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20.1 Introduction

Psychological issues play significant roles in both the development and consequences of obesity. Studies have found that some people eat more when affected by depression, anxiety, or other emotional disorders. Being overweight and obese is often the cause of these psychological disorders. It is a vicious cycle whereby the greater the emotional conflicts and difficulties, the greater the incidence of unhealthy eating and obesity.

A multidisciplinary approach that addresses psychological, social, environmental, and biological factors of obesity is critical to ensure comprehensive care, as well as best practices and outcomes. The importance of dealing with the psychological aspects in the treatment of obesity has become more explicit over the last two decades. Not only is the role of a psychologist important for treatment of obesity and pre-surgical psychological assessment, but also following weight loss to help the patient to adjust the subsequent emotional, behavioural, and social changes that often occur. The achievement of substantial weight loss from bariatric surgical or nonsurgical approaches is significantly related to one's ability to make permanent changes in one's lifestyle that involves not only adherence to more appropriate nutritional intake and exercise but also improved management of stress and emotional states with decreased reliance on eating as a coping mechanism.

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20.2 Physician Communication Style

The weight loss programmes, based on diet and physical activity, require also learned cognitions about food and eating and changes in lifestyle, habits, and behaviour. Obese people experience many difficulties to start losing weight and to maintain weight loss. Psychological factors play a relevant role to determine these problems. In obese individuals there are frequent mood alterations, low self-esteem, negative body image, emotional discomforts, and interpersonal relationship difficulties. Various comorbidities and functional limitations associated with obesity can adversely affect physical quality of life. Poor health and employment-related as well as other forms of social discrimination can add to the psychological distress in obese individuals [1].

On this basis, treating obesity, the first aspect to consider is the physician's and health worker's competence to deal with psychological issues and to manage the relationship with the patient [2].

Patients suffering from obesity need a multidimensional evaluation intended to design an individualized treatment plan applying different procedures and therapeutic strategies.

Integrating several competences in team-based approach demands specific education, skills, training, and expertise [3] also with regard to the psychological aspects of the disease.

Particular attention must be given to patient-centred care, working alliance, effective communication, and empathy. These dimensions of care are useful in the approach to many diseases, but they represent necessary characteristics of the doctor–patient relationship in the treatment of obesity [4].

Providers approach the “patient as person” (rather than patient as disease or organ), taking into account the meaning of the illness to the patient in his or her broader life context [5]. Patient-centred communication is responsive to the patients' emotional state and concerns and encourages patients to participate in decision making [6, 7].

Working alliance includes cognitive and emotional components of the patient–physician relationship, promotes patient's self-efficacy, and is associated with patient adherence to the treatment [8].

Effective communication has the potential to regulate patient's emotions, facilitate comprehension of medical information, and allow for better identification of patient's needs, perceptions, and expectations.

Communication strategies for building better relationships with patients are non-verbal and verbal strategies, shared decision making, and motivational intervention.

Empathy is the core element of the relationship, representing the competence of a physician to understand the patient's situation, perspective, and feelings; to communicate that understanding and check its accuracy; and to act on that understanding in a helpful therapeutic way. Empathy can therefore be defined at three levels: as an attitude (affective level), as a competency (cognitive level), and as an action (behavioural level). Empathy in patient–physician encounters was associated with patient's behaviour change [9], decrease in patient's anxiety and distress, and better clinical outcomes [10].

20.3 Therapeutic Education

In addition to the skills concerning the relationship and the effective communication style, to better address the psychological issues of patients, physicians can use a more structured approach defined as therapeutic patient education (TPE).

TPE is a systemic, patient-centred learning process, useful in the treatment of chronic diseases, primarily in diabetes and obesity also [11, 12].

TPE is an integral part of treatment and care focused on patients' needs, resources, and values.

TPE allows patients to be active participants improving their knowledge and skills not only concerning their illness but also their treatment.

