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The role of motivational interviewing in the management of obesity in adults

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Abstract

Introduction: The last 50 years have seen a significant global increase in the obesity rate. The prevalence of excess weight gain has doubled worldwide since 2000 and approximately one-third of the world's population is obese or overweight.

Purpose: To identify the role of motivational interviewing in the management of obesity in adults.

Methodology: This narrative review was based on the bibliographic search of reviews and research studies drawn from international databases. The exclusion criterion of the articles was the language other than English and Greek.

Results: There is evidence for the effectiveness of family-based behavioral treatment for controlling weight and improving health outcomes. Obesity-related health risks have been documented such as metabolic syndrome. The importance of dietary prevention is also a major modifiable factor in cardiovascular disease and diabetes mellitus. One of the most prevalent health-related behavior modification models is Motivational Interviewing which is a patient-centered communication style that uses specific methods such as reflective listening, autonomy support, shared decision-making, and eliciting change talk.

Conclusion: Recent studies support the use of motivational Interviewing for weight loss in primary care.

Keywords: Obesity; Motivational Interviewing; Modification Models; Weight Gain; Telehealth

1. Introduction

Over the last five decades, there has been a rapid increase in the global obesity rate [1]. Obesity is a clinical condition caused by the excessive accumulation of fat in the body which is associated with negative health effects [2]. The causes of obesity are varied and involve genetic, social, ecological, and political influences. Although many events and campaigns have been organized in recent years to raise public awareness about obesity and how to tackle it, obesity remains a serious public health problem and there is still a wide gap in the nutrition and quality of the food people can choose to eat. [2] Body Mass Index (BMI) is used for determining and diagnosing obesity according to World Health Organization (WHO) guidelines [3]. In the adult population, the WHO has defined "overweight" as a BMI of 25.0 to 29.9 and "obese" as a BMI ≥ 30.0. Obesity is further divided into three categories of severity: category I (BMI 30.0-34.9), category II (BMI 35.0-39.9), and category III (BMI ≥ 40.0) [3].

There are, however, large personal differences in body fat percentage for a given BMI value, which may be related to gender, ethnicity, and age [4]. Obesity increases the danger of many physical and mental diseases. The health problems caused by obesity that have a high mortality rate are cardiovascular diseases, type 2 diabetes, and respiratory, motor, and mental problems [4]. Obesity increases the risk of many physical and mental diseases. Also, obesity is closely

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associated with sleep disorders, anxiety, depression as well as reduced self-confidence and self-esteem. It is important to mention the negative influence of obesity on people's health-related quality of life, which affects individuals and their families [5]. Due to the absence of specific pharmacological measures, "lifestyle change" is still the mainstay of obesity management. People with obesity are recommended to lose at least 10% of their body weight through a combination of nutrition, exercise, and behavioral (or lifestyle) therapy [6]. Important short-term weight loss can be accomplished by consuming a portion-controlled diet. However, long-term weight control can be achieved through high levels of physical activity and ongoing contact between the patient and the therapist. In multiple cases, lifestyle changes result in substantial weight loss, leading to a major reduction in cardiovascular risk [6].

Because food choices are mainly determined by people's environment, governments must improve their policies and environment to decrease the availability of 'unhealthy' foods and to make healthier foods more affordable [7]. Policies should be modified to encourage the development of foods with decreased sugar, fat, and salt and to decrease the availability of unhealthy foods targeted at the children population. Policy-makers and professionals need to be made more sensitive to the possible effect of food advertising on human health and behavior and should encourage food producers to develop and advertise weight-friendly products [5-7]. Nutrition instructors should contribute to teaching how to evaluate food advertisements. Interventions that aim to motivate behavioral change (e.g. health promotion, nutrition education, motivations for healthy lifestyles, a tax on sugary beverages, and social marketing) and enforcement of actions that decrease the causes of obesity (e.g. policy changes, rules, and laws) are more likely to have a powerful effect on lowering the obesity crisis [8]

2. Methodology

The methodology followed was based on the bibliographic search of reviews and research studies drawn from the international databases Medline, Pubmed, and the Greek database Iatrotek. The keywords used were obesity, motivational interviewing, modification models, weight gain; and telehealth. The exclusion criterion of the articles was the language other than English and Greek.

