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## **THE EPIDEMIC OF CHILDHOOD OBESITY – WHO IS RESPONSIBLE FOR CHILDREN’S HEALTH AND WHAT ARE THE ETHICAL IMPLICATIONS?**

### **Abstract**

The global epidemic of childhood obesity is becoming an increasingly serious global issue with long-term consequences on children’s health. The key question is who bears responsibility for children’s health, and what ethical implications arise from these decisions. Numerous factors contribute to this issue: the family, the education system, the food industry, and the broader social and political community. Though parents play a crucial role in shaping children’s eating habits and encouraging their physical activity, the education system should not be excluded, as schools have a responsibility to promote a healthy lifestyle. On the other hand, children are often targeted by the food industry through its marketing strategies, so the industry shares part of the responsibility due for promoting unhealthy products. Governments should take a more active role in regulating these practices and ensuring access to healthy food options for all. Important ethical questions are being raised, such as the level of individual freedom of choice in these situations, social responsibility towards young people, and the balance between personal freedom and necessary public health measures. The state’s role in regulating the food

industry and enabling access to a healthier lifestyle, especially in less privileged communities, is particularly important. This paper will analyse the causes of children's obesity, the responsibility of different factors, and the ethical dimensions of this complex public health issue through a review of relevant literature.

**Keywords:** ethical implication, the education system, responsibility, the food industry, obesity

## 1. Introduction

It was estimated that approximately 42% of the world's population aged 20 years and older was overweight or obese in 2020, and this figure is expected to increase to 46% by 2035. Consequently, projections suggest that economic costs connected with overweight and obesity will grow from \$1.96 trillion in 2020 to \$4.32 trillion by 2035. A 2023 study across 31 countries ranked obesity the fourth biggest health problem, immediately after mental health, cancer, and stress (Statista, 2024).

This data indicates alarming global obesity trends, especially among children, providing the foundation for further consideration of the causes and effects of this public health issue. Over recent decades, there have been significant changes in eating habits, including the consumption of fast food and sugar-sweetened beverages, alongside a decrease in physical activity. The modern social environment is marked by the accessibility of cheap but nutrient-poor food, posing numerous challenges, especially for families with lower incomes who often lack access to healthier dietary options.

Obesity among children can lead to serious medical complications, including heart and cardiovascular diseases, type 2 diabetes, and respiratory problems (Salama, 2023: 463).

However, obesity is not solely a medical issue; it is also a social problem because it often leads to stigmatisation and discrimination, which have long-term consequences on the mental health and quality of life of both children and adults.

Ethical questions arise regarding responsibility for children's health: who is responsible for forming children's eating habits and lifestyles: parents, society, the food industry or the state institutions? Concerning this complex question of freedom of choice, it is necessary to consider how external influences, such as marketing campaigns, can shape children's decisions.

## **2. Methodology**

This review paper analyses scientific literature with the aim of considering the ethical implications and the responsibilities of the education system and the food industry regarding obesity. The review was conducted by analysing available sources published from 2002 to 2025 to encompass relevant research from the areas of ethics, public health, food policy, and education.

The literature search was conducted in the academic database *Hrčak* – the portal of Croatian scientific and professional journals, *Google Scholar*, *Scopus*, *EBSCOhost*, *ResearchGate*, and *ScienceDirect*, as well as in official publications of international organisations, such as the World Health Organization (WHO), the European Commission, and the Ministry of Health of the Republic of Croatia.

The following keywords were used during the search: ethical implications, the education system, responsibility, the food industry, and obesity. Peer-reviewed scientific articles, dissertations, official documents, and relevant reports were included in the review, while unreliable sources, sources that did not contribute to the topic, and incomplete sources were excluded from the review.

## **3. What is obesity?**

Nowadays, obesity represents one of the leading public health issues worldwide. Overweight and obesity occur when there is excessive body mass accumulation in the form of ectopic lipids, whether globally, regionally, or in specific organs, increasing the risk of adverse medical outcomes (Purnell, 2023).

Different organisations define obesity differently. The World Heart Federation (WHF) describes it as a chronic condition while the World Obesity Federation (WOF) considers it a chronic disease (Lopez-Jimenez et al., 2022: 2219). In both cases, obesity is recognised as a serious issue that undermines the general condition of the organism and the quality of life of an individual.

According to the World Health Organisation (WHO) data, about 1.9 billion people are overweight worldwide, of whom approximately 650 million are classified as obese (Lopez et al., Jimenez, 2022: 2220).

