



A Quantitative Study on Parental Influence and Lifestyle Factors in Child Obesity

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Abstract: Child obesity is a growing global health concern, significantly impacting both developed and developing countries. This study examines the influence of parental behaviors and lifestyle factors on child obesity in Keyouqianqi, Inner Mongolia, China. Employing a quantitative research design, data was collected from 50 parents of obese children through structured questionnaires. Statistical analyses revealed significant associations between parental promotion of healthy eating, physical activity encouragement, and lower obesity rates, whereas restrictive feeding practices were linked to higher obesity rates. Lifestyle factors such as high-calorie food consumption, sugary beverage intake, insufficient physical activity, and excessive screen time were also significantly associated with child obesity. The findings underscore the importance of comprehensive interventions addressing both parental behaviors and children's lifestyle choices to combat child obesity effectively.

Keywords: Child obesity, parental influence, lifestyle factors, dietary habits, physical activity, sedentary behavior

1. Introduction

1.1 Background of the Study
Child obesity has become a critical global health issue, with increasing prevalence rates observed in both developed and developing countries. According to the World Health Organization (WHO), the number of overweight or obese infants and young children aged 0 to 5 years increased from 32 million globally in 1990 to 41 million in 2016 [1]. This upward trend has raised significant concerns due to the associated health risks, including type 2 diabetes, cardiovascular diseases, and psychological disorders [2]. The rapid urbanization, shifts in dietary patterns towards high-calorie and low-nutrient foods, and sedentary lifestyles are major contributors to the rising rates of childhood obesity worldwide [3].

In China, the prevalence of child obesity has also shown a worrying increase. The China Health and Nutrition Survey indicates that the rate of overweight and obese children aged 7 to 18 years rose from 5.3% in 1991 to 20.5% in 2015 [4]. This dramatic rise is attributed to changes in lifestyle, dietary habits, and reduced physical activity [5]. Within Inner Mongolia, a region undergoing rapid economic development and urbanization, the issue of child obesity is becoming increasingly prevalent, mirroring national trends [6].

The People's Hospital of Keyouqianqi, Inner Mongolia, China, established in 1947, has witnessed the local community's growing health concerns, including the rise in child obesity. This hospital, being a comprehensive healthcare facility, is strategically positioned to address and study this health issue. The current study focuses on understanding the parental influence and lifestyle factors contributing to child obesity in this local context, aiming to inform effective interventions and policies.

1.2 Statement of the Problem

Child obesity is a multifaceted problem influenced by various factors, including parental behavior, lifestyle choices, and socio-economic conditions. Despite global efforts to curb its prevalence, child obesity continues to rise, posing severe health risks and long-term consequences. In Keyouqianqi, Hinggan League, the increasing number of obese children calls for a detailed investigation into the specific factors at play within this community. Understanding the role of parental influence and lifestyle factors is crucial in developing targeted interventions that can mitigate this health issue effectively.

1.3 Objectives of the Study

The primary objective of this study is to investigate the parental influence and lifestyle factors associated with child obesity among children in Keyouqianqi, Inner Mongolia, China. Specifically, the study aims to:

Assess the prevalence of child obesity among the participants.

Analyze the impact of parental behaviors and attitudes on children's dietary habits and physical activity levels.

Identify key lifestyle factors contributing to child obesity in this community.

Provide recommendations for interventions based on the findings to help reduce the prevalence of child obesity.

1.4 Research Questions

This study seeks to answer the following research questions:

- What is the prevalence of child obesity among the study participants?
- How do parental behaviors and attitudes influence children's dietary habits and physical activity levels?
- What are the key lifestyle factors contributing to child obesity in Keyouqianqi, Hinggan League?



- What interventions can be recommended to reduce the prevalence of child obesity based on the study findings?
- 1.5 Significance of the Study

This study addresses a critical public health issue that has both immediate and long-term health implications for children. By focusing on parental influence and lifestyle factors, the study provides valuable insights into modifiable aspects of child obesity, offering a pathway for effective intervention. Secondly, the findings of this study will contribute to the existing body of knowledge on child obesity, particularly in the context of Inner Mongolia, where research on this issue is limited. Finally, the recommendations derived from this study can inform healthcare providers, policymakers, and community leaders in developing and implementing strategies to combat child obesity, ultimately promoting a healthier future for children in Keyouqianqi and beyond.

2. Literature Review

2.1 Overview of Child Obesity

Child obesity is a significant public health issue globally, characterized by an excessive accumulation of body fat that may impair health. According to the World Health Organization (WHO), childhood obesity has reached alarming rates worldwide, with an estimated 38 million children under the age of 5 being overweight or obese in 2019 [7]. Obesity in children is associated with numerous adverse health outcomes, including type 2 diabetes, cardiovascular diseases, and psychological issues [8]. The condition is influenced by a complex interplay of genetic, behavioral, and environmental factors [9]. As the prevalence of childhood obesity continues to rise, understanding its determinants and developing effective prevention strategies have become crucial public health priorities.

