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Review

A Narrative Review of the Mediterranean Lifestyle and Its Role in Obesity Prevention and Management

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Abstract: The Mediterranean lifestyle (ML), encompassing key elements such as the Mediterranean diet (MD), regular physical activity, social engagement, sleep-enhancing habits, sustainable food practices, including reducing food waste and opting for seasonal and local products, proximity to nature, and a focus on slow living, has garnered increasing interest for its potential in obesity prevention and management. This narrative review examines how these lifestyle characteristics may influence body weight regulation, metabolic health, and obesity-related outcomes. A thorough literature search was conducted to synthesize findings from epidemiological studies, clinical trials, and mechanistic research. Evidence suggests that adherence to the MD is linked to lower obesity rates, improved metabolic markers, and reduced risk of weight gain. Key components contributing to these effects include high fiber intake, healthy fatty acids from olive oil and nuts, and a balanced macronutrient profile that promotes satiety and reduces inflammation. Furthermore, lifestyle practices such as regular physical activity, strong social connections, and sleep-enhancing habits may further support weight management. Despite consistently favorable findings in observational studies, intervention trials reveal variability in individual responses, highlighting the need for personalized approaches. Future research should explore strategies to enhance adherence to the MD and investigate the interactions between diet, physical activity, and psychosocial factors in obesity prevention.

Keywords: Mediterranean diet; Mediterranean lifestyle; obesity prevention; sustainable food

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1. Introduction

The ML, a holistic approach to health and well-being, is based on several key pillars that have been shown to contribute to the prevention and management of obesity. These pillars include a healthy and balanced diet, regular physical activity, strong social interaction, connection to nature, sustainability, and healthy sleep habits. Together, they form a comprehensive way of living that promotes a balanced and healthy lifestyle, with a focus on overall well-being and the maintenance of a healthy body weight. At the core of the ML is the MD, which is rich in fruits, vegetables, whole grains, legumes, nuts, and olive oil, with moderate consumption of fish and poultry. This diet, which emphasizes the consumption of fresh, locally grown produce and healthy fats, is associated with various health benefits, including weight management, improved cardiovascular health, and a reduced risk of chronic diseases [1].

Regular physical activity is another key pillar of the ML. Engaging in moderate, daily physical exercise, such as walking, cycling, or gardening, is common in Mediterranean communities. This not only helps in weight regulation, but also improves overall health,

including better cardiovascular function, enhanced mood, and increased life expectancy. Physical activity, combined with a diet rich in nutrients, plays a vital role in maintaining a healthy weight and preventing obesity [2].

The MD is not just a healthy nutritional way; it also promotes mindful eating practices, often with family and friends, which enhances the social aspect of meals and fosters stronger social ties. The ML also emphasizes the importance of social interaction. In many Mediterranean cultures, socializing is an integral part of daily life, with meals often shared with family, friends, and neighbors. This strong sense of community and social support can contribute to emotional well-being, reduce stress, and improve mental health, all of which are crucial for the prevention of obesity and related health conditions [3].

Furthermore, living near nature is another fundamental aspect of the Mediterranean way of life. Many Mediterranean communities have easy access to outdoor spaces, and spending time in nature is encouraged. Whether through leisurely walks in the countryside or swimming in the sea, this connection to the natural environment supports physical and mental health and promotes a lifestyle that is more active and less sedentary [4].

Sustainability also plays a significant role in the ML, which often prioritizes local, seasonal, and organic food sources, promoting environmentally friendly practices. The Mediterranean way of living advocates for a balanced relationship with nature, both in terms of food consumption and environmental impact, making it a model for sustainable living and healthy eating [5].

Lastly, healthy sleep habits are a crucial pillar of the ML. Adequate sleep, often following the natural rhythm of day and night, is essential for maintaining good health. Proper rest supports metabolic function, emotional well-being, and cognitive performance, contributing to the overall success of the lifestyle in managing body weight and promoting long-term health [6,7].

All these pillars form the foundation of the ML, which has proven to be a protective factor against obesity. By promoting healthy eating, regular physical activity, strong social bonds, sustainability, and good sleep practices, the specific lifestyle helps individuals maintain a healthy weight and reduce the risk of developing obesity and other chronic diseases [8].

The purpose of this review article is to explore the key factors of the ML that influence obesity prevention and management and to examine the individual variations in response to these factors, highlighting the need for personalized strategies to combat obesity.