Body mass index (BMI) is commonly used to assess an adult's nutritional status. According to the definition of the World Health Organization, Mohajan and Mohajan (2023: 28) state that a body mass index below 18.5 kg/m<sup>2</sup> is classified as underweight, and between 18.5 and 24.9 kg/m<sup>2</sup> indicates normal weight. In addition, a body mass index between 25 and 29.9 kg/m<sup>2</sup> indicates overweight, while a value greater than 30 kg/m<sup>2</sup> indicates obesity. Although BMI enables a simple assessment of nutritional status, it has certain limitations. For example, it does not distinguish between fat, muscle, and bone mass, nor does it show the distribution of body fat or its type (Centres for Disease Control and Prevention, 2024).

Due to their continued growth and development, children and adolescents aged 2 through 19 have BMI values expressed based on percentiles. The categories of percentiles include underweight (less than the 5<sup>th</sup> percentile), healthy weight (the 5<sup>th</sup> percentile to the 85<sup>th</sup> percentile), overweight (the 85<sup>th</sup> percentile to the 95<sup>th</sup> percentile), obesity (95<sup>th</sup> percentile or greater), and severe obesity (120% of the 95<sup>th</sup> percentile or greater or 35 kg/m<sup>2</sup> or greater). These values are calculated based on children's and adolescents' age and sex (Centres for Disease Control and Prevention, 2024).

According to the data, in 2022, 37 million children under the age of 5 were overweight. In addition, 390 million children and adolescents aged 5-19 were overweight, while 160 million children and adolescents were living with obesity worldwide (World Health Organization, 2025).

#### **4. The causes and effects of obesity**

The causes of overweight and obesity are numerous and interconnected. One significant factor is the association between parental and child obesity. Research shows that children whose parents are overweight or obese have a 1.97 times higher chance of developing obesity, especially when both parents are obese (Lee et al., 2022: 42).

The role of the family is vital in this context. Family lifestyle represents a critical risk factor for the development of obesity among children, and parental dietary behaviours greatly influence children's eating habits (Lee et al., 2022: 42). Additionally, parents' level of education is shown as a relevant indicator of children's body mass. The lower level of parents' education - either during pregnancy or in early childhood - is associated with a higher index of children's body mass and with a higher possibility of overweight and obesity at the ages of six and ten (Lin et al., 2021: 776).

Overweight and obesity are related to a series of severe medical issues. Bray et al. (2017: 719) state that obesity is a common cause of numerous diseases and conditions, including diabetes mellitus, cardiovascular diseases, hypertension, obstructive sleep apnoea, osteoarthritis, gall bladder disease, and malignant diseases, such as breast cancer and endometriosis, as well as stigmatisation due to people's appearance.

The consequences of obesity can be severe and even fatal in certain situations. Lopez-Jimenez et al. (2022: 2220) state that obesity significantly increases mortality from cardiovascular diseases, while the research conducted by Roosa et al. (2016: 138) demonstrated that the risk increased when a person was an active smoker.

## **5. Ethical implications**

Obesity among children represents a global public health issue that significantly impacts health, quality of life, and society in general (Sahoo et al., 2015). The World Health Organization (WHO, 2022) recognises it as one of the leading threats to public health, with a steady increase in childhood obesity. Besides physical consequences, obesity has important psychological and social implications (Pont et al., 2017: 4-5).

Despite this, the ethical dimensions of this problem, including parental responsibility, the role of educational and health institutions, and the question of stigmatization, often remain insufficiently researched (Hoeeg et al., 2023: 2). An ethical approach to the problem of childhood obesity requires considering social responsibility. The state and society play key roles in creating an environment that encourages healthy lifestyle habits and prevents obesity.

To address this, strengthening regulatory mechanisms is necessary, as they restrict advertising of calorie-dense foods targeted at children and promote education about balanced diets in schools (Gollust & Lantz, 2009: 1094). Additionally, interventions should strengthen communities rather than blaming individuals (Puhl et al., 2010: 1025; Sahoo et al., 2015).

### **5.1 Parental influence**

Parents play a crucial role in shaping children's eating habits, as their behaviour and decisions serve as the foundation for their children's health (Pont et al., 2017: 7). However, many parents face social and economic constraints, such as poverty, overtime hours, or limited access to a healthy diet (Gray et al., 2018: 10).

Obesity in childhood is not just a medical but also an ethical issue, with the family context playing a decisive role. A family shapes children's eating habits and their level of physical activity, but it can also represent the source of stigmatisation, which additionally makes it harder for an overweight child (Hoeeg et al., 2025: 3).