In order to be properly accomplished, TPE involves an open-minded professional approach and a strong availability to inter-professional as well as interdisciplinary network, including physicians, nurses, dietitians, physiotherapists, psychiatrists, psychologists, and social workers.

According to a definition of a World Health Organization working group, therapeutic patient education is "designed to enable a patient (or a group of patients and families) to manage the treatment of their condition and prevent avoidable complications, while maintaining or improving quality of life".

It takes into account coping with the disease, locus of control, health beliefs, and sociocultural perceptions; subjective and objective needs of patients, whether expressed or not.

TPE is a continuous process, which has to be adapted to the course of the disease and to the patient and the patient's way of life. Health-care providers should be able to adapt their professional behaviour to patients and their disease, communicate empathetically with patients, recognize the needs of patients, help patients learn, and take account of the patients' emotional state, their experience, and their representations of the disease and its treatment.

TPE is designed therefore to train patients in the skills of self-managing or adapting treatment to their particular chronic disease and in coping processes and skills. It should also contribute to reduce the cost of long-term care for patients and society.

20.4 Psychological Factors and Obesity

Psychological factors contribute to the onset and maintenance of overweight and obesity in children, adolescents, and adults, also playing a significant role in determining difficulties for the treatment of obesity. Furthermore some obesity phenotypes appear to be related with specific psychological states and traits. Negative body image, low self-esteem, mood disorders, and social and family factors affect individuals in different ways and contribute to weight gain and failure in weight loss management. Assessment of these mental health factors and treatment by one of several mental health treatment models may not only improve self-worth but also weight loss and maintenance.

Research on personality and obesity reveals a complex relationship. Individual personality traits are related to a dynamic combination of weight status, treatment-seeking behaviour, comorbidities, and intervention success [13].

Statistically significant personality differences have been identified between obese and nonobese populations, but such data does not permit to determine an obese personality profile [13].

On the other hand, some studies show that obese individuals tend to be more impulsive, addictive, anxious, and novelty seeking than healthy-weight counterparts even after controlling for treatment-seeking behaviour and binge eating [14, 15].

Many studies agree in pointing out a deficiency in the emotional component of obese subjects. Indeed, a cofactor in some obese individuals is assumed to be immature affect regulation, which has its roots in the interaction with the primary caregivers and is related to early attachment experiences.

Attachment theory assumes that humans have a biologically predisposed attachment system [16] responsible for the strong emotional mother–child (primary caregiver–child) relationship. This system is activated as soon as an outer or inner danger arises that cannot be overcome by the child himself and thus has a survival-ensuring function.

A child's feelings, expectations, and behavioural strategies are integrated into this attachment relationship, which develops during the first year of life. In its basic structure, it is stable over time and forms an emotional basis throughout life, although change in different directions is possible through emotional experiences in new relationships or through psychotherapy. Attachment styles are currently differentiated as secure and insecure (preoccupied, dismissing, fearful–avoidant, and unresolved), and it is likely that children's relationships with adults other than the mother, such as father, grandparents, teachers, or care providers, also influence children's attachment security.

Some interesting studies noted an association between attachment and obesity based on maternal–child interaction such as maternal responsiveness, child engagement, and child negativity [17].

Another essential indication, derived from the original studies of H. Bruch, points up that obese individuals are not able to distinguish feeling of hunger from other physical needs or from emotional tension and psychological stress.

Some authors highlight that there is evidence that obesity and the metabolic syndrome can result from physiologic and behavioural responses to psychological stress [18–20].

The physiologic mechanisms appear to be related to neuroendocrine pathways, such as those involving cortisol, insulin, leptin, and neuropeptide Y [21].

Empirical observations support the possibility that children with a secure pattern of attachment are more easily comforted in stressful situations and are better able to regulate negative emotions; these behaviours are reflected in healthier patterns of physiologic responses to stress [22].

