

Adolescent Obesity-A Global Health Challenge and Call to Action

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Abstract

The escalating global prevalence of adolescent obesity presents a pressing public health concern with wide-ranging consequences. This narrative review seeks to offer readers a comprehensive examination of the current state of knowledge regarding interventions for adolescent obesity, emphasizing a theoretical and contextual viewpoint. Within this context, this article delves into the intricate dimensions of this issue and stresses the imperative of adolescent focused interventions. It highlights strategies specifically designed to address adolescent obesity, emphasizing the significance of early intervention strategies and the facilitating impact of public health campaigns; policy changes, such as those promoting healthier food environments; and comprehensive education programs. Addressing the challenges faced with implementation of such initiative, barriers and the scarcity of comprehensive data is also explored, alongside the promise of collaborative efforts and longitudinal research. By placing adolescents at the forefront and tailoring interventions to their distinct requirements, we can forge impactful approaches that empower healthier choices and counteract the challenge of obesity. Further research is needed to discern the most effective interventions, gauging their outcomes and successes to inform evidence-based practices for combatting adolescent obesity.

Keywords: Adolescent obesity, obesity prevention, adolescent health, malnutrition, lifestyle modification

1. Introduction

Adolescence, a period characterized by dynamic physical, neurodevelopmental, psychological, and social changes, holds pivotal importance in human development. Amidst this transformative phase, adolescent obesity emerges as an acute global health crisis, profoundly affecting millions of young individuals worldwide. The prevalence of overweight and obesity has surged significantly, transcending geographical boundaries, with severe obesity quadrupling over the last three decades (Cardel, Atkinson, Taveras, Holm, & Kelly, 2020).

Adolescents, representing diverse socioeconomic backgrounds, bear the brunt of this crisis, encountering detrimental effects on their health, quality of life, and overall well-being. Health complications such as atherosclerosis, hypertension, diabetes, and metabolic syndrome loom large. Notably, over 20% of adolescents in high-income countries grapple with overweight and obesity-related issues, reflecting an alarming trend (Cardel et al., 2020). High-income countries with the highest burden of overweight and obese children and adolescents include United States leading with an obesity rate of 42%, followed by New Zealand at 39%. Several other high-income countries, including Greece, Italy, Malta, and Australia, report obesity rates of 37%. Chile and Spain struggle with obesity rates of 36% and 34%, while Canada and the United Kingdom closely follow at 32% and 31%, respectively. (Gromada, Rees, & Chzhen, 2020). In North America, despite public health efforts, the prevalence of overweight and obesity has doubled in three decades, affecting nearly one-third of adolescents in Canada and the United States (Cardel et al., 2020; Skinner, Ravanbakht, Skelton, Perrin, & Armstrong, 2018). The urgency is evident, with Canada reporting a 7.8% obesity prevalence among adolescents aged 12-17 years (Pan-Canadian Health Inequalities Data Tool, 2017) and the United States witnessing concerning increases in overweight figures among girls aged 16-19 years (Skinner et al., 2018). The United Kingdom, too, contends with a persistent surge in adolescent obesity (van Jaarsveld & Gulliford, 2015).

Remarkably, this challenge transcends high-income nations. Low- and Middle-Income Countries (LMICs) in Asia, Africa, and Latin America, face a “double burden of disease” epidemic, evident in significant increases in body mass index and waist circumference (Abarca-Gómez et al., 2017). Adolescents in these regions face overweight

prevalence of 15% and obesity prevalence of 6% (Abarca-Gómez et al., 2017). These statistics highlight the urgent need for tailored interventions to address the global prevalence of overweight and obesity in young populations.

Adolescence, with its psychological shifts, growing autonomy, and diminished self-regulation, becomes a fertile ground for obesity development. The emotional, social, and physical health consequences that adolescents with obesity face necessitate immediate attention and empathetic support (Steinbeck, Lister, Gow, & Baur, 2018; Grossman et al., 2017). The significance of prevention becomes evident as the challenges of achieving lasting results through lifestyle modification intensify once obesity takes hold (Cardel et al., 2020).

