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RESEARCH ARTICLE

Redefining Health through Multidisciplinary Obesity Prevention and Treatment in the United Arab Emirates

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ABSTRACT

Obesity poses a multifaceted challenge in the United Arab Emirates (UAE), demanding a comprehensive review of its epidemiology, causes, prevention strategies, and challenges. This article explores the intricate web of factors contributing to obesity, emphasizing a multidisciplinary approach that engages nutritionists, exercise physiologists, behavioral therapists, and surgeons. The epidemiology reveals a concerning rise in obesity rates, necessitating targeted interventions. Demographic influences, cultural dynamics, dietary patterns, sedentary lifestyles, and genetic factors are dissected to provide a nuanced understanding. Health implications extend beyond body weight, impacting public health systems and imposing an economic burden.

Prevention strategies encompass childhood obesity initiatives, community-based interventions, workplace wellness programs, and government policies. Challenges in implementing these strategies include cultural perceptions of body image, access to healthcare services, socioeconomic disparities, and resistance to change. Cultural sensitivity emerges as a key theme, guiding interventions tailored to align with diverse cultural norms. Multidisciplinary care, leveraging technology, community engagement, and educational programs are explored as integral components of a holistic approach.

This review emphasizes the need for societal commitment, empowering communities and individuals, policy advocacy, and the pivotal role of healthcare professionals in the fight against obesity. Future perspectives call for sustained commitment, research investment, and the integration of technology to pave the way for a healthier UAE. This review also provides a roadmap for forging a healthier future, acknowledging the complexity of obesity, and offering insights into tailored, culturally sensitive interventions.

Keywords: Obesity, UAE, Multidisciplinary, Prevention, Culture, Healthcare, Epidemiology, Society

1. Introduction

Obesity, characterized by an excessive accumulation of body fat, represents a global health challenge of unprecedented proportions. The World Health Organization (WHO) estimates that over 1.9 billion adults worldwide are overweight, with more than 650 million classified as obese. Overweight and obesity are associated with more deaths globally than underweight. In 2020, there were 39 million overweight or obese children under the age of five. In 2016, more than 340 million kids and teenagers between the ages of 5 and 19 were overweight or obese.¹

In the United Arab Emirates (UAE), a nation traditionally celebrated for its active lifestyle and lean population, there has been a notable and concerning rise in obesity rates.² This shift is emblematic of broader societal changes accompanying rapid urbanization and lifestyle transformations. As the UAE grapples with the impact of these shifts, understanding the global prevalence of obesity is crucial for contextualizing and addressing the specific challenges faced within the region.³

While the UAE's obesity rates have been on the rise, it's essential to recognize the complexity of this health concern. The conventional definition of obesity through Body Mass Index (BMI) thresholds provides a numerical measure but fails to encapsulate the intricacies of this multifaceted condition. In addition to BMI, factors such as fat distribution, metabolic health, and associated comorbidities contribute to a comprehensive understanding of obesity.^{4,5}

A pivotal facet of this review centers on the significance of adopting a multidisciplinary approach to combat obesity effectively.

Acknowledging the interplay of genetic, environmental, obesity phenotype and lifestyle factors, a collaborative effort among healthcare professionals becomes imperative. Nutritionists, exercise physiologists, behavioral therapists, and surgeons must work in concert to address the various dimensions of obesity, emphasizing personalized and culturally sensitive interventions.^{6,7}

In the UAE, where cultural norms, dietary preferences, and societal expectations intersect with health behaviors, the challenge of combating obesity takes on a unique complexion. Cultural perceptions of body image, long-standing traditions, and the impact of a rapidly modernizing society contribute to the intricate tapestry that shapes health-related choices.^{8,9}

This review article serves as a comprehensive exploration of obesity prevention and treatment in the UAE. Moving beyond a mere enumeration of statistics, it delves into the intricacies of the rising trend of obesity in the UAE, emphasizing the importance of a nuanced and culturally sensitive approach. From examining the health implications of obesity to navigating the challenges specific to the region, each subsequent section contributes to a holistic understanding. As the article unfolds, it will delineate the multidisciplinary strategies, prevention efforts, and future perspectives that collectively aim to inform and guide interventions and policies in addressing obesity in the UAE.

2. Epidemiology, Causes and Implications of Obesity

Obesity, a global health concern, has permeated the United Arab Emirates, manifesting as a

multifaceted challenge with intricate epidemiological and causative dimensions. To address this pervasive issue effectively, it is imperative to dissect the epidemiological landscape and delineate the intricate web of factors contributing to the rise of obesity in the UAE.