An ethical approach to this problem requires a deeper understanding of family dynamics to prevent the deterioration in the child's physical health (Xu, 2022: 7). Socioeconomic factors – such as income, parents' level of education, and family structure – significantly influence the risk of developing obesity. Furthermore, inadequate attention to diet can be considered a form of health neglect in certain circumstances (Zhang et al., 2025: 7).

The entire family needs to be included in this struggle against obesity while respecting a child's autonomy and emotional well-being (Onay et al., 2024: 2). Children learn most by observing their parents – if parents have a healthy diet and regular physical activity, children are likely to follow their example (Rhodes et al., 2020: 20).

Instead of coercion, it is ethical to provide children with healthy options and allow them the choice, which can influence their self-esteem and their sense of self-worth (Healthy Eating Research, 2021: 3). Positive family surroundings, which emphasise the fun side of physical activity and healthy diet (Madsen et al., 2024: 2), reduce the risk of stigmatisation and prevent emotional consequences such as shame or low self-esteem (Concincion et al., 2023: 63).

Respecting children's individual interests, for example, promoting dance and games rather than imposing unwanted sports activities, is an ethically sound approach that supports freedom of choice, self-esteem, and children's holistic development (Sarwar, 2019: 17).

## ***5.2 Influence of the media***

Mass and social media have a strong impact on shaping children's dietary habits, body image, and behaviours, which raises a number of ethical questions in the context of childhood obesity. Media exposure, particularly through online advertising, often promotes the consumption of high-calorie and nutritionally poor foods and contributes to the creation of so-called obesogenic environments, which facilitate the development of excessive body weight from an early age (Coleman et al., 2022: 5).

Children spend an average of approximately 3.5 hours per day in front of screens, which increases the risk of unconscious overeating and encourages a preference for fast food under the influence of advertisements, video games, and social media content (Bilić-Kirin, 2017: 64).

Sensory marketing further amplifies the media's influence by stimulating various senses to evoke emotional responses and encourage impulsive purchases (Čarapina Zovko & Đinkić, 2022: 32). Visual marketing, particularly through advertisements and posters, often depicts happy families or popular characters consuming unhealthy food, creating positive associations with certain products. Children, due to their limited capacity for critical reasoning, are unable to fully recognise the manipulative nature of such messages and are therefore particularly vulnerable to marketing influences (Bragg et al., 2018: 4).

Unethical targeting of children is evident in the use of various marketing tactics that employ colours, celebrities, or claims such as “8 out of 10 experts recommend,” to create an impression of expertise, trustworthiness, and necessity of purchase. The use of athletes and animated characters in promoting fast food further normalises unhealthy dietary patterns, while strategies such as “last chance to buy” are used to encourage impulsive consumption of products high in sugar, fats, and additives (Lafontaine et al., 2025: 6).

### ***5.3 Government influence***

Ethics dictate that marketing practices must aim to protect consumer well-being, particularly that of children, who represent a vulnerable group exposed to manipulative techniques that encourage unhealthy eating habits and contribute to the development of childhood obesity. Therefore, governments need to introduce stricter regulations that limit or prohibit the advertising of unhealthy foods and beverages directed at children on television, the Internet, and other digital platforms.

Fiscal measures such as taxes on sugary drinks and subsidies for healthy food products have shown positive results in countries such as the United Kingdom, Saudi Arabia, Mexico, and South Africa, reducing consumption of harmful products and contributed to lowering obesity rates (World Health Organization, 2022).

In addition to marketing regulation, European policies also recommend interventions related to food labelling, promotion, and sales, as well as their integration into educational campaigns that encourage healthy eating habits (Croatian Parliament, 2018).

In 2017, the Croatian Parliament introduced the Croatian Obesity Awareness Day, celebrated on March 16, with the aim of raising awareness about the prevention, diagnosis, and treatment of obesity, as well as promoting proper nutrition and physical activity (Croatian Parliament, 2023). The Zagreb Declaration (2023), adopted at the Summit of the Spouses of European Leaders, further emphasises the need to prevent childhood obesity, particularly in the wake of the adverse effects of the COVID-19 pandemic, which limited mobility and increased sedentary lifestyles. The Declaration calls for innovative, coordinated actions by governments, schools, families, and communities to promote healthy lifestyles and foster international cooperation in creating supportive and health-promoting environments for children.

#### ***5.4 The influence of educational institutions and the health system***

For effective public health prevention, it is essential that preschools, schools, and healthcare institutions actively promote physical activity and healthy nutrition. Through policies, programmes, and interventions, these institutions have a responsibility to protect children from harmful influences, ensure ethically acceptable practices, and provide equal access to prevention and treatment. Education on healthy lifestyle habits should be integrated into curricula, supported by adequate infrastructure and the availability of nutritionally balanced food in accordance with dietary guidelines. Since children spend a large portion of their day in educational institutions, these institutions play a key role in developing lasting positive dietary and physical activity habits (World Health Organization, 2023).