2. Materials and Methods

This narrative review synthesizes and analyzes findings from the existing studies on the ML and its role in obesity prevention and management. A comprehensive search of relevant literature was conducted across multiple databases, including PubMed, Scopus, and Google Scholar, using key terms such as “ML AND obesity”, “MD AND obesity”, “sociality AND obesity”, “sustainability (or Food waste or Seasonal-local products) AND obesity”, “proximity to nature AND obesity”, “physical activity AND obesity”, and “sleep patterns AND obesity”. Studies published in English, between 2000 and 2024, were included. Articles included in this review were selected based on their relevance to the research topic, quality of methodology, and contribution to the field [9,10].

The review focused on epidemiological studies, clinical trials, and mechanistic research that examined the effects of the MD patterns, physical activity, sleep habits, and social engagement on obesity prevention and management. The MD, as part of the broader ML, has been extensively studied for its effects on weight regulation and obesity prevention [11]. Key components such as the consumption of fruits, vegetables, whole grains, olive oil, and fish have been shown to reduce the risk of obesity and chronic diseases associated with

it [12]. Moreover, the combination of the MD with regular physical activity is believed to be particularly effective in managing obesity [13]. Physical activity, ranging from daily walking to structured exercise programs, has been found to enhance the beneficial effects of the MD on weight regulation [14].

3. Results

3.1. MD and Obesity Prevention

Role of the MD in Obesity Regulation

MD has been widely recognized for its potential in preventing and managing obesity. This diet emphasizes plant-based foods, healthy fats, particularly olive oil, a moderate intake of fish, and low consumption of red meat and processed foods. Numerous studies have shown that adherence to the MD can help prevent obesity and reduce the risk of obesity-related diseases. The MD, rich in antioxidants and anti-inflammatory compounds from fruits, vegetables, and olive oil, has been linked to improved weight regulation and reduced abdominal obesity. This connection is primarily due to the high levels of polyphenols and unsaturated fats found in olive oil and other plant-based components, which help reduce adiposity through mechanisms such as inflammation reduction and enhanced insulin sensitivity [15].

The diet's high fiber content supports weight loss by increasing satiety and reducing overall calorie consumption. Research indicates that fiber-rich foods from legumes, vegetables, and whole grains not only help maintain healthy digestion, but also contribute to the reduction of caloric intake by enhancing feelings of fullness and reducing appetite [16]. Olive oil, a basic component of the MD, is linked to improved body fat distribution and reduced visceral fat. A study found that individuals consuming an MD enriched with olive oil showed significant reductions in visceral fat, which is a key contributor to metabolic diseases such as Type 2 diabetes and cardiovascular disease [16,17]. Studies have confirmed that individuals adhering to the MD typically experience a healthier weight profile, improved metabolic function, and reduced risk of obesity compared to individuals following other dietary patterns [18].

3.2. Physical Activity and Obesity Management

Physical activity is another essential component of the ML that plays a significant role in preventing and managing obesity. The lifestyle encourages regular physical activity such as walking, cycling, gardening, and social events involving movement. A combination of the MD and regular physical activity results in improved weight management and a reduced risk of obesity. Studies suggest that both dietary adherence and physical activity are crucial for achieving optimal weight control, especially when combined. Studies also suggest that the MD, along with moderate physical activity, improves fat metabolism, reduces the risk of chronic diseases, and contributes to maintaining a healthy weight. According to one study, individuals who combined the diet with physical activity had better control over their body composition, with reduced visceral fat and increased lean body mass. The Mediterranean approach to physical activity encourages activities that improve cardiovascular health and enhance muscle mass, supporting healthy body composition and weight management [19]. Regular low-to-moderate-intensity exercise, as promoted by the Mediterranean culture, improves overall physical fitness, supports fat oxidation, and reduces the risk of metabolic syndrome.

3.3. Sleep Habits and Social Engagement

In addition to diet and physical activity, the ML places significant emphasis on sleep habits and social engagement, both of which influence weight regulation [20].