Addressing adolescent obesity mandates a comprehensive approach, driven by a collective commitment to promote healthier lifestyles and foster supportive environments. In a world where the issue knows no borders and impacts diverse socioeconomic strata, collaborative efforts emerge as pivotal for securing a healthier future. Alongside, the exploration of effective adolescent focused methods for prevention, promotion of healthy lifestyle habits through environmental changes, and understanding the barriers and enablers to successful implementation take on equal importance.

The importance of public health prevention in curbing rising adolescent obesity rates cannot be overstated. The World Health Organization Commission on Ending Childhood Obesity underscores health education as one of its three key strategies, complemented by effective treatment options and the promotion of healthier environments to combat childhood and adolescent obesity (WHO, 2016). Centered on preventive measures, this article examines interventions addressing adolescent obesity, encompassing global evidence and strategies, which also include legislative interventions. The article explores substantiated strategies on a global scale, highlighting initiatives that promote healthy lifestyles and reinforce health foundations. The article also addresses barriers to implementation, underscores the need to investigate effective obesity prevention methods among adolescents, and advocates for the adoption of healthy lifestyle habits.

2. Method

This narrative review closely followed the standard conventions and format commonly seen in narrative literature reviews, as described by Rother, E. T. (2007). It aims to offer readers a comprehensive exploration of the current knowledge on interventions for obesity prevention in the adolescent population, focusing on its theoretical and contextual aspects.

This narrative review draws upon a comprehensive search of relevant literature from databases including PubMed, Medline and Google Scholar. We used specific keywords and phrases related to adolescent obesity, public health campaigns, policy changes, educational programs, built environment modifications, and legislative interventions to identify pertinent studies and articles. The search encompassed publications in English, with no date restrictions, enabling us to compile a wide selection of sources.

To ensure the quality and relevance of the selected articles, both reviewers independently reviewed and analyzed the articles. The selected articles underwent critical analysis, with a focus on their relevance to adolescent-centered strategies and interventions for combating obesity. This narrative review synthesizes the findings and discussions from these data sources to provide a comprehensive overview of the landscape of adolescent-focused obesity interventions, highlighting enablers and barriers to implementing adolescent focused interventions and highlighting areas that require further research and attention.

3. Results

3.1 Adolescent-Centered Initiatives to Combat Obesity

Initiatives, rooted in adolescent perspectives, have the potential to foster empowerment and ownership in health decisions. Through such initiatives, we can aim to combat obesity among adolescents and cultivate healthier lifestyles tailored to their unique needs.

To address the complex challenge of adolescent obesity, some countries have demonstrated notable progress by implementing legislative measures to restrict the advertising of unhealthy foods targeted at adolescents, facilitate nutrition labeling, and promote physical activity (Pinzon-Perez, Kotkin-Jaszi, & Perez, 2010). Evidently, specific statutory restrictions have been implemented by France to limit unhealthy food advertising targeting adolescents through the Public Health Code, while Ireland bans endorsements by celebrities for unhealthy foods and the UK prohibits such advertising during TV time for children under 16 (Pinzon-Perez et al., 2010).

A limited number of adolescent-focused initiatives are also being implemented, recognizing the distinct needs and preferences of young individuals in promoting healthier lives. Tailored public health campaigns have aimed to raise awareness about obesity risks and lifestyle choices among adolescents, while school-based programs offer

comprehensive nutrition and physical education catering to their specific needs (Webb & Wadden, 2017). Some empowerment initiatives have involved adolescents in designing and promoting health initiatives, encouraging a sense of ownership (Webb & Wadden, 2017). Additionally, technology-based interventions, such as mobile apps and social media, have aimed to engage adolescents and their families interactively in health promotion activities (Webb & Wadden, 2017).

Certain countries have pioneered large-scale public health interventions targeting adolescents. The “Let’s Move!” Campaign in the United States prioritizes adolescents by enhancing school nutrition and physical activity (Hankonen et al., 2016). Brazil’s “School Health Program” targets students with health education and activity promotion (Pinzon-Perez, et al., 2010; Silva et al., 2017). The UK’s “Change4Life” Campaign engages families, guiding healthier choices (Evans, Colls, & Hoerschelmann, 2011; Milton & Bauman, 2015). Finland’s “Finnish Schools on the Move” directly promotes physical activity and less sedentary behavior (Haapala et al., 2014). By focusing on adolescents, these initiatives address early intervention and the nurturing of healthier lifestyles for lasting well-being.

