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Analysis of the Causes and Countermeasures of Adolescent Obesity

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Abstract. Adolescent obesity has become a pressing global health issue, with particularly prominent growth observed in China. This problem not only threatens the physical health of adolescents but also affects their mental health, thereby hindering their growth and development. This paper adopts the literature analysis method, focusing on analyzing the causes of adolescent obesity and proposing corresponding countermeasures. The study finds that adolescent obesity results from the interweaving of multiple factors, including individual behaviors (unhealthy eating habits, lack of exercise), family environment (unhealthy dietary patterns, insufficient guidance), and social influences (aggressive marketing of junk food, lack of health promotion). The study confirms that the "individual-family-society" collaborative intervention system is the key to alleviating this problem.

Keywords: Dietary structure, Nutritional cognition, Public health, Collaborative intervention, Family dietary patterns

1. Introduction

With the rapid development of the social economy and science and technology, people have adapted their lifestyles to accommodate fast-paced living. Nowadays, adolescent obesity has become a prominent global health issue, and this problem is increasingly severe in China. According to the Report on Chinese Residents' Nutrition and Chronic Disease Status, the prevalence of overweight and obesity among adolescents in China has been continuously rising, with some regions even exceeding 30%. Obesity not only directly affects physical health by increasing the risk of chronic diseases like diabetes [1], but may also trigger psychological problems during this sensitive period, such as low self-esteem, anxiety, and depression. These seemingly minor issues have a significant impact on adolescents' study and life. Identifying the causes of obesity and solving them one by one can not only weaken these negative impacts from the root but also further arouse social attention to the problem of adolescent obesity, ultimately promoting the progress of individuals and even human society. At present, although academic research on adolescent obesity has achieved certain results, the systematic analysis of its causes still needs to be deepened. In terms of countermeasures, the existing intervention measures also have many deficiencies. Based on this, this paper uses the literature analysis method, aiming to conduct a comprehensive and in-depth analysis of the causes of adolescent obesity, clarify the influence mechanism from multiple levels such as individual behaviors to social factors, and on this basis, put forward targeted and practical countermeasures and

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suggestions. The research is not only helpful to enrich the theoretical research on adolescent obesity but also conducive to individuals and even the country in formulating weight loss plans, families in improving parenting styles, and schools in carrying out health education, so as to effectively curb the spread of adolescent obesity and contribute to promoting the healthy growth of adolescents.

2. Analysis of the causes of adolescent obesity

The causes of adolescent obesity stem from three key dimensions: individual, family, and societal factors. The following discussion will address each of these aspects in turn.

2.1. Improper dietary habits and nutritional imbalance in adolescents

From an individual perspective, poor dietary habits and nutritional imbalance constitute significant contributing factors to adolescent obesity. Regarding eating patterns, many adolescents exhibit irregular eating behaviors, including skipping breakfast, overeating, and consuming late-night snacks during late-night activities. These behaviors can disrupt metabolic processes and impair energy homeostasis regulation. At the same time, many adolescents prefer high-sugar, high-fat, and high-salt foods, such as fried foods and sugary drinks. Such foods are often high in energy density and relatively single in nutrients. Long-term intake will make the body's energy intake far exceed consumption, which will then be converted into fat accumulation [2]. From an individual perspective, poor dietary habits and nutritional imbalance constitute significant contributing factors to adolescent obesity. Regarding eating patterns, many adolescents exhibit irregular eating behaviors, including skipping breakfast, overeating, and consuming late-night snacks during late-night activities. These behaviors can disrupt metabolic processes and impair energy homeostasis regulation. Excessive intake of added sugars, high sodium, and high fat in the dietary structure is a key trigger for adolescent obesity and metabolic abnormalities. A study by Professor Antonios Zampelas' team published in the journal 'Children', based on data from 1,165 children and adolescents aged 2-18 in Greece, revealed that 20.6% of the participants (rising to 30% after excluding samples with low intake bias) consumed added sugars exceeding the recommended threshold of 10% of total energy intake; this group had a significantly higher risk of overweight and obesity [3]. Additionally, their added sugars mainly came from high-energy foods, and high-sugar diets also led to insufficient intake of nutrients such as dietary fiber, resulting in a "high-energy, low-nutrition" imbalance that affects metabolic development. This finding echoes the "Food Choice Decision Theory" proposed by scholars like Sobal, indicating that adolescents' preference for high-sugar foods is the result of the combined effect of multiple factors, providing empirical evidence for subsequent interventions.

2.2. Family dietary patterns and parenting styles

The family environment plays a key role in the formation of adolescent obesity. Familial dietary patterns exert a direct influence on adolescents' eating behaviors. When families predominantly provide energy-dense but nutrient-poor foods, adolescents are more likely to adopt unhealthy dietary habits. Notably, some parents themselves have bad dietary preferences, such as liking snacks and fried foods, which will subtly affect adolescents [4] . Family parenting styles can also affect adolescents' weight. Some parents lack correct guidance and control over adolescents' diets, excessively satisfying their children's needs for snacks and junk food, or using food to comfort their children when they cry. These behaviors may lead to excessive energy intake by adolescents.

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Furthermore, time-constrained parents often fail to facilitate physical activities, resulting in diminished motivation and limited opportunities for adolescents to engage in regular exercise.

