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REVIEWS

The main lines of intervention and treatment of obesity: the effectiveness of cognitive behavioral therapy (CBT) and hypnosis

Angela Nuțu[1], Ruxandra Victoria Paraschiv[2], Titi Paraschiv[3]
[1] *Discipline of Psychiatry, Faculty of Medicine, "Carol Davila" University of Medicine and Pharmacy, Bucharest, Romania*
[2] *Discipline of Experimental Psychology, Department of Psychology and Psychotherapy, Faculty of Psychology, Titu Maiorescu University, Bucharest, Romania*
[3] *Discipline of Psychoinformatics; Logical-analytical models of psycho-social relations, Department of Cognitive Sciences, Faculty of Psychology, Titu Maiorescu University, Bucharest, Romania*

Abstract

Obesity represents a growing public health issue, a phenomenon with a pandemic character.

Obesity is a chronic condition with a complex etiopathogenesis and is associated with risk factors for medical complications and comorbidities.

Given the complexity of the phenomenon of obesity, its treatment requires psychological interventions along with the standard ones (nutritional, pharmacological and surgical).

In this regard, the role of cognitive behavioral therapy (CBT) in the treatment of obesity and eating disorders is increasing. CBT represents an indicated method in the treatment of bulimia and a first-line intervention for obesity.

In the fight against obesity CBT is increasingly associated with Hypnosis, a combination which improves the effectiveness of the two methods.

CBT and hypnosis support the long-term emotional, cognitive and behavioral changes needed for the adoption of a healthy lifestyle.

Physical activity is an important component of a healthy lifestyle. In this respect, awareness of the preferences of the population regarding physical exercise is useful for the development of health policies and in the global fight against obesity.

Keywords: overweight, obesity, obesity pandemic, fitness, cognitive-behavioral therapy for obesity, hypnosis.

Obesity, a chronic disease and a public health issue

At present, our unhealthy style of eating, the daily stress, as well as the sedentary lifestyle affect the entire population of the globe, contributing to a significant increase in obesity and the emergence of serious health problems.

In Europe, over 60% of the population is affected by overweight and obesity, and if no measures are taken to prevent and combat it, for the year 2025 WHO predicts that obesity - considered by some specialists a "chronic disease" - will affect 50% of the world's population. These figures confirm the extent of the phenomenon of obesity. We can speak of a "pandemic obesity", a problem for which, at the global level, we have not yet found solutions, nor any sustainable and long-lasting approaches.

In recent years, overweight and obesity have become a "public health problem" (Cojocaru, 2021; Tihon, 2019), affecting people of all ages, considered by WHO a "chronic disease" and a "global pandemic". It is one of the greatest challenges of the 21st century, affecting both men and women of all races and ages.

When looking at the global obesity epidemic, data on the risk factors of obesity are not exactly known, due to the differences in behavior, social culture and lifestyle from country to country and region to region. That is why BMI (body mass index) has become the statistical measurement unit of obesity and overweight, unanimously accepted in all countries, facilitating research related to the epidemiology of obesity, which, in the period until 1990, when each country had its own specific criteria for evaluating obesity,

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Address for correspondence: Department of Psychiatry, University of Medicine and Pharmacy "Carol Davila", Bucharest, 8 Eroii Sanitari Street, PC 050474, Bucharest, Romania
E-mail: angela.nutu@drd.umfcd.ro
Corresponding author: Angela Nuțu; angela.nutu@drd.umfcd.ro
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had been rather challenging.

WHO defines overweight as the situation in which the BMI is greater than or equal to 25, and obesity as the situation when the BMI exceeds or is equal to 30.

Hippocrates, the father of medicine, said the following about obesity: it is not only a disease in itself, but also a precursor of other diseases (Cojocaru, 2021).

Obesity is a chronic condition, associated with risk factors for many medical complications and comorbidities, and therefore it should be treated as a complex and multifactorial disease (being influenced by genetic, biological, psychological, behavioral, familial, social, cultural and environmental factors). As such, it requires urgent global action, which should be taken by unifying all knowledge and integrating practical interventions and all known effective therapies to combat and treat obesity.