In Croatia, despite the systematic school health examinations (CroCOSI initiative), there is still a lack of standardised data collection on dietary habits and physical activity levels, as well as insufficient integration of school and healthcare programmes aimed at obesity prevention. Although national plans for prevention and treatment have been developed in recent years, challenges remain in terms of coordination, resources, and the implementation of interactive educational models (Croatian Institute of Public Health, 2021: 14).

In contrast, countries such as the Netherlands, the United Kingdom, and Sweden implement integrated care models in which health and education systems work together to assess and support children with active involvement of parents and the local community. Such strategies have shown significant effects in reducing childhood obesity rates (Koetsier et al., 2023: 2; Basilico et al., 2024: 9; Klein et al., 2024: 9).

It is an ethical imperative to ensure equal access to education and healthcare for all children, with particular attention to vulnerable groups, and to develop inclusive programmes that promote healthy habits through support and empowerment rather than stigmatisation (Jalilzadeh & Goharinezhad, 2025: 12). Croatia is in the process of strengthening such systems, yet challenges remain in achieving a comprehensive, integrated approach already established in some countries of the European Union.

## **6. Discussion**

The discussion on ethics and the prevention of childhood obesity requires a shift from individual causes towards social and moral structures. Within the domains of family, media, government, and educational and public health institutions, the tension between personal and systemic responsibility becomes clearly visible. In public discourse, parents are often portrayed as the primary culprits; however, such an approach is overly simplistic and fails to consider the broader social context. When healthy choices become a luxury, when nutritionally rich food costs more than processed food, and when a safe space for play is a privilege, the concept of parental blame loses its meaning (Inoue et al., 2023: 7; Hui & Jenatabadi, 2025: 3). Family responsibility can exist only if society simultaneously ensures fair and accessible conditions for healthy living.

The media further raises the question of ethical boundaries in a market-driven society. The systematic exposure of children to aggressive marketing of unhealthy food demonstrates how profit often overpowers moral obligations toward the vulnerable (Guimarães et al., 2025: 2). Despite the global recommendations of the World Health Organization from 2022, national regulations rarely go beyond an advisory level. If it is the moral duty of the state to protect children, the question arises: why is the market still allowed to shape their eating habits freely? Childhood obesity thus becomes an ethical indicator of social priorities and a measure of society's willingness to limit profit when it endangers health.

The state acts as an ethical mediator between market power and social vulnerability. The Action Plan for Obesity Prevention 2024–2027 (2024) in Croatia represents an attempt at an institutional response, but its effectiveness depends on the transition from declarative principles to real action.

The Plan recognises obesity as one of the greatest public health challenges and encourages cooperation among the health, education, agriculture, and media sectors. However, most measures remain at the level of recommendations, without clearly defined implementation mechanisms, which raises questions about the moral credibility of such policy. Can the state be considered ethically responsible if children's health depends on institutional goodwill rather than on a binding system of support? The Plan also acknowledges social and economic inequalities, but fails to offer concrete measures such as subsidising healthy meals or supporting local food producers. In doing so, responsibility is acknowledged in principle but not genuinely redistributed.

Within educational institutions, progress in the quality of children's nutrition has been visible, as confirmed by the research from the Croatian Institute of Public Health and UNICEF (2024), yet regional differences persist (Filipov et al., 2025: 1315). European experience shows that school meal programmes achieve success only when they are sustainably financed and linked to health education (European Union, 2024). The Croatian Plan recognises these principles, but remains largely declarative: the goals are modest, and implementation is insufficient.

The healthcare system has a moral duty to act preventively rather than reactively. Partnerships among schools, healthcare institutions, and local communities are crucial for long-term change. Education and healthcare institutions should not serve merely as transmitters of knowledge, but as bearers of social responsibility. Their ethical value is not measured by the number of workshops conducted, but by the creation of an environment where healthy eating is the norm rather than the exception.

Based on the analysed sources and policies, it is clear that the problem of childhood obesity cannot be addressed solely at the individual level. It is necessary to re-examine the ethical foundations of social structures and to clearly define the boundaries of responsibility between individuals, institutions, and the market. Such an approach leads to collective and systematic action in protecting children's health as a shared moral good.

## **7. Conclusion**

The epidemic of childhood obesity raises complex ethical questions, among which the issue of freedom of choice is particularly prominent. The key ethical dilemma refers to the question of who bears responsibility for children's health—parents, society, the state,

educational institutions, or the food industry. Parents have the freedom to make decisions regarding their children's diet and lifestyle; however, the question arises as to whether they should be solely responsible, given that children often lack the capacity for independent decision-making.