The stress response behavioural mechanisms may include eating to cope with negative emotions [23]. Secure attachment could reduce the risk for childhood obesity by preventing frequent or exaggerated stress responses from disrupting the

normal functioning and development of physiologic systems that affect energy balance, body weight, and fat distribution.

Securely attached children who are better able to regulate their emotions may be less likely to eat in response to emotional distress in early childhood when the systems in the limbic brain that regulate both emotion and appetite are developing concurrently [21].

All of these elements may be determinant not only in promoting obesity but also in causing difficulties for physicians taking in charge patients in adult life and in influencing the outcome of treatment.

Concerning the therapy of obese subjects, the relationship with the therapist plays a decisive role. These relationships depend especially on earlier experiences and the attachment style of the patient.

Moreover patient–therapist relationship is assessed to be more positive in secure compared to insecure participants. This corresponds to observations indicating that securely attached individuals have better access to their emotions and eating habits, can therefore better perceive, understand and name them, and thus also have better prerequisites for successful weight reduction [24]. Individuals with an insecure attachment style are more likely to have problems with these issues; in the case of emotional entanglement, for example, preoccupied attached individuals do not perceive eating as an attempt to compensate. Dismissively attached individuals tend to have difficulties in experiencing emotions and thus compensate by eating [25].

On this basis, over time, to deal the psychological issues associated with obesity, different psychotherapy-related approaches have been used in the treatment [26].

20.5 Behaviour Therapy

The lifestyle modification programmes combining diet, physical activity, and behaviour therapy were well formulated in the Diabetes Prevention Program and Look AHEAD research studies [27, 28].

Behavioural treatments appear to work primarily by enhancing dietary restraint by providing adaptive dietary strategies and by discouraging maladaptive dietary practices, and by increasing motivation to be more physically active. Therapy aims to provide the individual with coping skills to handle various cues of overeating and to manage lapses in diet and physical activity when they occur.

Therapeutic techniques derived from behavioural psychology include stimulus control (remove triggers for excessive eating and increase positive cues for exercising), goal setting (patients are educated to plan specific and quantifiable weekly goals, which should be realistic and moderately challenging), and self-monitoring (patients are educated to write down the time, amount, type, and calorie content of foods and beverages they are going to consume in a monitoring record and then to check in “real time”, while eating, if they respect what they had planned) [29].

Behaviour therapy (BT) may be held as the first line of intervention for overweight and obese individuals. Behavioural treatments have demonstrated effectiveness in the treatment of obesity, improving weight loss also in combination with other approaches for lifestyle modification [30].

In spite of this evidence, BT does not allow effective results in many cases, especially with regard to the maintenance of acquired weight loss. Behaviour therapy and lifestyle modification approaches result, on the average, in a short-term weight loss of 10 %, but long-term effects of such programmes are disappointing, in fact in most cases 30–50 % of the weight lost is regained within the first year after the end of the programme and continues to steadily increase until stabilizing near baseline weight in 5 years after treatment [31].

20.6 Motivational Interview

A substantial body of researches confirm the poor maintenance of weight loss in obese individuals following treatment by lifestyle modification programmes combining diet, physical activity, and behaviour therapy [32].

Remarkably difficult stages in the treatment of obesity are the initiation of changes, the compliance with therapeutic advice as well as the maintenance of the achieved weight loss. In these phases of the treatment, a key problem appears to be the resistance to change, based on psychological issues.

For these reasons regarding the need to address resistance to change, at the beginning and in the course of a treatment of obesity, it may be useful to evaluate the readiness to change of obese individuals which is possible by means of a structured test, so-called TRE-MORE test, recently validated for the clinical practice [33].

Concerning the approach to the obese patient's resistance, motivational interview (MI) may be of particular interest [34].

Referring to the transtheoretical model of behaviour change [35], MI is an intervention that derives from a social cognitive theoretical framework and is designed to favour an individual's motivation to change problematic behaviours. MI is a patient-centred approach that emphasizes individual autonomy and a collaborative relationship between patient and provider. This approach takes the form of psychotherapy and differs from a traditional patient education-based intervention, which mostly tends to provide advice and information [36, 37].