3.3.1. Sleep and Obesity

Sleep plays a key role in regulating appetite and body weight. Studies suggest that inadequate or poor-quality sleep can lead to increased appetite, particularly for high-calorie foods, thus promoting weight gain. In the context of the ML, adequate sleep is prioritized, which may help mitigate obesity risks. Poor sleep quality and insufficient sleep are associated with a higher risk of obesity and metabolic dysfunction. Chronic sleep deprivation disrupts the balance of hunger-regulating hormones, such as ghrelin and leptin, which can lead to overeating and weight gain. A study demonstrated that inadequate sleep significantly increased the likelihood of obesity, particularly abdominal fat accumulation [21]. Studies have shown that people who follow Mediterranean sleep habits, prioritizing sufficient and restful sleep, have a better body mass index (BMI) and reduced weight gain risk. The ML places a strong emphasis on relaxation and sleep quality, which is positively correlated with weight control and metabolic health [22].

3.3.2. Social Engagement and Its Impact on Obesity

The ML emphasizes strong family bonds and social interactions, which contribute to emotional well-being. Positive social support systems are linked to healthier eating behaviors and a lower likelihood of obesity. Social engagement and support are associated with healthier lifestyle behaviors, including improved dietary patterns and increased physical activity, both of which contribute to weight management. The Mediterranean culture's emphasis on communal eating and social interactions encourages the intake of nutrient-dense foods and active participation in physical activities, which help maintain a healthy weight and prevent obesity. Strong social ties and regular family meals, common in Mediterranean cultures, promote healthier eating patterns and discourage the adoption of unhealthy, sedentary behaviors [23]. Studies have found that individuals who regularly engage in shared meals are less likely to experience weight gain or obesity, as they tend to have better control over their food choices and maintain a balanced lifestyle.

Table S1 presents selected key studies examining the relationship between adherence to the MD and obesity or cardiometabolic health outcomes. Studies were chosen based on scientific relevance, study design (e.g., RCTs and cohort studies), sample size, citation impact, and recency. We aimed to highlight a representative set of influential research covering both classic and recent findings [24]. For further details, please refer to Table S1 in the Supplementary Data section.

3.4. Sustainability and MD

Sustainability within the ML involves a focus on local, seasonal foods, reduced food waste, and a smaller environmental footprint. This diet emphasizes plant-based foods, with an emphasis on vegetables, fruits, legumes, whole grains, and nuts, along with modest portions of animal products. These practices not only benefit health, but also help in addressing such issues as environmental degradation and the overconsumption of processed foods that contribute to obesity. The MD encourages a reduction in food waste by focusing on seasonal and locally sourced ingredients. By using produce at its peak season, this diet reduces the environmental costs associated with food production, transportation, and storage. Research has shown that diets based on local, seasonal products have a smaller carbon footprint compared to those relying on processed foods or non-seasonal products. This environmental consideration is tied to promoting more natural, unprocessed foods, which are also crucial for maintaining a healthy weight and reducing the risk of obesity.

In the Mediterranean region, there is a strong tradition of supporting local farmers and markets. Local produce tends to be fresher and more nutrient-dense, and when it is consumed in season, it naturally reduces the need for high-calorie, processed foods [25]. By

encouraging the consumption of seasonal, local fruits and vegetables, the MD helps people access nutrient-dense foods that are low in calories and rich in fiber and antioxidants, thereby supporting weight control and metabolic health [26].

We chose to focus on the three sustainability practices, seasonal and local products, food waste reduction, and support for local agriculture, based on their direct, proven impact on both the prevention of obesity and sustainability. These practices were selected for their clear relationship with improving both personal health (through better nutrition) and environmental health (by reducing the carbon footprint and reliance on processed foods). These three practices are considered not only feasible but also essential for a wider adoption of the ML globally. Practices such as reducing food waste and sourcing food locally have been shown to have significant environmental benefits, while also supporting more nutrient-dense, lower-calorie food choices that can aid in obesity prevention. Additional practices were considered, but these three were deemed most accessible and impactful based on the current research and the global adoption potential of the MD [27].

3.5. Food Waste and Its Impact on Obesity Prevention

Food waste is a major environmental and economic issue globally, and it also contributes to the excess consumption of food. The MD encourages the use of all parts of plants and animals to minimize food waste, fostering a sustainable and responsible approach to food consumption. The MD promotes the use of whole foods, which minimizes food waste by encouraging the consumption of leftovers or creatively using parts of plants (e.g., vegetable tops, stems, and leaves) and animal products (e.g., using bone broths, offal). These practices contribute to more sustainable eating habits, while simultaneously promoting healthier food choices, as they encourage less processed food and reduce caloric intake that often comes from high-calorie convenience foods. One way that food waste reduction may influence obesity prevention is through mindfulness about food choices and portion sizes. The Mediterranean culture emphasizes shared meals and careful meal planning, which can reduce food waste and prevent overeating. This approach fosters a more conscious relationship with food, emphasizing quality over quantity, and encourages people to eat according to their hunger, rather than overeating or relying on unhealthy snacks and processed foods [28].