Table 1. Adolescent-Centered Strategies to Combat Obesity: Enablers

1. Policy and Regulation Legislative actions, guidelines, and regulations aimed at restricting the marketing of unhealthy foods to adolescents, promoting nutrition labeling, and encouraging physical activity in schools and communities.
2. Youth-Centric Public Health Campaigns Tailored messaging and media targeting adolescents to raise awareness about obesity's risks and the importance of healthy lifestyle choices.
3. Adolescent-Friendly Policy Changes Implementing policies related to nutrition labeling, school meals, and physical activity in schools to foster a supportive environment for healthy behaviors.
4. Youth Empowerment Programs Engaging adolescents in designing and promoting healthy initiatives to encourage ownership and participation in their own health.
5. School-Based Educational Programs Integrating comprehensive nutrition and physical education curricula that cater to the specific needs and interests of adolescents.
6. Community Recreation and Sports Clubs Establishing accessible and appealing recreational facilities and sports clubs to promote physical activity and social interaction among adolescents.
7. Adolescent Peer Support Networks Creating supportive environments where adolescents can share experiences, challenges, and successes related to healthy living.
8. Culturally Relevant Approaches Incorporating cultural norms and preferences into intervention strategies to make healthy behaviors more relatable and acceptable.
9. Technology-Based Interventions Utilizing mobile apps, social media, and online platforms to engage adolescents in fun and interactive health promotion activities.
10. Involvement of Parents and Caregivers Engaging parents and caregivers in obesity prevention efforts, providing guidance on healthy eating, sleeping and physical activity habits.
11. Longitudinal Research on Adolescent Obesity Conducting longitudinal studies to monitor the long-term effects of interventions and identify factors that sustain positive behavior changes.

Collaboration assumes a crucial, albeit less explored, role in initiatives targeting adolescents. Through partnerships with recreational facilities, families, and peer support networks, initiatives can synergize efforts to foster positive behavioral changes among adolescents (Gariépy, Janssen, Sentenac, & Elgar, 2013). Similarly, the advantages of engaging in longitudinal research are particularly noteworthy, given the dearth of information in this area. Longitudinal studies enable the examination of shifts in behaviors and health outcomes over an extended duration, yielding valuable insights into the enduring effectiveness and sustainability of interventions aimed at adolescents.

Supported by the literature referenced in this section, the following table 1 summarizes strategies prominently recognized as enablers in addressing adolescent obesity.

3.2 Challenges of Implementing Adolescent-Centered Initiatives to Combat Obesity

Implementing obesity-focused interventions can be challenging due to various barriers (Table 2). These challenges include policy and regulatory barriers arising from vested interests and conflicting priorities, resource

constraints leading to limited reach, and lack of coordination among stakeholders resulting in fragmented efforts. Social and cultural factors, such as eating habits influenced by norms and perceptions, can also impede behavior change (Gariépy et al., 2013).

Accessibility and availability of healthy options, along with aggressive marketing of unhealthy foods, pose additional hurdles (Powell, 2013). Modern sedentary lifestyles, stigma (Zuba & Warschburger, 2017) and parental influence also contribute to the obesity epidemic. Insufficient data on adolescent obesity prevalence and intervention effectiveness hampers evidence-based decision-making especially for low-middle-income countries (Das, Lassi, Hoodbhoy, & Salam, 2018; Salam, 2020).