2.3. The impact of the social environment on adolescent obesity

The impact of the social environment on adolescent obesity cannot be overlooked. In particular, the food market is saturated with processed and fast foods that are high in sugar, fat, and salt, which are heavily marketed to adolescents. In order to pursue profits, food companies sell a large number of such foods in places easily accessible to adolescents, such as around campuses and on online platforms, which increases the channels for adolescents to obtain unhealthy foods [5]. There are also certain problems in the orientation of social media publicity. Some media over-publicize high-calorie and high-fat foods, while publicity on healthy diets and physical exercise is relatively insufficient.

3. Analysis of countermeasures for adolescent obesity

3.1. Measures at the individual level

To combat adolescent obesity at the individual level, a comprehensive and scientifically grounded approach should be implemented. Primary interventions must emphasize nutritional literacy, equipping adolescents with practical knowledge about macronutrients, micronutrients, and their metabolic effects. This education should extend beyond classroom instruction to include hands-on cooking workshops and supermarket tours that teach practical skills for identifying and preparing healthy foods.

Behavioral modification techniques can significantly enhance intervention effectiveness. Adolescents should be encouraged to maintain food diaries and use mobile apps to track nutritional intake and physical activity. Cognitive behavioral strategies can help address emotional eating patterns and establish positive reinforcement for healthy choices.

The exercise component should incorporate both structured activities (like team sports and gym workouts) and lifestyle movement (such as active commuting and stair climbing). Recent research suggests that combining aerobic exercise with resistance training yields optimal metabolic benefits. Additionally, ensuring adequate sleep duration and quality is crucial, as sleep deprivation disrupts appetite-regulating hormones.

Peer support programs can create social accountability, while wearable technology provides real-time feedback. These multifaceted strategies, when consistently applied, can establish lifelong habits that prevent obesity and promote overall wellbeing.

3.2. Measures at the family level

To effectively implement family-level interventions, parents should adopt a comprehensive approach that integrates dietary modifications with behavioral strategies. Practical implementations should focus on gradually transforming the family's food environment by increasing the proportion of plant-based foods such as vegetables, fruits, and whole grains while incorporating lean protein sources including fish, poultry, and legumes. This nutritional transition should be accompanied by a systematic reduction in the availability of processed foods high in sugar and saturated fats, implemented through regular family meal times that promote mindful eating practices. Beyond dietary changes, parents serve as primary educators in shaping their children's eating behaviors through interactive nutrition education that explains the health impacts of food choices,

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collaborative meal planning and preparation to build essential life skills, and the establishment of reasonable guidelines for snack consumption that avoid creating problematic food taboos. Equally important is the parental role in modeling and facilitating physical activity, which should include scheduling dedicated family exercise time for at least 30 minutes daily, creating an active home environment by limiting screen time and providing accessible sports equipment, and regularly participating in joint activities such as family walks, cycling, or swimming. Parents should further reinforce these efforts by actively encouraging participation in school or community sports programs while consistently demonstrating active lifestyle choices through their own behavior, thereby establishing a holistic approach to obesity prevention that addresses both nutritional and physical activity dimensions within the family context.

3.3. Measures at the social level

Addressing adolescent obesity requires a multi-sectoral societal approach that creates supportive environments for healthy choices. Beyond government regulation and media responsibility, several additional interventions should be implemented. Educational institutions play a pivotal role by integrating comprehensive nutrition education into school curricula and ensuring all students receive at least 60 minutes of daily physical activity. Schools should also reform cafeteria menus to emphasize balanced meals while eliminating unhealthy snack options. The healthcare system must enhance obesity screening and intervention programs, training pediatricians to provide personalized lifestyle counseling. Community organizations can establish youth-focused wellness initiatives, such as cooking classes and sports leagues with peer mentors. Urban planning departments should prioritize walkable neighborhoods and safe cycling infrastructure to promote active transportation. Workplace policies should support parents' participation in family wellness activities through flexible scheduling. Additionally, the food industry should be incentivized to reformulate products and adopt transparent labeling systems. These coordinated efforts across all societal sectors can create the sustained environmental and behavioral changes needed to effectively combat adolescent obesity. By aligning policies, systems, and social norms, we can establish healthier defaults that make the prevention of obesity an achievable societal goal rather than an individual challenge.

4. Conclusion

The increasingly severe problem of adolescent obesity is the result of the combined effects of individual behaviors, family environment, and social factors. At the individual level, poor dietary habits (characterized by irregular eating patterns and preference for energy-dense foods) combined with sedentary lifestyles create chronic positive energy balance. Family environments significantly contribute through suboptimal dietary patterns and permissive parenting styles that fail to establish healthy eating boundaries. Societally, the ubiquitous availability of processed foods and inadequate promotion of physical activity create obesogenic environments.

The proposed multi-level interventions demonstrate that effective prevention requires integrated strategies. Individual nutritional education must be complemented with behavioral modification techniques and structured exercise programs. Family-based approaches should transform home food environments while modeling active lifestyles. Most crucially, societal measures must coordinate policy reforms across education, urban planning, healthcare, and food industry sectors to create sustainable systemic change.

These findings underscore that combating adolescent obesity demands simultaneous action across all ecological levels. Successful implementation of these evidence-based strategies could not only

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address current obesity rates but also establish lifelong health-promoting patterns, ultimately reducing the burden of obesity-related diseases in future generations. The study highlights the urgent need for collaborative efforts among individuals, families, and society to create environments that support healthy adolescent development.

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