The etiopathogenesis of obesity

Although in certain situations the main causes of obesity are genetic in nature, or generated by the existence of endocrine and mental disorders, or specific medications, in most cases obesity is closely related to a lifestyle combining a high calorie intake, an unhealthy diet, stress, occupations involving a sedentary lifestyle and the lack of exercise.

The social environment creates a predisposition to overeating, through the generous offers of foods rich in sugars, fats and preservatives, which are affordable, pleasant to the taste, yet with a very high caloric density and a low nutritional density.

Access to such foods, in increasing quantities, as well as the sedentary and stressful lifestyle combine with individual risk factors (psychological, biological, etc.), or with family risk factors, thus contributing to the increase in obesity among the population and to the emergence of certain eating behavior disorders.

Obesity is the result of a complex interaction between genetic, epigenetic, and environmental factors which determine the energy imbalance responsible for obesity.

Overweight and obesity result from the disruption of the energy balance, in the sense that the amount of energy ingested is greater than the amount of energy consumed. This process has the effect of depositing adipose tissue in certain parts of the body, as well as altering the structure and the secretory function of adipose tissue (Tihon, 2019).

Being a "chronic disease", obesity generates not only the deposition of fat in certain parts of the body, but also a series of metabolic complications such as diabetes, as well as cardio-vascular, endocrinological, osteoarticular complications, etc.

Obesity as a pandemic phenomenon

Due to the extent that the phenomenon of obesity has reached during the last decades, it is rightly considered to be a growing pandemic phenomenon, being also referred to as a public health crisis, which overwhelmingly affects the quality of life and the health of the individual, burdening the national budgets allocated for health.

Obesity affects adults, men and women of all ages and from all the walks of life, as well as children.

According to the latest WHO report (2) on obesity, carried out in 54 countries, the figures for Europe are worrying in the sense that approximately 60% of the population is overweight, and the obesity index in Europe is on the increase. The most affected countries are Turkey and Malta, with a figure of over 65% of overweight people. Recent estimates have shown that overweight and obesity cause more than 1.2 million deaths in the WHO European Region each year, being the fourth leading cause of death after high blood pressure, unhealthy diet and tobacco use (2).

The WHO report also confirms that the COVID-19 pandemic has increased the obesity rate and worsened the situation of the overweight, due to the lack of exercise and the fact that people stayed indoors for a long time during the quarantine period.

In Romania, in 2022, the percentage of adults affected by overweight and obesity was 58%, a percentage very slightly below the European average of 60% (2).

In addition, more and more children are affected by overweight and obesity. Childhood obesity is also a consequence of the aggressive marketing of unhealthy foods and drinks, and the lack of nutritional education on the part of the parents, but also of the lack of physical education and sports activities in schools.

The WHO warns that if urgent measures are not taken, by 2025 50% of the world's population will suffer from obesity. In the 2023 Atlas of the World Federation against Obesity, it is estimated that by 2035, 51% of the global population could be affected by obesity, and childhood obesity could reach 100%, if we do not intervene (1).

Obesity is spreading like a global epidemic and represents one of the biggest challenges of the health system nowadays.

Already in 2015, after an alarming increase in obesity and overweight was observed, the "International Obesity Day" was designated, which WHO marks every year on March 4, in order to increase the degree of responsibility on the part of society, at a global level, with regard to the phenomenon of obesity.

Together we can correct the misconceptions about obesity and everything that has not worked so far by taking collective action, changing outdated norms and tackling the phenomenon of obesity in a complex way, as the current situation calls for.

It is necessary to monitor the evolution of this phenomenon, and all the causes and consequences of obesity must be correctly evaluated and treated interdisciplinarily by teams of doctors and specialists from different fields.

Directions for action to prevent obesity: trends in fitness

The two main directions of action in the prevention of obesity still remain healthy eating and an active lifestyle. However, quality sleep, avoiding stress, and balance in everything are also necessary for a healthy lifestyle.