3. Epidemiological Data Concerning Obesity

The overall incidence of excess weight gain has been twice as high globally since 2000 and approximately an estimated one-third of the global population has been identified as being overweight or obese. Obesity rates are equally elevated in both sexes [5]. BMI above 32 kg/m2 has been correlated with double mortality rates among females over 16 years. Obesity is one of the biggest problems affecting public health worldwide, as it is a considerable risk factor for numerous types of diseases which are both chronic and non. In the first Greek epidemiological study on obesity conducted in 2003 in Greece, emerged two interesting facts [9]:

- Women have a higher incidence of abdominal obesity, especially after menopause.
- Men overall are more obese than women, which is in contrast to other European countries, where overall obesity is higher in women.
- Corresponding data emerges for childhood obesity in our country.

In the same study (2003), the overall obesity rate was found to exceed 40% for boys and 30% for girls. Childhood and adolescent obesity in Greece is reaching alarming dimensions and this is due to the abrupt transition from the traditional Mediterranean diet to the Western way of eating on the one hand and the lack of physical activity on the other, with Greek children taking the sad first place in obesity in Europe, as well as in television viewing hours [9].

The increasing rate of obesity over the years started in the 1980s, the increase in obesity coincided with several changes in physical activity and food availability. One could detect an upsurge in obesity that coincided with the introduction of computers, increased television viewing, the use of private automobiles instead of public transportation, urbanization, and the formation of cities that are not pedestrian-friendly [10].

The incidence of obesity varies according to socioeconomic status, with slower rates of growth in BMI in high and middle-income countries [11]. While obesity was once considered a concern in upper-income countries, the incidence of obese or overweight children in upper-income countries, including the United States, Sweden, Denmark, Norway, France, Australia, and Japan, has declined or decreased since the early 2000s [12-14]. In the United States, obesity is estimated to be responsible for 111,909 to 365,000 deaths per year, while in Europe 1,000,000 deaths are attributed to being overweight [15].

On average, obesity decreases life span by six to seven years: BMI 30-35 decreases life expectancy by two to four years, while severe obesity (BMI > 40) shortens life expectancy by 10 years [16]. In low and middle-income countries, the rates of overweight and obesity are rising, most notably in urban areas. In China, a study based on 12,543 participants followed up for 22 years showed that the age-adjusted prevalence of obesity has risen from 2.15% to 13.99% in both sexes, from 2.78 to 13.22% in females and from 1.46 to 14.99% in males, respectively. The proportion of overweight African children below 5 years of age has risen by 24% since 2000. As of 2019, nearly half of Asian children below 5 years of age are either obese or overweight [15-17]. WHO data sets from sub-Saharan Africa unveil that the prevalence of overweight and obesity in adults and cachexia, underweight, and weight loss in children are inversely associated [12].

4. Motivational Interviewing

The importance of nutritional prevention is also a major modifiable factor for cardiovascular disease and diabetes. Many agencies have established several interventions to encourage and improve people's nutritional behaviors, as according to the World Health Organization, 1/3 of deaths worldwide are due to diet-related diseases such as complications from diabetes [12]. Nutritional interventions in terms of the recipient of the intervention are divided into individual and collective interventions. Their goal is to awaken the consciousness of the person concerned and bring him back to a healthier way of life [15]. Whether an intervention is effective or not depends not only on the type of intervention but also on whether the people concerned apply it.

Although different health behavior modification models, techniques, and programs have been designed and implemented worldwide for various conditions such as diabetes, hypertension, stress, and other factors, it has been shown that they can also be applied to modify various other pathogenic health-threatening conditions such as smoking, alcohol consumption, drug use, and eating disorders [17]. Motivational Interviewing is one of the most prevalent health-related behavior modification models. Motivational Interviewing is defined by its creators as "a client-centered coaching method for enhancing motivation for change through the examination and dissolution of ambivalence" and has its roots in Carl Rogers' client-centered psychotherapy that emphasizes the positive human perspective [18].