Table 2. Adolescent-Centered Strategies to Combat Obesity: Barriers

1. Policy and Regulatory Barriers Vested interests from industries, political considerations, and conflicting priorities can hinder the adoption of policies and regulations related to food marketing, nutrition labeling, and physical activity.
2. Resource Constraints Limited funding and resource allocation for obesity prevention programs may lead to limited reach and impact of the interventions.
3. Lack of Coordination Inadequate coordination among various stakeholders and sectors can result in fragmented efforts and duplication of initiatives.
4. Social and Cultural Factors Cultural norms and societal perceptions may influence eating habits, physical activity and sleep patterns, making it challenging to promote behavior change.
5. Accessibility and Availability of Healthy Options Limited availability and affordability of healthy food options and recreational facilities in certain areas can hinder efforts to combat obesity.
6. Marketing and Advertising Aggressive marketing of unhealthy foods and beverages, especially targeting young audiences, can undermine efforts to promote healthy choices.
7. Lack of Data and Monitoring Insufficient data on the prevalence of adolescent obesity and the effectiveness of interventions can hamper evidence-based decision-making.
8. Changing Lifestyles Modern sedentary lifestyles characterized by increased screen time contribute to the obesity epidemic among adolescents.
9. Parental Influence Parental attitudes, behaviors, and support play a crucial role in shaping adolescent habits, making it important to involve parents in intervention strategies.
10. Stigma and Discrimination Stigmatization of individuals with obesity can deter them from seeking help or participating in intervention programs.

Successful initiatives require sustained political commitment, long-term funding, and engagement with multiple stakeholders (Koivusilta, Alanne, Kamila, & Ståhl, 2022). Community participation and culturally sensitive approaches play a crucial role (Koivusilta et al., 2022). Initiatives like public health campaigns, policy changes, educational programs, and built environment modifications need to be employed to promote healthier adolescent lifestyles and combat obesity (Koivusilta et al., 2022).

4. Discussion

Despite the existence of various strategies and initiatives, a notable dearth of information persists regarding their outcomes and overall effectiveness in combating adolescent obesity. The exploration and evaluation of such strategies and initiatives to combat adolescent obesity remain essential, encompassing various initiatives like public health campaigns, policy changes, educational programs, and built environment modifications. The value of future research extends to understanding and addressing barriers that hinder effective interventions. Rigorous assessment of outcomes will guide the identification of best practices, facilitating evidence-based and impactful approaches. Research can illuminate the ways to overcome challenges and draw insights from country examples, and highlighted enablers to inform and shape interventions that hold the potential to combat adolescent obesity.

Additionally, future research can delve deeper into the cultural and contextual factors influencing adolescent obesity, acknowledging that tailored solutions may be required. Understanding the unique influences on eating habits, physical activity, and societal perceptions will enable the development of culturally sensitive approaches that resonate with diverse populations.

Multi-sectoral collaboration, as highlighted earlier, remains a key component of successful interventions. Future research can explore innovative ways to foster collaboration between government agencies, healthcare providers, educational institutions, community organizations and the community. Identifying effective mechanisms for cooperation and communication can enhance the implementation and sustainability of interventions.

Moreover, longitudinal studies can provide valuable insights into the long-term effects of obesity-focused interventions among adolescents. Monitoring the impact over time and understanding potential relapses or sustained positive changes will contribute to refining intervention strategies for maximum effectiveness.

By continuing to invest in research on adolescent obesity interventions, we can advance the field's knowledge, strengthen evidence-based practices, and create a healthier environment for adolescents. Ultimately, this research can inform policies and practices that empower adolescents to make informed choices, embrace healthier lifestyles, and pave the way for a healthier and more prosperous future for the next generation.

5. Conclusion

As we navigate the critical public health challenge of adolescent obesity, it becomes evident that concerted efforts are required to address this multifaceted issue effectively. The global initiatives presented demonstrate the value of adolescent-centric approaches, which play a pivotal role in shaping healthier habits among adolescents. However, to truly combat adolescent obesity and its far-reaching consequences, further research is essential as it holds immense potential in advancing our understanding of effective intervention strategies.

This call-to-action urges researchers, policymakers, healthcare professionals, and communities to unite in our efforts to combat adolescent obesity. Through continued investment in research and innovative strategies, we can empower adolescents to make informed choices and embrace healthier lifestyles. Through immediate action, we can pave the way for a healthier and more prosperous future for the next generation. Together, let us rise to the challenge and make a lasting impact on the global fight against adolescent obesity.

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Competing Interests Statement

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