A healthy diet implies avoiding fats, highly concentrated sweets, carbonated juices rich in sugar, avoiding fast food and processed foods which contain a lot of sugar and preservatives, and at the same time increasing the consumption of fruit and vegetables, whole grains and quality protein.

An active and healthy lifestyle also requires a lot of movement, considered by some authors as the "basis of life",

with a significant role in maintaining health and balance in the human body, the movement of skeletal muscles involving energy consumption (Szabo, 2022), with beneficial effects on fat burning and keeping the body in shape.

Although lifestyles have been affected by the COVID-19 pandemic, many of those isolated at home, as shown in the latest 2023 Global Fitness Trends Survey by Thompson (2023), have turned to fitness at home - which played an essential role in the post-pandemic recovery.

If during the isolation at home, fitness professionals resorted a lot to online services, so that online training from the comfort of home was the number 1 trend in 2021, we notice that in 2022 it reached the 9th place among the options of amateurs of exercise, and is currently on the 21st place, which means that people now choose to exercise outdoors or go to the gym in person.

The online survey using www.surveymonkey.com was sent to 125.940 people, including more than 32.000 ACSM certified professionals, who registered to attend the International Health ACSM 2022 & Fitness Summit; 3.753 people responded to this survey, and responses were received from all continents.

The results of the survey showed that among the solutions for keeping fit, for adults, functional fitness training, outdoor activities are preferred (ranked 4th among the preferences of fitness activities in 2021 and 3rd in 2022), together with basic training, circuit training etc. (Thompson, 2023).

Knowing these trends can be very useful for the development of health and prevention policies, for finding solutions to encourage the adoption of a healthy lifestyle among the population, based on the practice of healthy eating habits, as well as outdoor movement, training and fitness programs for adults, as well as practicing traditional sports - for children.

The main scientifically validated approaches to treating obesity: the importance and effectiveness of CBT and hypnosis

Currently, the following three scientifically validated approaches are used for the treatment of obesity, including severe or morbid obesity, but also for weight regulation, accompanied by the reduction of symptoms and conditions associated with overweight and obesity:

- bariatric surgery;
- pharmacotherapy;
- psychological treatment.

When the classic obesity therapy does not yield the expected results or fails, there are treatments which can successfully intervene even in cases of Class III obesity, associated with symptomatic conditions such as Type 2 diabetes, hypertension, joint insufficiency etc. Among them, bariatric surgery is also indicated, the procedures of which are currently provided by laparoscopy (gastric banding, vertical gastroplasty, gastric bypass, sleeve gastrectomy, biliopancreatic diversion, etc.) (Kasalický, 2020).

Psychological treatments of obesity propose the following four main directions:

1. Cognitive behavioral therapy for weight loss - CBT.
2. Hypnosis.
3. Food inhibition training - (Food inhibition training - FIT).
4. Mechanisms of change - identifying the psychological factors that can influence the results.

Cognitive Behavioral Therapy (CBT) and hypnosis

One of the definitions of CBT states that it can be seen as a "scientifically based theoretical-methodological combination of behavioral therapy with cognitive therapy, with applications in pathology and health" which "has, in addition to the clinical character (treatment of diseases), a deeply educational and preventive (optimization, health promotion) character" (David, 2006).

To understand the importance of this therapy (of a psychological nature) for the regulation of body weight and for the maintenance of long-term results, but also its potential for the prevention of obesity and the improvement of health policies, an analysis of the studies conducted in the field is necessary.

Specialists in the field have shown that, to a large extent, patients return to their pre-treatment weight approximately within 3 years, as there are psychological obstacles to the acquisition and long-term adherence to an effective weight control behavior, precisely if one does not take into account of the importance of cognitive behavioral treatment in maintaining an ideal weight in the long term (Cooper & Fairburn, 2001).

It was concluded that when we add cognitive-behavioral techniques to standard behavioral treatments (which emphasize changing eating behaviors, reducing calorie intake, and increasing physical activity), CBT recipients' weight loss and weight maintenance outcomes become sustainable (Shaw et al., 2005; Grave et al., 2020).