The Motivational Interviewing method has been applied to people with health problems as well as health promotion programs [18]. Motivational interviewing is one of the short interventions used by health professionals in various contexts with the aim of providing opportunities for health service users to increase knowledge about health issues, to awaken and think in order to adopt changes, which will improve their health [19-20]. The term short intervention means a counseling intervention of a short duration from 5 to 60 minutes with a frequency of 1 to 5 sessions. The process depends on the person, the context (location, stability of meetings, fixed duration), and the counselor's training. A brief intervention such as MI can be used effectively across the spectrum of health promotion, prevention of illness, early intervention measures, and therapy. However, it is considered preferable to be chosen as a method to prevent a problem from developing [22-24]. Motivational interviewing identifies an existing or potential problem (for example, an unhealthy behavior) and helps to stop the existing harms that the problem is causing [20]. MI is described as a special way of helping the individual to recognize and act on current or potential problems. Achieving change is achieved through motivation analysis, decision-making, and change facilitation. It is important that people understand that they can exercise control over their lives and bring about changes in their behavior. The best way to help people change their habits is not simply to educate them but to increase the motivation given to a person to make changes in health-related behaviors [25-28].

Within the MI facilitates the individual's transition from the successive steps of behavior change to the action stages, where commitment to behavior change begins [28]. The key points of motivational interviewing in accordance to Rollnick & Miller, 1995 are as follows:

- Motivation for change is elicited by the individual and not enforced by the advisor. Motivational interviewing is based on the identification and motivation of the person's internal values and aims to achieve behavioral change.

It is the task of the individual, not the counselor, to clearly and concisely formulate and resolve ambivalent feelings. Ambivalence takes the form of a conflict between satisfying all desires and suppressing them, each of which has some perceived cost and benefit. The counselor’s task is to facilitate the expression of both aspects of ambivalence and lead the person to an acceptable solution to the problem that sparks change.

Motivational Interviewing is a four-step process. There are four overlapping processes that make up Motivational Interviewing: engagement, focus, prompting, and planning [26]. They are sequential and iterative and are often diagrammed as steps, with engagement at the bottom being the first step. It should be recognized that the practice of

Motivational Interviewing techniques aims to carry out the contents outlined in its four elements. Fulfilling the spirit of Motivational Interviewing leads to the success of its procedures [25-28].

In recent years health professionals have shown an increased interest in using motivational interviewing in the healthcare services context. Motivational interviewing is being adopted and used in patients with health problems, both in hospitals and in primary health care. Recent studies have focused on the prevention of chronic diseases, such as smoking quitting, weight reduction, increasing physical exercise, decreasing alcohol consumption, and lowering stress. Because past health behaviors predict reduced health risk, behavior modification is an important outcome of prevention efforts [24].

5. The role of motivational interviewing in obesity

One of the chronic diseases with an elevated incidence in both developing and undeveloped countries is the problem of obesity, also known as the disease of well-being. The World Health Organization (WHO) states that the prevalence and risks caused by obesity are comparable with those caused by malnutrition [29]. Obesity is a complicated condition that arises when a person's weight is above that which is considered to be healthy for his or her height. Obesity impacts both children and adults. Obesity is challenging to prevent because of the absence of ineffective interventions combined with the influence of compound environmental conditions, such as the nutritional behavior of the household environment (modeling), availability of healthy meals, low income, product accuracy, opportunities for physical exercise and the community setting [27]. An individual's eating habits are determined by many factors some of which are [29-30]:

- Biological factors such as hunger, appetite, and taste.
- Economic factors such as cost, income, and availability.
- Physical factors such as access, education, skills, and time.
- Social factors such as culture, family environment, peers, and meal norms.
- Psychological factors such as mood, anxiety, and guilt.
- Attitudes, beliefs, and knowledge about nutrition.

