ISSN: 2146 - 8370

PROGRESS IN ORTHOPEDIC SCIENCE, 2024
VOL 10, NO. 4, PAGE 1 – 4
DOI: doi.org/10.47363/POS/2024(10)180

RESEARCH ARTICLE

Open Access

The Potential Impact of Obesity Prevention and Management on Quality of Life, Metabolic Health and Healthy Ageing

Onur Oral[1]*, Pramila Thapa[2], Pinar Tatlibal[3], Mumtaz Enser[4] and Evangelia Stavropoulou[5]

[1]Ege University, Faculty of Sports Sciences, Izmir, Turkey

[2]Life Skill Education Institutes/Yeti Health Science Academy, Katmandu, Nepal

[3]Dokuz Eylul University, Faculty of Necat Hepkon Sport Sciences, Izmir, Turkey

[4]Dokuz Eylul University, Institute of Social Sciences, Department of Philosophy, Izmir, Turkey

[5]Master of Research in Information and Communication, University of Lorraine, France

ABSTRACT

Background: The aim of this review article is to elucidate the complex interrelationship between obesity management, metabolic health and overall quality of life, as evidenced by a substantial body of research on healthy living in recent years.

Materials and Methods: A comprehensive search of the literature was conducted using various databases and a range of keywords, including "obesity management", "metabolic health", "quality of life", "physical activity", and "obesity complications". The review encompassed randomized controlled trials, cohort studies and systematic reviews, thereby ensuring a comprehensive and diverse range of evidence. The inclusion criteria for this review were established to filter studies that assessed the relationship between obesity, metabolic health and quality of life. The review included randomized controlled trials, cohort studies and systematic reviews, thereby ensuring a comprehensive and diverse range of evidence. A total of 25 studies were selected for inclusion in this review, with a focus on the relationship between obesity management, metabolic health, and quality of life. In order to ensure the quality and relevance of the selected studies, the search was limited to peer-reviewed articles published in English between 1981 and 2024, and studies using animal models were excluded.

Results: The management of obesity, the enhancement of quality of life, and the improvement of metabolic health are inextricably linked. The development of metabolic disorders can be attributed to obesity, while poor metabolic health can contribute to weight gain. The influence of lifestyle factors, including diet and physical activity, on this relationship is of paramount importance. Diets that are high in processed foods and sedentary lifestyles are associated with an increased risk of obesity and metabolic dysfunction.

Conclusion: The interplay between obesity, metabolic health, and quality of life is complex and multifaceted. This review underscores the necessity for integrated approaches that consider genetic, environmental, and psychosocial factors in developing effective interventions. By addressing these interconnected dimensions, we can enhance our understanding of obesity and improve health outcomes for individuals affected by this pervasive condition.

ARTICLE HISTORY

Received October 05, 2024
Accepted October 14, 2024
Published October 30, 2024

ARTICLE HISTORY

Obesity Management, Metabolic Health, Quality of Life, Physical Activity, d Obesity Complications

Introduction

It is important to emphasize that obesity has emerged as a major public health problem on a global scale and affects various populations in various age groups. Since the increasing prevalence of obesity in recent years has unfortunately led to numerous health complications that have the potential to significantly impair the quality of life of individuals, the aim should be to evaluate the impact of obesity prevention and management strategies on quality of life, metabolic health, and healthy aging, especially concerning cardiovascular diseases (CVD). It is widely accepted that there is a clear relationship between obesity and cardiovascular health, and obesity is often defined as the primary risk factor for some cardiovascular disorders [1]. According to the World Health Organization, approximately 1.9 billion adults worldwide are classified as overweight, and more than 650 million are considered obese; this is a situation of great public health concern, which raises the need for a closer examination of effective interventions that can reduce the health risks associated

Contact Onur Oral, Associate Professor, Faculty of Sports Sciences, Department of Health Sciences and Sports, University of Ege, Izmir, Turkey.

with obesity [2].

The interplay between obesity, metabolic health, and quality of life is complex and multifaceted. Obesity is widely acknowledged as a primary risk factor for various cardiovascular conditions, including hypertension, dyslipidemia, and type 2 diabetes [3]. These conditions not only elevate the risk of morbidity and mortality but also diminish individuals' overall well-being. Furthermore, obesity is associated with a range of physical limitations, psychological challenges, and social stigmas that collectively impact an individual's quality of life [4, 5].