Personalized cognitive-behavioral therapy for obesity (CBT-OB) combines the traditional procedures of standard obesity therapy (monitoring, goal setting, stimulus control, etc.) with a set of cognitive strategies and procedures that help the patient to maintain a long-term healthy weight loss, adopt a healthy lifestyle, and at the same time develop a way to maintain an optimal weight, by addressing the main mechanisms that negatively influence weight loss and its maintenance (Grave et al., 2020).

The efficiency of CBT, however, also has its questionable aspects, there are studies which support its results in the treatment of obesity, along with more reserved opinions in this respect.

There are also recent analyses showing that CBT interventions, although representing one of the first-line treatments in the psychological approach to obesity, still do not lead to significant weight loss, statistically speaking (Castelnuovo et al., 2017). The same reserved opinion was expressed by Cooper in 2010, according to a study, carried out together with other specialists, through which he tested a new cognitive-behavioral treatment for obesity, over a period of three years (Cooper et al., 2010). The immediate and long-term effects of the cognitive-behavioral intervention, designed specifically to minimize or prevent the return to the initial weight, were tested in the case of a number of 155 female participants. Although the main treatments generated results and led to the loss of 10% of the weight, it was found that the majority of the participants returned to their previous weight, the effect of the cognitive-behavioral treatment being maintained more in the short term than in

the long term. This led Cooper to consider that obesity is resistant even to psychological treatments for obesity, and it is unethical to assert the absolute effectiveness of CBT in treating obesity as long as we do not have data on its long-term effectiveness (Cooper et al., 2010).

Another study, on the contrary, supports the effectiveness of CBT treatment in obesity, demonstrating, in a group of 88 patients suffering from morbid obesity, treated with CBT-OB, and who followed a period of residential treatment, an average weight loss of 15% after 12 months, with no tendency to gain weight again - in the next 6-12 months (Grave et al., 2020). The effectiveness of the treatment was also supported by the results of 77 morbidly obese patients who, after completing a TCC-OB treatment delivered in a clinical setting, achieved a weight loss of 9.9% after 18 months – which confirms the idea that CBT-OB would be more effective than traditional lifestyle modification programs for weight loss.

A randomized clinical trial (Moraes et al., 2021) supports the idea of including CBT among the first-line interventions for obesity and highlights the need for a complex, multi-level approach.

The study compares the effectiveness of the intervention in three situations, namely a group that received support through lectures on health topics and health information, a group that was involved in supporting physical training, and the third, the interdisciplinary therapy group (physical training, nutritional advice and physical therapy), plus cognitive-behavioral therapy. Although there were improvements in all three groups, the findings show that the most important changes were observed in the complex intervention group - interdisciplinary therapies plus CBT, in which case there was an increase in the quality of life in all domains (physical, psychological, social and environmental) as well as an improvement in eating behaviors (Moraes et al., 2021).

Cognitive behavioral therapy is therefore a method which, in combination with the standard treatment of obesity, which includes elements of diet, nutrition, physical training and other healthy behaviors, can actively contribute to reducing the phenomenon of obesity and overweight.

In addition, there is increased interest in including, alongside cognitive behavioral therapy, a therapy that could be listed among the oldest and at the same time controversial methods of psychological intervention, namely, hypnosis.

Hypnosis is a psychological approach which has seen a growing revival in the clinical field in recent years. It can be described as an intervention based on two stages: one of induction, in which the participant is guided to achieve a state of concentration and attention, and another of suggestion - on the basis of which a wide range of behaviors and experiences, compelling from a subjective point of view, are modified and improved (Oakley & Halligan, 2013).

There is a growing body of research on the beneficial effects of treatments which include hypnosis, either on its own or as an adjunct to other involved therapies. In the treatment of obesity, the most common combination is between CBT (or other forms of cognitive therapy, behavioral therapy, etc.) and hypnosis. We should mention here a study published in the *Journal of Clinical Psychology* as early as 1985, whose results strongly support the use of hypnosis as an adjunct to the behavioral treatment of obesity (Bolocofsky et al., 1985). The conclusions of the study show that the addition of hypnosis not only led to a significant reduction in the weight of the participants during the program, but also weight loss continued after the end of the study, which was observed during the follow-up period.