Taking certain medications also plays a part. The best treatment is early prevention and one of the methods of prevention is awareness through education. Education about proper lifestyle reducing the use of unhealthy foods, increasing physical activities, and problem-solving education are among the effective methods to prevent obesity. Proper education and the use of behavior change models can lead to lifestyle changes and the removal of unhealthy behavior, which can mean a healthier life in the future [31].

Motivational interviewing (MI) is a communication approach that is rooted in cognitive therapy and is formulated to help individuals identify motivation to change a dysfunctional - non-helpful behavior [25,29]. Behavior modification includes goal setting, stimulus control, anxiety, trigger management, self-monitoring, cognitive reorganization, anxiety management, problem-solving, and support systems [32]. MI also helps people to set goals and increase their self-efficacy to accomplish their goals [17]. MI has been successfully used in interventions for weight loss in adults, physical exercise, smoking quit-ting, and reducing alcohol and cannabis use. Targeting changes in diet and physical activity are cornerstones of weight management interventions [33]. MI increases lifestyle for weight reduction with more sustained results among overweight and obese individuals compared to traditional nutrition education programs. MI is more efficient in promoting self-efficacy of negative emotions, food availability, social pressure, physical distress, and leisure activities compared to standard nutrition training [30]. Navidian et al. examined the relationship between lifestyle efficacy and excess weight and obesity. They reported that subscales of lifestyle effectiveness in relation to weight were significantly correlated with obesity, except for negative emotions and physical distress [34]. A study by Walpole et al. showed a positive effect of MI on self-efficacy and weight loss in the treatment group in comparison to the control group. This was related to the improvement in psychological and physiological health associated with our findings. Even though the aforementioned study only examined self-efficacy and not its subscales, however, similar results can be expected, as lifestyle subscales with weight efficacy can fundamentally change based on self-efficacy [35].

Recent studies support the use of MI for weight loss in primary care. Wright, Velicer, and Prochaska in 2009 achieved positive and meaningful results in investigating the predictive power of MI on dietary fat intake [36]. Khezeli, Ramezankhani, and Bakhtiyari in 2012 have also reported positive outcomes on the effect of education on nutritional knowledge and stages of change for fruit and vegetable intake in older adults with MI [37].

In the studies reviewed, MI was implemented by clinicians, dieticians, psychologists, and paramedical staff trained in the principles of MI implementation. These studies also limited their study sample to individuals with obesity based on body mass index [26-35]. In many studies, MI is combined with other methods to better achieve the goal, such as

psychoeducation on nutrition and others [32]. MI focuses on raising sensitivity around triggering problem behaviors, recognizing emotions and benefits related to weight concerns, controlling urges around common weight-related behaviors, offering support to enable change, and setting pragmatic targets to achieve the best possible outcome [29-34]. Effective behavioral strategies, such as MI, when used for weight loss, emphasize self-monitoring, physical activity, goal establishment, problem-solving, establishing a support system, controlling stressors and stimuli, cognitive reorganization, alternative coping behaviors, weight control, and maintenance plan, structured meal patterns, possible meal swaps, self-monitoring of meal serving size and management of a potential regression from the aim. Incorporating MI in the treatment of obesity is beneficial for weight and body mass reduction [26-30]. In recent years, several studies reported that the application of MI in weight loss programs lasting more than four months results in an overall average weight loss of 0.45 kg (1lb) per week. The implementation of multiple behavioral modification measures generates more significant weight loss [30-36]. By nine to ten months of MI, a greater proportion of patients (approximately two-thirds) achieve and sustain weight loss. In addition to exercising and dieting, many studies consistently showed that extended behavioral treatment achieves important weight loss [35].

In patients who were able to lose weight and reach their ideal weight, study results showed that with long-term nutritional and psychological support, they avoided weight regain [30-35]. Nevertheless, the interaction of the genetic risk factors of obesity is not fully comprehended and the results of studies suggest that these agents may be involved in weight regain. Comprehensive support makes weight loss and weight maintenance less difficult and more successful.