3.6. Seasonal and Local Products and Obesity Prevention

Consuming seasonal and local products is a hallmark of the MD. These foods are typically fresher, more flavorful, and packed with essential nutrients that support overall health and weight regulation. Seasonal fruits and vegetables are often fresher and contain more nutrients compared to non-seasonal varieties, which are usually transported from faraway distances and may lose their nutritional value over time. A diet rich in seasonal produce ensures higher fiber intake, which is important for satiety and weight management. Furthermore, these foods are often lower in calories and free from the added sugars and preservatives found in processed foods. Studies have shown that a high intake of fruits and vegetables is inversely associated with obesity risk due to the lower calorie density and high fiber content of these foods. Eating in alignment with the seasons ensures a balanced and varied intake of nutrients throughout the year. For example, during the colder months, root vegetables such as carrots and potatoes are abundant, offering high fiber and vitamin-rich options. In the warmer months, fruits such as tomatoes, melons, and berries are abundant, hydrating, and low in calories [29]. This balance helps maintain a healthy metabolism and supports the body's natural rhythms, which can aid in weight regulation and obesity prevention [30].

3.7. The Role of Mediterranean Sustainability in Reducing Obesity

By integrating sustainability into the diet through local, seasonal food choices and reducing food waste, the ML fosters healthier food practices. These sustainable habits support a balanced approach to weight management by prioritizing whole, unprocessed foods that are naturally low in calories and high in essential nutrients. Moreover, sustainability efforts—such as reducing food waste—directly correlate with less reliance on ultra-processed foods, which are often high in sugar, salt, and fat and contribute to the development of obesity and related chronic conditions. Therefore, maintaining a sustainable food system that promotes the consumption of local, seasonal products and minimizes food waste may offer significant benefits in the fight against obesity.

Table 1 summarizes the benefits of sustainable Mediterranean practices on obesity prevention.

Table 1. Benefits of sustainable Mediterranean practices for obesity prevention.

Sustainable Practice	Obesity Prevention Benefit	Example
Seasonal and local products	Nutrient-dense, low-calorie foods that support weight control	Fresh vegetables, fruits, and whole grains
Food waste reduction	Promotes mindful eating and reduces overconsumption of processed foods	Using leftovers, reducing excess portions
Support for local agriculture	Access to fresher, more affordable foods, which help maintain a healthy weight	Shopping at local farmers' markets

3.8. Mechanisms by Which the ML Affects Obesity

The ML, with its emphasis on diet, physical activity, social interaction, and environmental factors, may influence obesity through various biological and physiological mechanisms. Below, several key pathways by which this lifestyle contributes to weight regulation and the prevention of obesity are explored [31].

3.9. Impact on Satiety and Appetite Regulation

One of the primary mechanisms by which the ML may influence obesity is through its effects on satiety, the feeling of fullness that helps regulate food intake. The MD is rich in fiber, healthy fats, and protein, all of which contribute to increased satiety. High fiber intake, particularly from fruits, vegetables, and whole grains, slows gastric emptying, promotes a feeling of fullness, and reduces overall calorie intake. This mechanism has been shown to be effective in preventing overeating, a key factor in the development of obesity [32].

Moreover, the MD's emphasis on healthy fats, particularly olive oil, has been linked to better appetite regulation. Olive oil is rich in monounsaturated fatty acids (MUFA), which have been shown to influence hunger-regulating hormones, such as ghrelin and leptin. Ghrelin, often referred to as the "hunger hormone", stimulates appetite, while leptin signals to the brain that the body has sufficient energy stores. Consuming MUFAs may reduce ghrelin levels and increase leptin sensitivity, thereby reducing hunger and promoting weight maintenance [33].