2.1 Current Statistics and Prevalence Rates

Recent epidemiological assessments underscore a disconcerting surge in obesity rates across the UAE. Data derived from the UAE National Health Survey reveals a steady and substantial increase in both adult and childhood obesity over the past decade. Presently, adult obesity rates stand at more than 39%, reflecting a notable departure from historical norms. Obesity increased with age, peaking in the 50–59 years age group. Females had a higher risk of obesity than males. UAE nationals, other Arabs, and Asians were more likely to be obese compared to the reference group (Western and others). Certain occupation categories, such as clerical and service workers and elementary and unskilled occupations, exhibited higher risks of obesity than the reference group (professionals). Hypertensive individuals had a significantly higher risk of obesity compared to normotensive individuals. This statistical revelation signals the urgency for focused intervention strategies tailored to the unique challenges faced within the UAE.^{2,10}

Urbanization, often synonymous with progress, has introduced a host of lifestyle changes that have significantly contributed to the obesity epidemic. The influx of expatriates, the evolution of job structures toward sedentary roles, and alterations in traditional dietary patterns collectively contribute to the shift observed in obesity prevalence.^{11,12}

2.2 Demographic Factors Influencing Obesity

Demographics play a pivotal role in shaping the contours of the obesity landscape within the UAE. A nuanced examination reveals gender disparities, with a higher prevalence of obesity among women compared to men. Cultural norms and societal expectations contribute to these gender-related variations. Additionally, age-related trends highlight the need for early interventions, recognizing childhood obesity as a precursor to adult obesity and associated health complexities.^{13–15}

The intersection of demographics with societal dynamics forms a complex tapestry, necessitating targeted approaches to address obesity at various life stages. Understanding the demographic nuances provides a foundation for crafting interventions that resonate with the diverse population segments within the UAE.^{16,17}

2.3 Cultural and Lifestyle Factors

Cultural influences intricately interweave with lifestyle choices, shaping dietary habits and physical activity patterns. The traditional Emirati diet, characterized by flavorful but calorically dense foods, now contends with the accessibility and popularity of fast food and Westernized dietary practices. Cultural celebrations, marked by elaborate feasts, contribute to the evolving dietary landscape. The dynamic interplay between cultural practices and modern living encapsulates the unique challenge of obesity in the UAE.^{18–20}

Recognizing the influence of culture on lifestyle choices is pivotal for tailoring interventions that respect and integrate cultural preferences. Culturally sensitive strategies hold the key to fostering sustainable behavioral changes.

2.4 Dietary Factors

Delving into the dietary factors contributing to obesity unveils critical insights. The UAE experiences a high consumption of energy-dense foods, sugary beverages, and a relative deficiency of fruits and vegetables in the diet. The modernization of food systems has introduced processed and convenience foods, altering traditional dietary practices. Unraveling the intricate patterns of dietary choices is essential for formulating interventions that address specific nutritional challenges.²¹⁻²⁴

Effective nutrition interventions should encompass a blend of public health awareness campaigns, policy initiatives, and community-based programs. Fostering a shift towards healthier dietary patterns requires a comprehensive understanding of the prevailing dietary landscape.^{25,26}

2.5 Sedentary Lifestyle

The transition from an active lifestyle to a more sedentary one is a hallmark of modernization in the UAE. The prevalence of desk-bound jobs, reliance on motorized transportation, and the pervasive influence of screen-based entertainment contribute to reduced physical activity levels. Encouraging physical activity and incorporating it into daily routines are integral components of any comprehensive obesity prevention strategy.²⁷

2.6 Genetic and Metabolic Factors

While environmental factors play a prominent role in obesity, the interaction with genetic and metabolic factors adds layers of complexity. Genetic predispositions to obesity can intersect with environmental triggers, influencing an individual's susceptibility to weight gain. A

nuanced exploration of these genetic and metabolic underpinnings is imperative for tailoring interventions that acknowledge and accommodate the unique characteristics of each individual.^{28,29}

Understanding the genetic determinants of obesity not only facilitates personalized treatment plans but also contributes to the broader landscape of obesity research. Genetic insights can inform the development of targeted pharmaceutical interventions and precision medicine approaches.^{30,31}

2.7 Socioeconomic Influences

Socioeconomic factors cast a long shadow on the obesity landscape, reflecting disparities in access to resources and healthcare. Individuals with lower socioeconomic status often face challenges in accessing nutritious foods, engaging in physical activities, and seeking healthcare services. The social determinants of health intersect with obesity, shaping its prevalence and impact across different strata of society.³²⁻³⁴

Addressing socioeconomic influences requires a holistic approach that extends beyond the realms of healthcare. Social policies, economic initiatives, and community empowerment programs play integral roles in mitigating the impact of socioeconomic factors on obesity.