6. Motivational interviewing and telehealth for weight management

Telemedicine has shown huge development during the COVID-19 pandemic and is very useful for therapeutic and rehabilitation programs for various diseases such as Post intensive care syndrome and Post COVID–19 syndrome [38-39]. In particular, telemedicine overcomes the barrier of location resulting in the provision of care in remote areas as well as in areas where health facilities are underdeveloped [40]. Telemedicine combined with motivational interviewing plays a substantive role in the management of obesity [40]. In particular, the health professional can draw up a care plan that will contain advice, a proper weight loss program, and video sessions on how to properly prepare meals. In addition, costs are also combated because travel is reduced as the procedure is achieved with the use of a technology device [34]. Finally, telemedicine also contributes to patient compliance where Alencar's study showed that with weekly guidance through telemedicine, patients showed more compliance and had better weight management [41-44].

Motivational interviewing has been shown by research to have encouraging results in obesity management through behavioral change, healthy lifestyle, and exercise [25-30]. Motivational interviewing using telehealth has shown moderate effectiveness compared to face-to-face motivational interviewing but is still satisfactory because it helps as a facilitator in remote and rural areas [44]. However, further research is needed to see the effectiveness accurately.

7. Conclusion

Brief weight loss interventions incorporating MI provided multiple benefits beyond the weight loss that was the initial goal, such as reducing binge eating episodes, controlling impulses, and reducing depression. Motivation is an essential measure of successful management of obesity (i.e., adherence to treatment) [22-27]. Motivation is crucial if behavior change is to be maintained in the long term. MI is a very powerful communicative technique, a non-judgmental, cooperative discussion strategy that strengthens the patient's motivation and encourages engagement toward behavior change. Motivational interviewing was shown to be successful in raising lifestyle weight effectiveness in individuals with overweight and obesity [26-29]. The effectiveness and continuity of the weight loss program would be achieved by using the MI technique, especially in healthcare homes as well as both urban and rural health centers. Further research is warranted to identify behavioral differences between overweight and obese women before conception. Longitudinal studies are required to determine the appropriate strategies for the study population to pursue to achieve the best possible outcomes from the intervention and whether additional encounters should be strengthened [30-36]. Clinical assessment includes the patient's obesity history, physical examination, an assessment of lifestyle behaviors, psychological state, and laboratory evaluation.

Health professionals need to become more engaged in obesity prevention and to incorporate multi-behavioral interventions in its management and prevention. There is a clear need to transition from using nutrition and exercise alone as the sole measures for weight loss to a more holistic focus that involves behavioral therapy. Furthermore, a Multidimensional Strategic Approach to obesity care management will enhance the compliance and attachment and the maintenance of lifestyle changes. Guidelines for the appropriate clinical appraisal of obese adult patients have been contained in the recent European guidelines for the management of obesity in adults published in 2015 [42], as well as

the Swiss consensus on obesity published in 2016 [43]. The epigenetic alterations and interactions between our genes and the environment have a strong impact on human health and disease. More and more evidence unveiling the participation of epigenetics in the development of obesity. Predisposition to obesity may arise from the influences of environmental determinants, such as nutrition and lifestyle, on the epigenetic remodeling of early postsynaptic development and parental gametes. In summary, a better knowledge of the various dimensions of obesity, including the trend of weight loss recovery, intersectional variations in pathogenesis, and response to treatment, is required to develop both effective and cost-effective measures. This knowledge will in time benefit health-related complications such as the prevalence of diabetes. Further research is required to help identify behavioral changes that are effective and available to individuals from diverse backgrounds. More research must be conducted to develop more effective and safer medications to help obese individuals lose body weight and sustain a healthy weight over the long term. In addition, we need to devote greater efforts and resources to the prevention of obesity in both children and adults. Prevention is the key element, as treatment alone is not very efficient and may not reverse the obesity epidemic in the long term.

Compliance with ethical standards

Disclosure of conflict of interest

There are no conflicts of interest.

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