CBT enables patients to address issues related to emotional eating, anxiety, self-esteem, and body image. A properly delivered intervention helps modify maladaptive behaviors by challenging patients' negative beliefs[44].

To address the challenges of weight loss in individuals living with obesity, a specialized form of CBT was developed: Cognitive Behavioral Therapy for Obesity (CBT-OB). CBT-OB combines cognitive strategies with the procedures used in an earlier form of behavioural therapy designed to work with patients with obesity (Behavioural Therapy for Obesity, BT-OT). CBT-OB draws primarily on BT-OT in its emphasis on patient self-monitoring, goal setting, stimulus control, learning to manage high--risk situations, behavioral substitution, and relapse prevention[45].

The effectiveness of CBT-OB was assessed in a randomised controlled trial involving 88 patients with 'severe' obesity, who were assigned to either a high-protein diet or a high-carbohydrate diet as part of the study. The subjects received CBT-OB as an inpatient for a period of three weeks, which was then continued on an outpatient basis. During this period, treatment dropout rates were substantially lower among patients receiving CBT-OB combined with a high-protein dietary intervention (25.6%) or a high--carbohydrate dietary intervention (17.8%) than the rate commonly observed with standard weight-loss interventions without psychotherapeutic support (50%). Furthermore, weight loss in patients receiving CBT-OB support was significantly greater after 43 weeks of follow-up, amounting to 15% in patients on a high-protein diet and 13.3% in patients on a high--carbohydrate diet[46]. In the case of conventional programmes based on lifestyle changes and BT-OB therapy, weight loss amounted to just 8%.

Third-wave CBT

Third-wave CBT psychotherapeutic approaches are promising tools for supporting the obesity treatment. The third wave of CBT emerged in the late 20th century by supplementing classical CBT with techniques focusing on mindfulness, acceptance, the patient's values and interpersonal relationships. The third wave of CBT includes approaches such as Acceptance and Commitment Therapy (ACT), Dialectical Behaviour Therapy (DBT), Mindfulness--Based Cognitive Therapy (MBCT) and Schema Therapy[47].

Acceptance and Commitment Therapy (ACT)

The ACT psychotherapeutic approach, proposed by Hayes, Wilson, and Strosahl, posits that an individual's behaviors are closely linked to their context and should be examined in terms of the function they serve within that context.

Systematic reviews of randomised controlled trials confirm the effectiveness of ACT as a tool that can significantly help adult patients struggling with issues related to excess weight. Patients who underwent an ACT-based intervention experienced greater weight loss than the group receiving no ACT support[48].

Dialectical Behavior Therapy (DBT)

Despite the fact that DBT was developed to treat people with severe emotional dysregulation, it appears to be a promising tool to support the treatment of patients struggling with emotional eating, which may occur in the context of BED, ADHD or obesity. Studies show that DBT-based intervention can have a positive impact on the treatment of eating disorders by increasing adaptive eating and reducing problematic eating behaviours. However, given the imperfect methodology used in previous studies, further observations are required[49].

Motivational Interviewing (MI)

As mentioned above, patient motivation to achieve a goal, such as weight loss, appears to be crucial for successful obesity treatment. The 2018 recommendation issued by the US Preventive Services Task Force (USPSTF) for clinicians working with patients with excess body weight identified referral to intensive behavioral therapy and the use of Motivational Interviewing (MI) as recommended components of a comprehensive and appropriately structured therapeutic process. The USPSTF panel highlights an increase in effectiveness, with patients being twice as likely to lose 5% or more of their body weight during treatments involving behavioural interventions; this effectiveness was positively correlated with the number of motivational sessions held with patients during the course of the intervention. Face-to-face meetings with patients were more effective than sessions conducted remotely or via text message[50].

Motivational Interviewing is a patient--centered approach aimed primarily at eliciting and strengthening patients' intrinsic motivation to initiate change. Although Motivational Interviewing appears to be a promising tool in the treatment of a complex disease such as obesity, it is important to acknowledge that definitive evidence of its effectiveness remains limited, as indicated by meta-analyses published between 2018 and 2021, primarily due to methodological limitations in the studies conducted to date[51, 52]. Given the challenges associated with the widespread stigmatization of patients with obesity, patient-centered Motivational Interviewing may serve as a valuable tool for healthcare professionals, facilitating communication that is free from prejudice[53].

Mindfulness-based interventions (Mindful Eating, MB-EAT)

Mindful eating (Mindfulness-Based Eating) is an approach to eating that involves focusing fully on the food, experiencing it mindfully and consciously, with an emphasis on the sensations perceived by the senses, i.e. its taste, smell, appearance, texture, sound and temperature. From the perspective of obesity treatment and weight loss, one of the aims of mindful eating is to help patients develop an awareness of their own needs and learn to recognise the signals their body sends, including signals of hunger and fullness.

Adopting mindful, slow eating may result in a lower calorie intake per meal[54].

Studies focusing on the effectiveness of mindful eating in the treatment of overweight and obesity show that mindful eating helps to reduce the incidence of emotional eating, and may therefore inhibit further weight gain, although it does not result in a significant reduction in the patient's excess weight[55].

Some meta-analyses suggest that mindful eating is effective as a tool in the treatment of eating disorders; however, the effectiveness of this method remains lower than that of traditional cognitive--behavioural therapy[56].

A comparison of psychological interventions for the obesity treatment is set out in Table 1.

Clinical implications and practical recommendations

Given that obesity is not limited to abnormal body composition, characterized by excessive adipose tissue accumulation, and associated somatic abnormalities, but also involves differences in cognitive processes, dysregulation of hunger and satiety perception, motivational and reward systems, and emotional regulation, its treatment should adopt a comprehensive, multidimensional approach

Tabela 1. Psychological interventions in obesity treatment.