It is increasingly clear that obesity is associated with some physical, psychological, and social disorders that can have a significant impact on an individual's quality of life. From a physical perspective, it is not uncommon for people with obesity to experience difficulties in performing daily life tasks such as climbing stairs or walking for long periods, as obesity can lead to reduced mobility, increased fatigue, and joint pain. Furthermore, these physical limitations can potentially contribute to social isolation and reduced participation in recreational activities, which can ultimately affect mental well-being [6].

It should also be noted that there may be a link between obesity and psychological problems such as depression, anxiety, and low self-esteem. Individuals with obesity may be at risk of experiencing body dissatisfaction, discrimination, and stigmatization, which can potentially have long-term consequences on mental health. Research indicated that individuals with obesity frequently experience higher levels of depression and anxiety compared to their non-obese counterparts [7, 8].

Socially, since obesity can lead to significant social handicaps, this social position can also potentially lead to social exclusion and hinder interpersonal relationships, and all these negative effects can, unfortunately, lead to a decrease in the quality of life. The stigma associated with obesity often leads to social isolation, exacerbating mental health issues and further diminishing quality of life [9-11].

Lifestyle changes, especially regular physical activity and a balanced diet have the potential to produce auspicious results in preventing and managing obesity. It seems that there is growing evidence that adopting a more active lifestyle and incorporating regular exercise into our routines can help to improve insulin sensitivity, support weight loss, and reduce the risk of developing metabolic disorders [12, 13].

Furthermore, it is worth noting that a diet rich in fruits, vegetables, and whole grains is beneficial in terms of improving blood sugar regulation, lowering blood pressure, and balancing lipid profiles. Therefore, it is also important to reflect this dietary habit in one's lifestyle to contribute to healthy cardiovascular health [14].

It is imperative to consider the well-established metabolic relationships between obesity and a multitude of metabolic disorders and to view obesity as a significant public health concern. To enhance general well-being and quality of life, particularly among the elderly, it would be beneficial to implement efficacious strategies to prevent and manage this issue [15].

From this perspective, it might be helpful to consider the potential benefits of developing regular physical activity habits, particularly in preventing and managing obesity, which is becoming increasingly prevalent across all age groups. It might also be helpful to consider that physical activity habits can play a significant role in the effectiveness of obesity treatment [16].

Materials and Methods

A comprehensive search of the literature was undertaken using a range of databases, including the US National Library of Medicine (PubMed), Scopus, EBSCO, MEDLINE, DRJI (Directory of Research Journal Indexing), Embase, Web of Science, Google Scholar, and SportDiscus. In order to gain a comprehensive understanding of the subject matter, a number of keywords were selected, including key search terms such as "obesity management", "metabolic health", "quality of life", "physical activity", and " obesity complications". In addition, relevant literature was also sourced from searching for articles in reference lists derived from the data searches. In order to focus the results, the search was limited to peer-reviewed articles published in English between 1981 and 2024. In order to gain a comprehensive understanding of the relationship between metabolic health, obesity, longevity, and various systemic diseases, studies using animal models were excluded. In order to be included in this review, studies had to meet a number of criteria. First, they had to examine the relationship between obesity, metabolic health, and quality of life. Second, they had to be published in a peer-reviewed journal. Thirdly, they had to be in English. After a careful selection process, 25 studies were chosen to be included in this review.

Results and Discussion

In recent years, research studies have emphasized the deleterious effects of obesity on metabolic health and quality of life, and a substantial body of evidence has been uncovered in this regard. It is evident from the literature that individuals with obesity are at an elevated risk of developing metabolic disorders, including type 2 diabetes and hypertension [17]. For example, a longitudinal study by Phillips et al. demonstrated that even modest weight loss can significantly improve glycemic control and reduce hypertension in obese individuals [18].

It would be beneficial to consider implementing effective obesity prevention and management strategies with the aim of reducing the incidence of metabolic disorders. There seems to be a growing consensus that lifestyle changes, such as regular physical activity and a balanced diet, may play an important role in preventing and managing obesity. It would be remiss of us not to mention the benefits of regular exercise in improving insulin sensitivity, supporting weight loss and reducing the risk of developing metabolic disorders [19, 20]. It is also worth noting that maintaining a healthy diet rich in fruits, vegetables and whole grains can help to regulate blood sugar levels, lower blood pressure and improve lipid profiles. It would be beneficial to consider effective obesity prevention and management strategies as a way of reducing the incidence of these metabolic disorders [21].