3.10. Fat Metabolism and β-Oxidation

Another crucial pathway through which the ML may impact obesity is its effect on β-oxidation, the process by which the body breaks down fatty acids for energy. The MD, particularly with its emphasis on healthy fatty acids into olive oil, nuts, and fish, can improve fat metabolism and enhance β-oxidation. The polyunsaturated fatty acids (PUFAs) found in fish, such as omega-3 fatty acids, have been shown to promote β-oxidation and improve fat utilization, reducing the storage of excess fat in adipose tissue. This process not

only supports weight loss, but also reduces the risk of obesity-related metabolic disorders, such as insulin resistance and non-alcoholic fatty liver disease [34].

Additionally, physical activity, another pillar of the ML, is known to enhance β-oxidation by increasing the body's reliance on fat for energy during exercise. Regular physical activity increases mitochondrial function and fat oxidation rates, which helps in reducing overall body fat and preventing obesity [35].

3.11. Hormonal Regulation and Insulin Sensitivity

The ML's influence on obesity extends to hormonal regulation, particularly in the context of insulin sensitivity. Insulin is a hormone that regulates glucose metabolism and fat storage, and impaired insulin sensitivity is a hallmark of obesity [36]. The MD, with its emphasis on whole foods, high-fiber vegetables, and healthy fats, has been shown to improve insulin sensitivity, thereby enhancing the body's ability to regulate blood sugar levels and prevent fat accumulation. Several studies have demonstrated that the consumption of healthy fats, such as those found in olive oil, can improve insulin sensitivity by modulating the expression of genes involved in glucose and lipid metabolism. The MD's ability to reduce inflammation, which is often elevated in obesity, also contributes to better insulin sensitivity. Lowering systemic inflammation is essential in preventing the development of obesity and its associated metabolic complications.

3.12. Impact on Inflammation and Oxidative Stress

Chronic low-grade inflammation and oxidative stress are critical factors in the development of obesity and related metabolic disorders. The MD has been shown to have anti-inflammatory and antioxidant properties, largely due to the high intake of polyphenols found in olive oil, fruits, vegetables, and nuts. These antioxidants neutralize free radicals, reducing oxidative stress and inflammation that can impair metabolic function and contribute to weight gain [37]. In particular, the polyphenols in olive oil, such as hydroxytyrosol, have been shown to exert anti-inflammatory effects by inhibiting pro-inflammatory cytokines and promoting the expression of anti-inflammatory molecules. These mechanisms may play a significant role in mitigating the inflammatory responses that contribute to obesity and other chronic conditions [38].

Figure 1 summarizes the effects of the Mediterranean diet on hormonal regulation, oxidative stress, fat metabolism, and appetite control.

3.13. Influence on Gut Microbiota

The MD's high fiber content not only promotes satiety and improves insulin sensitivity, but also positively influences the gut microbiota, which has a profound impact on obesity. A balanced and diverse gut microbiota is essential for the digestion of food and the regulation of metabolism. Studies have shown that the MD, with its emphasis on plant-based foods, probiotics, and prebiotics, fosters a healthy gut microbiome, which, in turn, promotes the metabolism of fats and carbohydrates, leading to improved weight regulation and reduced obesity risk [39]. The MD may also support the production of short-chain fatty acids (SCFAs), which are produced during the fermentation of fiber by gut bacteria. SCFAs, such as butyrate, have been shown to promote fat oxidation, enhance insulin sensitivity, and reduce appetite, all of which contribute to obesity prevention.