2.8 Health Implications of Obesity

The surge in obesity rates within the United Arab Emirates brings forth a cascade of health implications that extend far beyond mere body weight. This section delves into the multifaceted health risks and comorbidities associated with obesity, emphasizing the profound impact on public health systems and the economic burden it imposes.

2.8.1 Associated Health Risks and Comorbidities

Obesity is not solely a matter of aesthetics; it is a significant risk factor for a spectrum of health conditions. Individuals with obesity are at an elevated risk of developing chronic diseases, including type 2 diabetes, cardiovascular diseases, hypertension, and certain types of cancers. Moreover, obesity is intricately linked to respiratory issues, sleep apnea, and musculoskeletal disorders. Understanding these associated health risks is crucial for public health initiatives and clinical interventions tailored to the unique healthcare landscape of the UAE.³⁵⁻³⁷

2.8.2 Impact on Public Health Systems

The burgeoning prevalence of obesity places an unprecedented strain on public health systems within the UAE. The increased incidence of obesity-related conditions necessitates enhanced healthcare infrastructure, specialized medical services, and a reevaluation of preventive measures. From diabetes management to cardiovascular care, the surge in obesity-related cases demands a proactive and strategic approach to healthcare delivery.^{35,38,39}

Addressing obesity's impact on public health involves not only treatment protocols but also preventive strategies. Public health campaigns, community engagement initiatives, and early intervention programs are essential components of a comprehensive strategy to alleviate the burden on healthcare systems.⁴⁰

2.8.3 Economic Burden of Obesity-related Healthcare

The economic ramifications of obesity extend beyond the confines of healthcare facilities.

The direct and indirect costs associated with obesity-related healthcare are substantial. Direct costs include medical expenses related to the treatment of obesity and its associated comorbidities. Indirect costs encompass loss of productivity due to absenteeism and reduced work efficiency, as well as the economic burden placed on caregivers.^{11,41,42}

Quantifying the economic impact of obesity underscores the urgency of preventive measures and intervention strategies. Policymakers, healthcare professionals, and economists must collaborate to develop cost-effective solutions that prioritize both public health and economic stability.

3. Multidisciplinary Approach to Obesity: Addressing the Complex Web of Factors

Obesity in the United Arab Emirates demands a nuanced and comprehensive approach that recognizes the intricate web of factors contributing to its rise. A multidisciplinary strategy, encompassing the expertise of nutritionists, exercise physiologists, behavioral therapists, endocrinologists, endoscopists and surgeons, is imperative for effective prevention and treatment.⁴³ This section delves into the multifaceted dimensions of each discipline, offering a detailed exploration of the roles and interventions that collectively form a robust framework to combat obesity.

3.1 Role of Nutritionists and Dietitians

Nutritionists and dietitians play a pivotal role in the prevention and treatment of obesity. Their expertise extends beyond calorie counting, delving into the cultural and individual nuances of dietary habits. Nutrition interventions need

to be tailored to the diverse dietary landscape of the UAE, respecting cultural preferences and addressing challenges specific to the region. Collaborative efforts with local communities and educational programs can enhance nutritional literacy, empowering individuals to make informed dietary choices. Additionally, public health campaigns can promote healthy eating habits, emphasizing the consumption of traditional and locally sourced foods that align with nutritional guidelines.⁴⁴⁻⁴⁷

3.2 Exercise Physiologists and Physical Therapists

Promoting physical activity is integral to any obesity intervention, and exercise physiologists and physical therapists play a central role in crafting tailored exercise programs. In the UAE, where sedentary lifestyles are on the rise, designing interventions that transcend cultural barriers to physical activity is paramount. Exercise programs should be culturally sensitive, incorporating activities that resonate with the local population. Community-based initiatives, such as group exercise classes and awareness campaigns, can foster a culture of physical activity. Furthermore, integrating physical activity into the daily routines of individuals, workplaces, and schools is essential for sustaining long-term behavior change.⁴⁸⁻⁵¹

3.3 Behavioral Therapists

Cognitive-behavioral interventions are essential for reshaping thought patterns related to food, exercise, and body image. In the UAE, where cultural perceptions of body image may influence behavior, behavioral therapists can implement interventions that promote a positive self-image and foster a healthy

relationship with food and exercise. Culturally adapted cognitive-behavioral strategies, group therapy sessions, and digital mental health platforms can provide accessible and effective support.^{52,53}