MI strives to help patients move towards behaviour change by assisting them in the process of identifying, articulating, and strengthening personally relevant reasons for change, eliciting personal goals, problem-solving barriers to change by highlighting benefits of change and reducing the perceived costs of change, and addressing ambivalence about the change. This approach uses an emphatic, interactive style that supports self-determination, enhances self-efficacy, and underscores individual control for behaviour change [38].

Despite the efficacy of MI techniques to influence readiness for behaviour change [39, 40], there are still few data in the literature concerning this approach outside of the domain of substance and alcohol addiction. Many studies suggest that MI strategies used alone or in combination with other behavioural interventions have led to increased exercise in different types of diseases. Studies using MI combined with various diet and exercise strategies have demonstrated improved weight loss and treatment adherence in obese and diabetic patients [41].

An interesting study on a group of obese patients who failed to lose sufficient weight during a lifestyle modification programme shows that the patients who later received MI sessions subsequently lost significantly more weight and engaged in significantly more weekly exercise than those who did not receive the intervention [42]. Moreover emerging research concerning the efficacy of MI for the maintenance of weight loss and improved psychosocial functioning of obese adults [43] and isolating the unique contributions of MI to weight loss treatment suggests that this approach has utility as part of a comprehensive multicomponent obesity intervention [44].

On this basis, the use of MI, if confirmed by further investigation with larger patient samples, seems to promise interesting results in the treatment of obesity [45].

In recent years some studies have shown that high-fat/high-sugar food and drugs that cause addiction act similarly on brain reward pathways [46], and there is growing evidence on brain reward dysfunction in both obesity and binge-eating disorder [47–49]. Such brain abnormalities may be linked with behavioural problems, including high impulsivity and the inability to delay gratification. In addition, overabundance of high-fat/high-sugar food in the environment may place individuals with genetic, neurological, and/or cognitive–behavioural vulnerabilities at increased risk of development of food addiction in binge eating and obesity.

Therefore, in light of the demonstrated effectiveness of MI in the treatment of addictions to alcohol and drugs, it is possible that this psychotherapeutic approach has additional reasons for its application in the treatment of obesity.

20.7 Cognitive–Behavioural Therapy

Cognitive–behavioural therapy (CBT) for the treatment of obesity has been applied over the years assuming that cognitions influence both feelings and behaviours. A new form of CBT was designed to enhance acceptance of their shape in obese individuals and encourage their implementation of weight maintenance behaviour. When cognitive techniques are added to BT, they appear to improve programme success, reduce weight regain, and increase psychological well-being [50].

The CBT approach helps manage problems in a more positive way, examining how your actions can affect how you think and feel. CBT works by helping make sense of overwhelming problems by breaking them down into smaller parts. Thoughts, feelings, physical sensations, and actions are interconnected, often trapping one in a negative spiral. CBT helps stop these negative cycles. It aims to break down factors that are making one feel wrong, anxious, or scared so that they are more manageable. It can show how to change these negative patterns to improve the way one feels.

CBT is utilized in the treatment of obesity as a way to help individuals change their negative eating behaviours and incorporate healthy lifestyle changes. The CBT interventions are self-monitoring techniques (e.g. food and exercise journals), stress management, stimulus control (e.g. eating only at the kitchen table), social support, problem-solving, and cognitive restructuring (e.g. to have more realistic weight loss goals, avoidance and challenging of self-defeating beliefs).

These strategies are aimed at identifying and modifying aversive thinking patterns and mood states to facilitate weight loss [51].

The addition of cognitive therapy to a standard dietetic treatment for obesity might not only be effective in reducing weight and related concerns, depressed mood, and low self-esteem, but might also prevent relapse and have an enduring effect that lasts beyond the end of treatment. Moreover some authors have shown that incorporating additional cognitive components into the cognitive-behavioural treatment of obesity can improve both short- and long-term outcomes [52, 53].