Lifestyle interventions are emerging as a promising approach to addressing these challenges. The evidence that regular physical

activity increases insulin sensitivity and effectively supports weight loss is a significant finding in this regard [12].

Furthermore, the evidence that a diet comprising nutritious foods, including fruits, vegetables, and whole grains, is associated with enhanced metabolic outcomes and cardiovascular health underscores the significance of a natural and balanced diet in the management of obesity [22-25]. In light of these findings, it is imperative to emphasize the pivotal role of lifestyle modifications in the treatment of obesity and associated comorbidities, as well as the effective impact of physical activity and nutrition on weight management.

Conclusion

It would be beneficial to consider a multifaceted approach to address this growing public health concern caused by obesity. In order to gain a deeper understanding of this complex global health problem, it might be helpful to conduct a detailed analysis of the interactions between obesity, metabolic health, and quality of life. Such an approach could potentially be beneficial for public health. It may be of interest to note that the findings suggest that obesity may be a significant risk factor for various metabolic disorders and may also have an impact on individuals' psychological well-being and social interactions.

It seems clear from the scientific studies that there is a significant interaction between obesity, metabolic health, and quality of life. Recent studies suggest that there is an urgent need for comprehensive public health strategies to prevent and manage obesity. Furthermore, it may be beneficial to consider ways to address the physical, psychological, and social dimensions of obesity, with the aim of potentially improving the quality of life of affected individuals and reducing the burden of complications resulting from obesity.

In light of the global prevalence of obesity, there is a growing consensus that promoting a culture that encourages healthy eating and active lifestyles may be beneficial for the prevention and treatment of obesity. It may be beneficial for future interdisciplinary scientific approaches to obesity prevention and treatment to consider exploring innovative intervention strategies that address the multifaceted nature of obesity by taking into account the diverse experiences of individuals across different populations.

In light of the findings presented, it seems that the relationships between obesity, metabolic health, and quality of life are intricate and multifaceted. This review, which aims to synthesize existing research, highlights the large body of evidence supporting the importance of healthy nutrition and specific lifestyle changes, such as physical activity habits, in the prevention and treatment of obesity-related diseases, especially cardiovascular diseases. It suggests that integrated approaches that take into account genetic, environmental and psychosocial factors may be useful in developing effective interventions. It may be beneficial to consider all of these interconnected dimensions together, as a more comprehensive framework for understanding obesity could potentially lead to improved health outcomes for individuals affected by this common condition.

Acknowledgment

We would like to express our special thanks to Dr. George N. NOMIKOS for his very successful contribution to the literature research process and unique academic support in the publication during the process of this review article.

Conflict of interest

The author certifies that there is no conflict of interest with any financial organization regarding the material discussed in the manuscript.

Funding

The author certifies that there is no funding from any financial organization regarding the material discussed in the manuscript or contributions

Author contributions

All the authors read and approved the final version of the manuscript.

References

[1] Bhupathiraju SN & Hu FB. Epidemiology of obesity and diabetes and their cardiovascular complications. Circulation research 2016; 118: 1723-1735.

[2] World Health Organization. Obesity and overweight 2021: https://www.who.int/news-room/fact-sheets/detail/obesity-and-overweight.

[3] Grundy SM. Obesity, metabolic syndrome, and cardiovascular disease. The Journal of Clinical Endocrinology & Metabolism 2004; 89: 2595-2600.

[4] Kearns J, McHugh P & Kearns P. The impact of weight stigma on mental health: A systematic review. Obesity Reviews 2014; 15: 572-586.

[5] Puhl RM & Heuer CA. The stigma of obesity: A review and update. Obesity 2010; 18: 1725-1734.

[6] Hill A, Williams G & Fruhbeck G. Social and psychological factors in obesity. Obesity: Science to practice 2009; 347-366.

[7] Bluher M & Schwarz P. Metabolically healthy obesity: Are metabolically healthy obese individuals really healthy? European Journal of Endocrinology 2014; 171: R209-R219.