3.4 Endocrinologist

Endocrinologists in the UAE play a pivotal role in the medical management of obesity, employing a nuanced approach that incorporates medications such as liraglutide, semaglutide, and tirzepatide. Leveraging their specialized knowledge of hormonal regulation, these healthcare professionals tailor interventions to address specific metabolic challenges contributing to obesity. Liraglutide, a GLP-1 receptor agonist, enhances insulin secretion and promotes satiety. Semaglutide, with its once-weekly dosing, offers a convenient and effective option. Tirzepatide, a dual GLP-1 and GIP receptor agonist, represents a novel approach to tackling both obesity and comorbidities like type 2 diabetes. The individualized selection of these medications reflects a commitment to optimizing health outcomes in the diverse landscape of obesity management.^{54,55}

3.5 Bariatric endoscopists

Bariatric endoscopists play a pivotal role in the evolving landscape of obesity management. In recent years, endoscopic procedures have emerged as a promising alternative to traditional surgical interventions for weight loss, offering a less invasive option. Advanced endoscopic tools are used for treating obesity without major surgery after originally being designed for diagnostic purposes. Endoscopic Sleeve Gastroplasty (ESG) is a minimally invasive, non-surgical procedure that helps to

reduce stomach capacity and facilitate weight loss. During the procedure, a flexible tube equipped with a camera (endoscope) is inserted through the mouth and into the stomach. This enables the surgeon to reshape the stomach by suturing it into a sleeve-like structure, which restricts the amount of food it can hold. ESG has gained popularity as a safe and effective alternative to traditional weight loss surgeries.⁵⁶

Intragastric balloons are medical devices that are inserted through an endoscope into the stomach in a deflated state. The balloon is then inflated to reduce the stomach's capacity. This reduction in capacity induces a feeling of fullness, which helps patients consume smaller portions of food and make healthier food choices.⁵⁷ Endoscopic procedures are considered less invasive, which helps to reduce the risks that are typically associated with major surgical interventions. However, the effectiveness of endoscopic procedures for long-term weight loss is still being researched, and the careful selection of suitable candidates is crucial to the success of these interventions.^{58,59}

A recent Meta-analysis findings highlight the comparable efficacy and safety of full-thickness Endoscopic transoral outlet reduction (ft-TORe) and argon plasma mucosal coagulation alone (APMC-TORe), emphasizing the need for individualized treatment targets. Revisional endoscopic sleeve gastropasty (R-ESG) emerges as a non-invasive solution for weight recidivism post-laparoscopic sleeve gastrectomy, providing sustained results at 1 year. Bariatric endoscopists are crucial in offering these interventions, balancing effectiveness with minimally invasive approaches. These insights underscore a patient-centered paradigm,

showcasing the dynamic integration of endoscopic options into bariatric practice for optimized obesity treatments.^{60,61}

3.6 Bariatric Surgeons

For individuals with severe obesity or obesity-related health complications, bariatric surgery becomes a viable option. Bariatric surgeons play a crucial role in surgical interventions and post-surgery multidisciplinary care. Surgical options, such as gastric bypass and sleeve gastrectomy, require careful consideration and personalized approaches. Post-surgery, ongoing support from nutritionists, psychologists, and physical therapists is essential for ensuring the success of the procedure and promoting long-term weight maintenance. Bariatric surgery, while not a standalone solution, can be a transformative component of a comprehensive obesity management plan.⁶²⁻⁶⁴

3.7 Interdisciplinary Collaboration

The effectiveness of a multidisciplinary approach lies in the synergy between different healthcare professionals. Interdisciplinary collaboration ensures that interventions are holistic, addressing the diverse needs of individuals. Regular case conferences, collaborative care plans, and shared decision-making processes strengthen the continuum of care. In the UAE, fostering a collaborative environment is crucial for overcoming cultural barriers, promoting cultural competence among healthcare professionals, and tailoring interventions that resonate with the diverse population.⁶⁵⁻⁶⁸

3.8 Cultural Considerations in Multidisciplinary Care

Cultural sensitivity is paramount in the delivery of healthcare services, especially in a

diverse and culturally rich nation like the UAE. Healthcare professionals need to be attuned to cultural norms, preferences, and traditions that may influence health behaviors. Tailoring interventions that respect cultural nuances, incorporating traditional dietary practices, and recognizing the impact of cultural perceptions on body image contribute to the success of obesity prevention and treatment efforts.^{69,70}

3.9 Leveraging Technology for Multidisciplinary Care

In the digital age, technology serves as a powerful tool to enhance multidisciplinary care. Telehealth platforms, mobile applications, and wearable devices can facilitate remote monitoring, provide real-time feedback, and support ongoing engagement with healthcare professionals. These technologies can bridge gaps in access to care, especially if there are remote or underserved.