CBT showed efficacy also in the treatment of BED [54] in which it is necessary to modify the highly dysfunctional eating habits even before the start of a programme for weight loss. The most important therapeutic goals of the CBT programme are normalization of eating habits and stopping the binge-eating episodes; promoting physical activity and a positive body experience; learning specific skills such as assertiveness; installing a functional self-evaluation system; learning to identify, tolerate, and express negative emotions; promoting self-esteem; and prevention of relapse [55].

Interesting studies regarding the effectiveness of CBT interventions for the treatment of obesity in a group show that results are not inferior to a similar programme applied in individual setting, and it may enhance weight loss in the short term [56, 57].

Other studies have shown that CBT is well suited to treating obesity in children and adolescent, given the emphasis on breaking negative behaviour cycles and recommending to extend therapy beyond the individual treatment milieu to include the family, peer network, and community domains to promote behaviour change, minimize relapse, and support healthy long-term behaviour maintenance [58].

Finally, even in combination with bariatric surgery, CBT has demonstrated effectiveness in improving the results of treatment and keeping them. In fact psychological factors play a substantial role also with regard to the surgical treatment of obesity [59]. Moreover in obese patients looking for bariatric surgery, the prevalence of psychiatric and personality disorders is higher than that in obese individuals from the community [60].

Psychological assessment with a focus on special factors that could affect the bariatric surgery outcomes (depression, anxiety, eating disorders, self-esteem, personality disorders, quality of life) is recommended, and it has been introduced over 20 years.

Psychological factors such as current substance abuse or dependence, current acute or inadequately managed mental illness, or lack of comprehension of risks, benefits, expected outcomes, alternatives and lifestyle changes required with bariatric surgery, and unwillingness to comply with postsurgical protocol, can be considered as factors to deny or defer surgery.

Data about psychological disorders in obese patients before and after bariatric surgery as well as the assessment and impact of these factors on post-surgery outcomes highlighted the usefulness of psychological treatment to enhance the results. Recent studies have shown the efficacy of CBT programmes to prevent weight regain in morbid obese individuals treated with bariatric surgery; moreover

combining bariatric surgery with CBT weight loss programme after surgery might help weight control [61, 62].

Despite increasing positive experience, some studies lead to different conclusions on the greater effectiveness of CBT in the treatment of obesity, suggesting that the differences between standard behaviour therapy and cognitive-behavioural therapy of obesity lie more in their underlying theories than in their implementation [63].

Another study, comparing short- and longer-term effects of a new form of CBT with BT and with a minimal intervention, a form of guided self-help (GSH), shows that the great majority of the participants lost weight and then regained it; even if the weight loss was greater for the CBT compared to BT and CBT was also successful at achieving change in participants' acceptance of shape, CBT was no better than BT to prevent posttreatment weight regain, and only a low proportion of patients in both treatment conditions were able to maintain either a 5 or 10 % weight loss throughout follow-up [31].

20.8 Interpersonal Psychotherapy

Interpersonal psychotherapy (IPT) has been particularly applied to the treatment of BED based on a strong body of evidence demonstrating a consistent relationship between poor interpersonal functioning and eating disorders in adults and adolescents [64–66].

Binge eating is the most common eating pattern seen in obesity, and BED is now included among the structured forms of eating disorder (DSM V). With respect to obesity, BED is reliably associated with a higher BMI, presents greater functional impairment and lower quality of life, and shows significantly greater levels of psychiatric disturbances.

The interpersonal model posits that social problems create an environment in which binge eating develops and is maintained as a coping mechanism, serving to reduce negative affect in response to unfulfilling social interactions. Binge eating may, in turn, worsen interpersonal problems by increasing social isolation and impeding on fulfilling relationships, thereby maintaining the eating disorder [67].