A study (Erșan & Erșan, 2020) conducted on 32 participants with a BMI ≥ 30 to test the effects of hypnotherapy on weight control, by monitoring leptin, adiponectin (ADP) and irisin levels, demonstrated that after 10 weeks of hypnotherapy, biochemical analyses showed a decrease in BMI and serum leptin levels and an increase in ADP levels, which supported the conclusion that hypnotherapy works, being easy to apply and without potential side effects.

Moreover, hypnosis can prove effective not only for the actual weight loss of patients. In another study, as a result of the suggestions received, the subjects of hypnotherapy began to have increased physical activity, as well as eating behaviors appropriate to a healthy and balanced lifestyle (Roslim et al., 2021).

Some authors believe that the effectiveness of hypnosis should also be evaluated according to its possibility of replication. Methodological limitations sometimes reduce the possibility of replicating this treatment method, which is one of the recognized limitations of hypnotherapy interventions (Barabasz, 2012).

In a study related to the use of hypnosis in bulimia nervosa, it was concluded that its effectiveness, used together with other methods of cognitive-behavioral therapy, can be a conceptual and methodological basis suitable for an empirical investigation (Barabasz, 2007).

Other specialists, according to a recent study (Untas et. al., 2023) carried out on 82 participants in order to observe the side effects of hypnosis and self-hypnosis, found that after eight sessions of hypnosis, in addition to weight loss, by combining hypnosis and self-hypnosis with nutritional education, as a secondary result the participants in the study improved their self-esteem and acquired better coping strategies. They also had more energy than those in the non-hypnosis group, even at eight months after the therapy sessions ended.

These results indicate that hypnosis and self-hypnosis, in combination with nutrition education, may be promising interventions to assist patients in weight management programs, particularly by improving their coping strategies and increasing self-esteem.

Balancing body weight and maintaining a BMI in the "normal weight" category requires a change in habits and in the way of thinking, a change that generates psychological "tensions" and requires constant effort.

At the individual level, the treatment of obesity requires not only the knowledge of appropriate behaviors and the necessary cognitions, but also the acquisition of psychological skills and capacities by the individual (because most of the barriers that appear in the fight against obesity are of a psychological nature), so that he/she would be able to apply that information, conducive to a sustainable change in his behaviors.

In this sense, CBT and Hypnosis have results in the fight against obesity in the long term, because they contribute to endowing the participants with a set of attitudes and

psychological resources, with better coping strategies and behavioral decisions, which ultimately lead to a balanced lifestyle and increase the quality of life.

That is why we believe it is necessary that prevention policies, especially at the social - global level, also contain programs which contribute to obtaining and maintaining a balanced psychological - emotional and cognitive climate, in turn supporting the natural and constant adoption by the individual of a healthy lifestyle.

Conclusions

1. In the absence of urgent measures, over 50% of the world's population could become obese by 2025, a situation which requires finding sustainable solutions as quickly as possible.
2. Obesity is a condition with a complex etiopathogenesis and therefore it is recommended to approach the treatment in a multidisciplinary context, involving a clinical team made up of endocrinologists, nutritionists, surgeons, psychiatrists and psychologists.
3. The treatment of obesity requires finding effective strategies, resulting from combining standard treatments with psychological interventions, such as cognitive-behavioral therapy and hypnosis.
4. Reducing obesity involves prevention strategies, which imply the adoption of a healthy lifestyle, including a balanced diet and physical activity, training and fitness programs, etc.
5. CBT and hypnosis have an important role in relieving the psycho-emotional tensions which arise in the process of regulating body weight.
6. CBT and hypnosis are effective tools for adopting and maintaining long-term healthy lifestyle behaviors.

Conflict of interests

The authors declare no conflict of interests.

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