4. Prevention Strategies and Challenges in Obesity Prevention and Treatment

The battle against obesity in the United Arab Emirates necessitates a multifaceted approach that not only addresses the root causes but also focuses on preventive strategies and acknowledges the unique challenges faced within the region. In this part we aim to create a comprehensive exploration of preventive measures and the intricate hurdles in implementing effective obesity prevention and treatment programs.

4.1 Childhood Obesity Prevention

Initiating obesity prevention efforts in childhood is a strategic imperative. Childhood habits often shape long-term health outcomes, making it

crucial to instill healthy behaviors early. School-based programs that promote physical activity, nutrition education, and healthy eating habits can be instrumental. Collaborations between schools, parents, and healthcare professionals can create a holistic approach that extends beyond the classroom. Additionally, engaging children in enjoyable and culturally relevant physical activities can foster a positive attitude toward exercise.⁷⁴⁻⁷⁶

4.2 Community-based Initiatives

Community-based initiatives serve as vital touchpoints for obesity prevention. Localized programs that leverage community resources, such as parks and recreational spaces, encourage physical activity. Farmers' markets and community gardens can enhance access to fresh and locally sourced produce, promoting healthier dietary choices. Moreover, fostering a sense of community engagement through social activities and support networks can create a conducive environment for sustained lifestyle changes.^{77,78}

4.3 Workplace Wellness Programs

Given the significant portion of time individuals spend at work, incorporating wellness programs into the workplace is strategic. Employers can implement initiatives that promote physical activity, provide healthy food options, and offer resources for stress management. Tailoring these programs to align with cultural norms and sensitivities is essential for their success. Workplace wellness initiatives not only benefit individual employees but also contribute to a healthier and more productive workforce.⁷⁹

4.4 Government Policies and Regulations

Governmental support is instrumental in shaping the obesity prevention landscape. Implementing policies that regulate food

advertising, mandate nutrition labeling, and incentivize healthy food options can influence consumer choices. Taxation on sugary beverages and unhealthy foods, as seen in some countries, can act as a deterrent while generating revenue for health initiatives. Moreover, creating urban environments that promote physical activity, such as walkable neighborhoods and accessible recreational spaces, is a policy-driven approach that fosters healthier living.⁸⁰⁻⁸²

4.5 Access to Healthcare Services

Access to healthcare services is a critical determinant in the success of obesity prevention and treatment. Disparities in healthcare access, influenced by socioeconomic factors, geographic location, and cultural considerations, can hinder individuals from seeking timely and effective care. Addressing these disparities requires a multifaceted approach, including improved healthcare infrastructure, community clinics, and initiatives that bridge gaps in access.^{83,84}

5. Conclusion

The battle against obesity in the United Arab Emirates is a multifaceted journey that demands concerted efforts, cultural sensitivity, and a holistic understanding of the complex factors contributing to its rise. As we reflect on the myriad aspects explored in this review, it is evident that addressing obesity extends beyond individual responsibility; it necessitates a societal commitment to fostering a healthier future.

In contemplating the preventive strategies and challenges outlined, it becomes apparent that a comprehensive, multidisciplinary approach

is the linchpin for success. The intricate interplay of cultural norms, lifestyle choices, and socioeconomic factors requires a tailored strategy that engages healthcare professionals, communities, policymakers, and individuals alike.

Future Perspectives: A Call to Action

As we conclude this exploration of obesity in the UAE, it is clear that the journey toward a healthier future is ongoing. Future perspectives hinge on sustained commitment, continuous research, and adaptive strategies that respond to the evolving health landscape. Investment in research to understand the unique genetic and environmental factors influencing obesity in the UAE is imperative. Moreover, the integration of emerging technologies and digital health solutions can enhance preventive measures and facilitate remote interventions.

In essence, the fight against obesity in the UAE is not just a health imperative; it is a societal commitment to well-being. Through collaborative efforts, cultural sensitivity, and a steadfast dedication to preventive strategies, the UAE can forge a path toward a healthier and more resilient nation. The journey begins now, with a collective resolve to overcome challenges, embrace diversity, and pave the way for a future where health is a shared value and obesity is a rarity.

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