Suppressed affect is often present in people with BED; so, instead of expressing negative affect, they eat to cope. IPT helps individuals acknowledge and express this painful affect so that they can better manage negative feelings without turning to food.

IPT also seeks to reduce binge-eating pathology by supporting the development of healthy interpersonal skills that can replace maladaptive behaviours and promote a positive self-image.

Finally IPT is the only treatment that has shown comparable long-term outcomes to CBT. Moreover IPT has shown greater efficacy for patients with more severe eating pathology and lower self-esteem and thus may be a more appropriate first-line treatment for such individuals [68].

20.9 Dialectical Behaviour Therapy

Efficacy in the treatment of BED was found by using the dialectical behaviour therapy (DBT) [69, 70]. DBT has been structured by Marsha Linehan for the treatment of women with borderline personality disorder; the focus of the treatment is to restore the ability to identify, accept, and regulate their emotions.

The modification of DBT for BED is based on the affect regulation model of binge eating, which posits that binge eating occurs in response to intolerable emotional experiences when more adaptive coping mechanisms are not accessible.

20.10 Other Psychotherapeutic Approaches

Since systematic reviews or controlled studies on humanistic and psychodynamic therapies in treatment of obesity are not available [71], and considering the limitations and inadequacies of the approaches discussed above, alternative psychotherapeutic treatments have been tested.

A small number of studies on psychotherapy-related approaches, e.g. relaxation therapy or hypnotherapy, failed to demonstrate any decisive positive outcomes.

Combination therapies involving behavioural and biological therapies, especially mind–body interventions, have been proposed. Two mind–body modalities, energy psychology and mindfulness meditation, are reviewed for their potential in treating weight loss, stress, and behaviour modification related to binge-eating disorder. Mindfulness meditation and practices show compelling evidence and exhibit initially promising outcomes but require further evidence-based trials [72, 73].

Finally, according to some authors, it should be noted that, for the large prevalence of obesity, individual- or small-group-based interventions are insufficient to serve the population masses requiring treatment. On this basis, the proposed manualized self-help programmes, such as guided self-help CBT, may be helpful, at least for individuals with low level of additional psychological problems [31, 74]; the development of community or Web-based programmes and community-development tactics to increase healthy lifestyles may also be useful [75].

Conclusions

Assessment and treatment of the patient's psychological traits are extremely important for the positive outcome in the therapy of obesity.

Physicians and health workers must have the expertise to deal with psychological issues and to manage the relationship with obese patients.

The behavioural, cognitive, and emotional factors (especially the ability to identify, accept, and regulate emotions) should always be taken into consideration and managed with psychological treatment, together with standard interventions on diet, exercise, and, when indicated, surgical therapy.

Despite all efforts, therapeutic success of obesity treatment is often lacking. Therapeutic approaches discussed above, effective in some cases, do not always achieve the expected result. This may be the case especially for those cases of

obesity that occur with morbid characteristics or more dysfunctional eating pattern.

Thus treatment of obesity remains a challenge even more difficult when presented with significant psychopathological aspects such as a strong deficiency in emotional regulation or binge-eating disorder.

Nevertheless people who are overweight or obese benefit from psychological interventions to enhance weight reduction, even if it is necessary to continue research and to implement it in effective treatments of obesity.

Among the psychotherapies of obesity, BT and CBT, as well as IPT and DBT especially for BED, have evidence of effectiveness; MI and other psychotherapeutic approaches can enhance the possibilities of treatment.

Recent research has increased knowledge of different phenotypes of obesity and indicated that certain psychological treatment models are more effective than others for specific subset of patients showing different behaviours and psychological characteristics. Incorporating such knowledge in treatment planning should help to individuate the model of psychotherapy most effective depending on the specific type of obesity.

Thus, notwithstanding the usefulness of psychotherapy in the treatment of obesity, the effectiveness of different psychotherapeutic approaches must be better assessed with further study and confirmation.

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