Type of intervention	Main therapeutic problem	Scientific background	Clinical use	Limitations
CBT therapy	Dysfunctional beliefs about food and body weight, difficulties with self-control, maladaptive eating habits, and relapse into harmful behaviours	Numerous randomised controlled trials, systematic reviews and meta-analyses confirming its effectiveness in reducing body weight and promoting lasting changes in health behaviours	Cognitive restructuring, self-monitoring, stimulus control, developing problem-solving skills and relapse prevention	Requires the patient's active involvement and regular self-management; its effectiveness may diminish once intensive therapeutic support has ended
ACT therapy	Emotional eating, impulsiveness, avoidance of unpleasant emotions, difficulty in maintaining long-term changes	A growing number of clinical trials, systematic reviews and meta-analyses indicating a beneficial effect on health behaviours, emotional regulation and the maintenance of treatment outcomes	Developing psychological flexibility, acceptance of difficult experiences, and values-based action	Fewer studies on obesity treatment compared with CBT, and limited standardization of the programs used
DBT therapy	Difficulties in regulating emotions, impulsivity, emotional eating, binge eating episodes	A limited but growing body of research indicates improvements in emotion regulation and reductions in loss-of-control eating behaviors	Learning mindfulness, tolerance of discomfort, emotional regulation and effective strategies for coping with stress	Fewer studies on obesity treatment compared with CBT and ACT, and limited evidence regarding long-term effects on body weight.
Mindfulness-based interventions – MBI, including Mindful Eating	Automatic eating, emotional eating, reduced awareness of hunger and satiety cues, and stress-related eating responses	A growing body of systematic reviews and meta-analyses indicates improvements in eating behaviors and reductions in emotional and reactive eating	Developing mindful awareness of the eating process, enhancing self-regulation, and improving recognition of internal bodily cues	Significant heterogeneity in research programmes and methods; inconclusive findings regarding long-term weight loss
Motivational interviewing (MI)	Low motivation to change, ambivalence toward treatment, and difficulties adhering to health recommendations	Clinical trials and systematic reviews indicate effectiveness in increasing readiness for change and treatment engagement, particularly as part of comprehensive therapeutic programs	Enhancing intrinsic motivation, fostering self-efficacy, and supporting adherence to lifestyle recommendations	Effectiveness depends on the therapist's competence; limited benefits when used as a standalone intervention

The strength of the evidence is assessed descriptively and is based on the number and type of available studies, including randomized controlled trials, systematic reviews, and meta-analyses.

that incorporates the psychological aspects of the disease. Appropriately tailored psychological support should be an integral component of obesity treatment delivered by a multidisciplinary team of specialists. To achieve optimal treatment outcomes, psychological support should be integrated with dietary therapy, physical activity, pharmacotherapy, and, where appropriate, bariatric care.

Access to psychological support and psychotherapy should be available to patients living with obesity to facilitate an individualized approach to care, identify personal factors influencing eating behaviors, and develop effective strategies to support lasting changes in patients' habits. According to current recommendations, cognitive behavioral therapy should be the first-line approach for interventions aimed at modifying habits in patients living with obesity. Third-wave CBT approaches, particularly ACT, DBT, MBCT, warrant particular attention. Selecting an appropriate therapeutic approach based on the patient's individual profile and specific challenges is essential.

An additional tool to support learning to recognize bodily signals, including hunger and satiety cues, may be the incorporation of mindfulness training and mindful eating.

In the context of obesity treatment, particularly in patients for whom implementing lifestyle modifications poses a significant challenge, it is essential to understand whether they are driven by autonomous motivation or feel compelled to change by their social environment and pressure arising from societal expectations. In such situations, working to change our source of motivation may prove crucial to achieving effective, long-term results from the treatment we are undertaking. In the context of obesity treatment, particularly in patients for whom implementing lifestyle modifications poses a significant challenge, it is essential to understand whether they are driven by autonomous motivation or feel compelled to change by their social environment and pressure arising from societal expectations.

Given the importance of patients' mental health, beliefs, and potential mood disorders for successful obesity treatment, screening for depressive disorders, anxiety, binge-eating episodes, and emotional eating is essential. Screening should be conducted both before and throughout treatment by a primary care physician, an obesity medicine specialist, a psychiatrist, a psychologist, or another healthcare professional with the appropriate competencies to assess the patient's condition. It is also important to assess the patient's intrinsic motivation and their readiness to change before therapy begins and whilst it is ongoing. An assessment by a psychologist, a psychodietitian or another qualified healthcare professional would be helpful in assessing the patient's motivation. It is very important to monitor and assess the patient's mental state during treatment and to refer them to the appropriate specialist – a psychotherapist or psychiatrist – should their mental state deteriorate significantly.

Particular attention should be paid to the problem of the pervasive stigmatisation faced by patients with obesity, including from healthcare professionals. Particular care should be taken in the way one communicates, treating the patient with due respect and demonstrating an understanding of obesity as a medical condition and the therapeutic challenges it presents. From the perspective of healthcare professionals, a responsible approach requires an awareness of the importance of patient support and fostering intrinsic motivation for treatment success, for example, through the use of Motivational Interviewing.

The implementation of support programs or patient support groups should be considered, as these may provide an additional source of motivation for change through mutual support, understanding, and the perception of personal goals as attainable, thereby harnessing the positive effects of lateral social comparison. Given the limited resources available to therapeutic teams, the implementation of remote psychological support may also be beneficial, as it has been shown to produce positive outcomes, although these may be less pronounced than those achieved through face-to-face interactions with patients. It is also recommended to include a certified psychodietitian in the standard multidisciplinary treatment team, particularly during the initial stage of working with the patient.

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