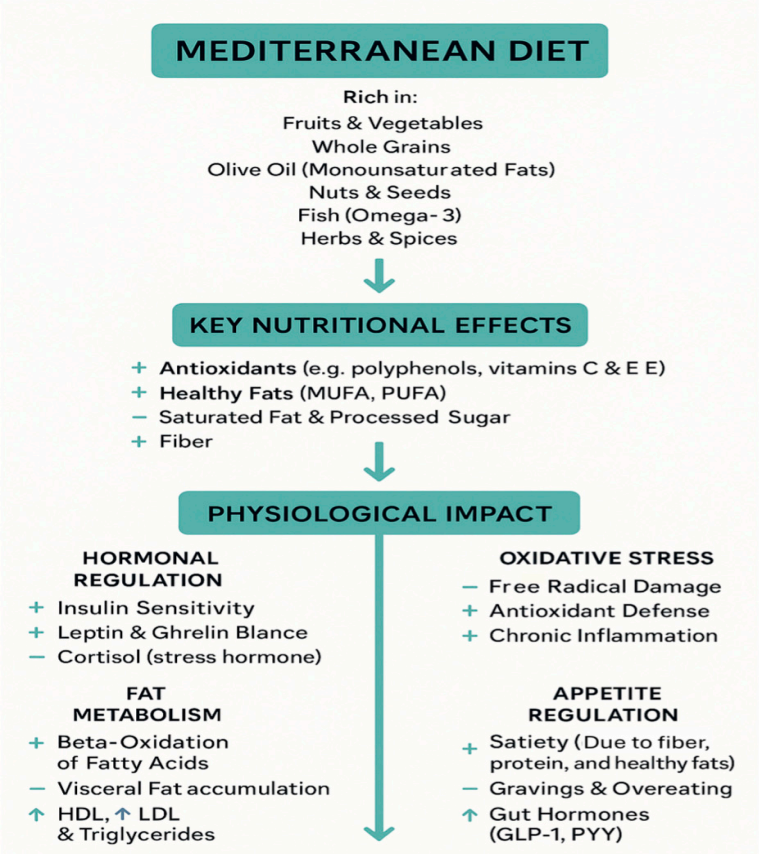

Figure 1. The effects of the Mediterranean diet on hormonal regulation, oxidative stress, fat metabolism, and appetite control.

3.14. Applicability of the ML Outside Its Native Region

We recognize that the applicability of the ML outside its native region presents some challenges. Factors such as the availability of local products, cultural differences, and economic conditions can influence how easily the ML can be adopted in non-Mediterranean countries. For example, the wide availability of seasonal, local, and fresh produce may be a limiting factor in some regions where climate and agricultural practices differ significantly. Additionally, cultural preferences for different dietary patterns and food preparation methods can pose challenges in fully implementing Mediterranean practices.

However, many of the core principles of the ML, such as the consumption of fresh fruits and vegetables, the inclusion of whole grains and legumes, and an emphasis on physical activity, are adaptable to various cultural contexts. Promoting these aspects, particularly the adoption of plant-based foods and the encouragement of regular physical exercise, can lead to positive health outcomes, even outside the Mediterranean region. Therefore, while some aspects of the MD may require adjustment based on local circumstances, the underlying principles can still be beneficial in improving public health and preventing obesity in other areas of the world.

4. Discussion

The ML has gained considerable attention for its potential in preventing and managing obesity due to its sustainable, health-oriented practices that emphasize both individual well-being and environmental sustainability. Through an in-depth review of the literature, it is clear that the Mediterranean diet (MD) offers a balanced and effective approach to managing obesity. By prioritizing plant-based foods, including fruits, vegetables, legumes,

whole grains, and nuts, along with moderate portions of animal products, the MD supports better metabolic outcomes and has been consistently associated with reduced obesity rates.

One key aspect of the MD is its emphasis on whole, nutrient-dense foods that tend to be lower in calories and higher in fiber [40,41]. The dietary pattern encourages the consumption of foods that promote satiety and regulate appetite, which are crucial factors in preventing overeating [42]. Additionally, the MD's focus on healthy fatty acids—especially those found in olive oil—has been shown to influence critical hormonal pathways related to obesity regulation, including the reduction of ghrelin, the hunger hormone, and the enhancement of leptin sensitivity, which plays a role in promoting satiety and energy balance. These hormonal effects are significant in supporting weight regulation by reducing the drive to consume excessive calories.

While the MD has been linked to improved insulin sensitivity and a reduced risk of developing type 2 diabetes and obesity, it is important to note that the MD's effectiveness is shaped by multiple factors [43]. Diets rich in monounsaturated fats and low in refined sugars, typical of Mediterranean cultures, have demonstrated a reduction in insulin resistance [44]. The intake of whole grains, legumes, and fresh fruits helps maintain steady glucose levels and prevents insulin spikes, which are associated with fat accumulation, particularly around the abdominal region.

Beyond its metabolic benefits, the MD also plays a role in fat oxidation [45]. Research highlights the ability of monounsaturated fats, polyphenols, and antioxidants present in Mediterranean foods, such as olive oil, red wine, and certain herbs, to promote fat burning during physical activity. These dietary components support fat oxidation, which can contribute to better weight management and the prevention of obesity [46,47]. Furthermore, the inclusion of antioxidant-rich herbs such as oregano, basil, and rosemary supports fat metabolism and reduces the inflammatory processes commonly associated with obesity and metabolic syndrome.