[8] Sarigiani PA, Olsavsky AL, Camarena PM & Sullivan SM. Obesity and depressive symptoms in college women: analysis of body image experiences and comparison to non-obese women. International Journal of Adolescence and Youth 2020; 25: 765-779.

[9] Fontaine KR & Barofsky I. Obesity and health-related quality of life. Obesity reviews 2001; 2: 173-182.

[10] Payne ME, Starr KP, Orenduff M, Mulder HS, McDonald SR, et al. Quality of life and mental health in older adults with obesity and frailty: associations with a weight loss intervention. The Journal of nutrition, health and aging 2018; 22: 1259-1265.

[11] Ruderman NB, Schneider SH & Berchtold P. The "metabolically-

obese," normal-weight individual. The American Journal of Clinical Nutrition 1981; 34: 1617-1621.

[12] Donnelly JE, Blair SN, Jakicic JM & Manore MM. Appropriate physical activity intervention strategies for weight loss and prevention of weight regain for adults. Medicine & Science in Sports & Exercise 2009; 41: 459-471.

[13] Oral O, Rezaee Z, Pramila Thapa P, Stavropoulou E and Enser M. A Narrative Review of the Importance of Weight Management in Children and Adolescents. Ortho Res Online J 2024; 11: 000751.

[14] Mozaffarian D. Changes in diet and lifestyle and long-term weight gain in women and men. New England Journal of Medicine 2011; 364: 2392-2404.

[15] McNaughton SA, Crawford D, Ball K & Salmon J. Understanding determinants of nutrition, physical activity and quality of life among older adults: the Wellbeing, Eating and Exercise for a Long Life (WELL) study. Health and quality of life outcomes 2012; 10: 1-7.

[16] Oral O, Rezaee Z & Iyanuloluwa O. Obesity and Its Related Problems in the Elderly and the Therapeutic Effects of Physical Activity. In A. Alharthi (Ed.), Difficulties and Challenges in Geriatric Health Management 2024: 217-235.

[17] Halpern A, Mancini MC, Magalhães MEC, Fisberg M, Radominski R, et al. Metabolic syndrome, dyslipidemia, hypertension and type 2 diabetes in youth: from diagnosis to treatment. Diabetology & metabolic syndrome 2010; 2: 1-20.

[18] Phillips CM, Dillon C, Harrington JM & McCarthy VJ. Defining metabolically healthy obesity: Role of dietary and lifestyle factors. PLoS One 2013; 8: e76188.

[19] Clamp LD, Hume DJ, Lambert EV & Kroff J. Enhanced insulin sensitivity in successful, long-term weight loss maintainers compared with matched controls with no weight loss history. Nutrition & diabetes 2017; 7: e282-e282.

[20] Wing RR, Lang W, Wadden TA, Safford M, Knowler WC, et al. Benefits of modest weight loss in improving cardiovascular risk factors in overweight and obese individuals with type 2 diabetes. Diabetes care 2011; 34: 1481-1486.

[21] Fatahi S, Daneshzad E, Kord-Varkaneh H, Bellissimo N, Brett NR, et al. Impact of diets rich in whole grains and fruits and vegetables on cardiovascular risk factors in overweight and obese women: a randomized clinical feeding trial. Journal of the American College of Nutrition 2018; 37: 568-577.

[22] Bertoia ML, Mukamal KJ, Cahill LE, Hou T, Ludwig DS, et al. Changes in intake of fruits and vegetables and weight change in United States men and women followed for up to 24 years: analysis from three prospective cohort studies. PLoS medicine 2005; 12: e1001878.

[23] Cornier MA, Marshall JA, Hill JO, Maahs DM & Eckel RH. Prevention of overweight/obesity as a strategy to optimize cardiovascular health. Circulation 2011; 124: 840-850.

[24] uatromoni PA, Copenhafer DL, D'Agostino RB & Millen BE. Dietary patterns predict the development of overweight in women: The Framingham Nutrition Studies. Journal of the American Dietetic Association 2002; 102: 1239-1246.

[25] Fatahi S, Daneshzad E, Kord-Varkaneh H, Bellissimo N, Brett NR, et al. Impact of diets rich in whole grains and fruits and vegetables on cardiovascular risk factors in overweight and obese women: a randomized clinical feeding trial. Journal of the American College of Nutrition 2018; 37: 568-577.