The limitation of autonomy becomes an ethically relevant issue when considering that children, as a vulnerable group, are particularly susceptible to manipulation through advertising and marketing campaigns that promote unhealthy eating patterns. In this context, society has an ethical obligation to act preventively and protectively by introducing regulatory measures that restrict the marketing and sale of nutritionally poor food targeted at children. Although such regulation may potentially interfere with freedom of choice, its primary goal is to protect children's health and prevent long-term negative consequences such as obesity and related diseases.

Besides the questions of freedom and responsibility, an important ethical dimension lies in the problem of stigmatising children with excessive body weight. Children who suffer from obesity are often exposed to ridicule, teasing, and social exclusion, which can lead to long-term psychological consequences, including low self-esteem, depression, and social anxiety. Stigmatisation makes it even more difficult for children to adopt healthier lifestyle habits and further worsens their emotional condition, creating a vicious cycle of poor mental and physical health. An ethical approach to prevention must therefore encompass not only physical health, but also the protection of dignity, emotional well-being, and equal social acceptance of every child.

Schools and the state also play a crucial role in ensuring healthy options and promoting physical activity, which includes an ethical responsibility to create environments that support children's health. However, the question remains: where does parental freedom end, and where does the obligation of society and institutions begin? The challenge lies in balancing individual freedoms with the need for public health interventions that can contribute to reducing childhood obesity.

Managing children's dietary choices outside the home and school, for example, when purchasing unhealthy foods in stores, represents a challenge that cannot be fully resolved by simply providing healthy meals in formal settings. One effective strategy is education that goes beyond merely offering healthy options. Children should be taught what constitutes nutritious food and why such choices matter, including information about the consequences of excessive

sugar and fat intake and the impact of diet on the body. Educational programmes, supported by parents and schools, can help children develop critical thinking skills when faced with temptations such as sweets in stores.

On the other hand, regulating the availability of unhealthy food, particularly near schools, can significantly reduce temptation. Restricting the marketing and sale of unhealthy products around schools, along with policies that limit access to such foods, has proven to be an effective tool. Fiscal measures, such as the taxes on sweets, stricter rules on the placement of unhealthy foods in stores, and restrictions on their accessibility to children, can further reduce impulsive consumption.

The epidemic of childhood obesity cannot be solved solely at the individual level. Collective action is required, including regulating the marketing of unhealthy food, educating on proper nutrition, and promoting of physical activity in schools and communities. Public policies must aim to create a healthier and fairer environment for all members of society, with particular emphasis on protecting the youngest and the most vulnerable.

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## **EPIDEMIJA DJEČJE PRETILOSTI – TKO JE ODGOVORAN ZA ZDRAVLJE DJECE I KOJE SU ETIČKE IMPLIKACIJE?**

### **Sažetak**

Globalna epidemija dječje pretilosti postaje sve ozbiljniji globalni problem s dugoročnim posljedicama na zdravlje djece. Ključno pitanje je tko snosi odgovornost za zdravlje djece i koje etičke implikacije proizlaze iz tih odluka. Brojni čimbenici doprinose ovom problemu: obitelj, obrazovni sustav, prehrambena industrija te šira društvena i politička zajednica. Iako roditelji igraju ključnu ulogu u oblikovanju prehrambenih navika djece i poticanju njihove tjelesne aktivnosti, obrazovni sustav ne bi trebao biti isključen, jer škole imaju odgovornost promicati zdrav način života. S druge strane, djeca su često meta prehrambene industrije kroz svoje marketinške strategije, pa industrija dijeli dio odgovornosti za promicanje nezdravih proizvoda. Vlade bi trebale aktivnije regulirati ove prakse i osigurati pristup zdravim prehrambenim opcijama za sve. Postavljaju se važna etička pitanja, poput razine individualne slobode izbora u takvim situacijama, društvene odgovornosti prema mladima i ravnoteže između osobne slobode i nužnih javnozdravstvenih mjera. Uloga države u reguliranju prehrambene industrije i omogućavanju pristupa zdravijem načinu života, osobito u manje privilegiranim zajednicama, posebno je važna. Ovaj rad analizirat će uzroke pretilosti djece, odgovornost različitih čimbenika i etičke dimenzije ovog složenog javnozdravstvenog pitanja kroz pregled relevantne literature.

**Ključne riječi:** etičke implikacije, obrazovni sustav, odgovornost, prehrambena industrija, pretilost