The MD's focus on vegetables, particularly dark leafy greens such as spinach and kale, is another important factor for weight control [48]. These vegetables are rich in fiber, which regulates digestion, promotes satiety, and prevents overeating. Similarly, legumes such as lentils and chickpeas provide protein and fiber, making them a valuable food group for weight management [49]. Furthermore, mindful eating, a central practice in Mediterranean cultures, contributes to obesity prevention by promoting slower eating and better recognition of hunger cues. By fostering social meal-sharing practices, Mediterranean cultures encourage healthier eating habits and more appropriate portion sizes, which can reduce the risk of overeating and obesity. Even though the present study indicates possible effects of the ML on obesity prevention, there are several limitations to this review. Many of the studies included are observational in nature, which makes it difficult to establish causal relationships between adherence to the MD and obesity prevention outcomes. Additionally, the variability in study populations, dietary assessment methods, and environmental contexts complicates the generalization of the findings. The diversity of populations included in these studies, especially when comparing Mediterranean and non-Mediterranean groups, introduces variability that may influence the interpretation of results [50].

Another significant limitation is the limited number of randomized controlled trials (RCTs) assessing long-term outcomes of the ML, particularly in non-Mediterranean populations [51]. RCTs are critical in establishing causality, and the lack of such studies limits our understanding of the long-term effectiveness of the MD for obesity prevention and weight management. The application of the ML outside of its native region presents several challenges. These include the availability of specific Mediterranean foods, cultural

differences in eating habits, and economic factors that may influence adherence to the MD [52].

While the ML has demonstrated its most significant effects within the Mediterranean region, many of its core practices—such as the consumption of fresh fruits and vegetables, encouraging physical activity, and reducing food waste—can be successfully adapted to other regions. For instance, although some Mediterranean foods may be less accessible outside the region, locally available seasonal produce can often fulfill similar nutritional needs [53]. Moreover, the practice of mindful eating and social meal-sharing, which are intrinsic to Mediterranean cultures, can be universally applied, potentially fostering healthier eating habits worldwide. While the ML may require some modifications to accommodate different cultural and geographical contexts, the underlying health benefits remain relevant and adaptable to various populations.

5. Conclusions

The ML offers a holistic and evidence-based approach to the prevention and management of obesity. It is not merely a dietary pattern but an integrated way of living that includes a rich variety of protective habits. The combined implementation of a nutrient-dense and anti-inflammatory diet, regular physical activity, restorative sleep, and strong social connections contributes significantly to the regulation of body weight, improvement of metabolic markers, and overall well-being [54].

The MD, characterized by high consumption of fruits, vegetables, legumes, whole grains, nuts, and olive oil, along with a moderate intake of fish, dairy, and red wine, has demonstrated consistent benefits in promoting satiety, reducing systemic inflammation, and supporting metabolic flexibility. The inclusion of healthy fats, such as monounsaturated fatty acids from extra-virgin olive oil, contributes to the modulation of appetite-related hormones such as leptin and ghrelin, while the high fiber content enhances gut microbiota diversity and glucose homeostasis [55].

Moreover, lifestyle components such as frequent physical activity, often integrated into daily life through walking, gardening, or manual labor, may contribute to increased energy expenditure and improved insulin sensitivity [56]. Adequate and consistent sleep patterns support hormonal balance, particularly in cortisol and melatonin rhythms, further influencing appetite regulation and fat storage. In parallel, strong social engagement, a core element of the Mediterranean way of life, is associated with lower stress levels, healthier eating behaviors, and reduced risk of emotional eating.

Although the ML is widely associated with favorable health outcomes, including the prevention and reduction of obesity, it is important to recognize that individual responses to dietary and lifestyle interventions may vary considerably. Genetic predispositions, gut microbiota composition, socioeconomic status, and psychological factors all play a role in how effectively a person can adopt and benefit from these habits [8]. Therefore, personalized nutrition and lifestyle strategies, tailored to an individual's biological, environmental, and psychosocial profile, could further enhance the effectiveness of obesity prevention efforts. Future research should focus on identifying the specific genetic markers, behavioral traits, and environmental conditions that influence adherence to the ML, as well as the metabolic outcomes it produces. Integrating omics technologies and behavioral science may pave the way for more targeted and impactful interventions that build upon the traditional foundations of the ML.

Supplementary Materials: The following supporting information can be downloaded at: https://www.mdpi.com/article/10.3390/obesities5020043/s1, Table S1: Summary of key studies on ML and obesity prevention.

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