2.2 Parental Influence on Child Obesity

Parental influence plays a crucial role in the development and prevention of childhood obesity. Parents shape children's eating behaviors, physical activity patterns, and overall lifestyle through modeling, dietary choices, and the home environment [10]. Studies have shown that parental attitudes towards food, their own eating habits, and their feeding practices can significantly impact children's weight status [11]. For instance, restrictive feeding practices have been linked to overeating and weight gain in children [12]. Moreover, parental involvement in physical activities and encouragement can promote healthier behaviors in children, reducing the risk of obesity [13]. Thus, parental behaviors and attitudes are critical targets for interventions aimed at preventing childhood obesity.

2.3 Lifestyle Factors Contributing to Child Obesity

Various lifestyle factors contribute to the development of childhood obesity, including dietary habits, physical activity, and sedentary behaviors. The consumption of high-calorie, low-nutrient foods and sugary beverages has been strongly associated with weight gain in children [14]. Additionally, insufficient physical activity and increased screen time contribute to the energy imbalance that leads to obesity [15]. Environmental factors, such as the availability of recreational spaces and the accessibility of healthy foods, also play a role in shaping children's lifestyle behaviors [16]. Addressing these lifestyle factors through comprehensive strategies is essential for effective obesity prevention and management.

2.4 Theoretical Framework

The theoretical framework for this study is based on the Theory of Planned Behavior (TPB), which posits that an individual's behavior is determined by their intention to perform the behavior, which in turn is influenced by attitudes, subjective norms, and perceived behavioral control [17]. In the context of childhood obesity, TPB can be used to understand how parental attitudes towards healthy behaviors, perceived social pressures, and their confidence in managing their child's weight influence their actions [18].

2.5 Previous Studies on Child Obesity in China

Research on childhood obesity in China has highlighted significant trends and contributing factors. The prevalence of overweight and obesity among Chinese children has increased substantially over the past few decades, with urbanization and economic development being major drivers [19]. Studies have identified dietary changes, reduced physical activity, and increased sedentary behaviors as key contributors to this trend [20]. Additionally, cultural factors, such as the traditional preference for plumpness in children and the impact of the one-child policy, have also been implicated [6]. Understanding these unique contextual factors is crucial for developing effective interventions tailored to the Chinese population.

3. Methodology

3.1 Research Design

This study employs a quantitative research design to examine the influence of parental behaviors and lifestyle factors on child obesity. A cross-sectional survey approach is utilized to collect data from parents of children with obesity problems. This design is chosen for its ability to provide a snapshot of the current situation and to identify potential associations between variables at a specific point in time.

3.2 Study Setting: People's Hospital of Keyouqianqi, Inner Mongolia, China

The study is conducted at the People's Hospital of Keyouqianqi, located in Inner Mongolia, China. Established in 1947, this hospital is a comprehensive healthcare facility that serves as a critical medical center for the local community. The hospital has a rich history and is well-equipped with modern medical technology, making it an ideal setting for conducting health-related research.

3.3 Population and Sample

The population for this study includes parents of children diagnosed with obesity who are receiving treatment or

consultation at the People’s Hospital of Keyouqianqi. A sample of 50 participants is selected for the study. These participants are chosen to provide insights into the parental influence and lifestyle factors contributing to child obesity in this specific geographical and cultural context.

3.4 Sampling Technique

A purposive sampling technique is employed to select participants for this study. This non-probability sampling method is used to ensure that only parents of children with obesity problems are included in the study. Participants are selected based on their availability and willingness to participate, ensuring a sample that is relevant to the research objectives.

3.5 Data Collection Instruments

The primary data collection instrument for this study is a structured questionnaire. The questionnaire is designed to gather information on parental behaviors, lifestyle factors, and demographic characteristics. It includes sections on dietary habits, physical activity levels, and parental attitudes towards health and nutrition. The questionnaire is developed in both English and Chinese to accommodate the participants' language preferences.

3.6 Data Collection Procedure

Data collection is carried out using Wen Juanxing, a Chinese online survey system. Participants are provided with a link to the online survey, which they can complete at their convenience. The use of an online survey system ensures a streamlined and efficient data collection process, allowing participants to respond anonymously and reducing the likelihood of response bias.

3.7 Ethical Considerations

Ethical considerations are of paramount importance in this study. Informed consent is obtained from all participants before they complete the survey. Participants are informed about the purpose of the study, the voluntary nature of their participation, and their right to withdraw at any time without any consequences. Confidentiality and anonymity are maintained throughout the study, and data is stored securely to protect participants' privacy.

4. Results and Interpenetration

4.1 Demographic Profile of Participants

The study involved 50 parents of children diagnosed with obesity, receiving treatment or consultation at the People’s Hospital of Keyouqianqi. The demographic profile of participants is summarized in Table 4.1.

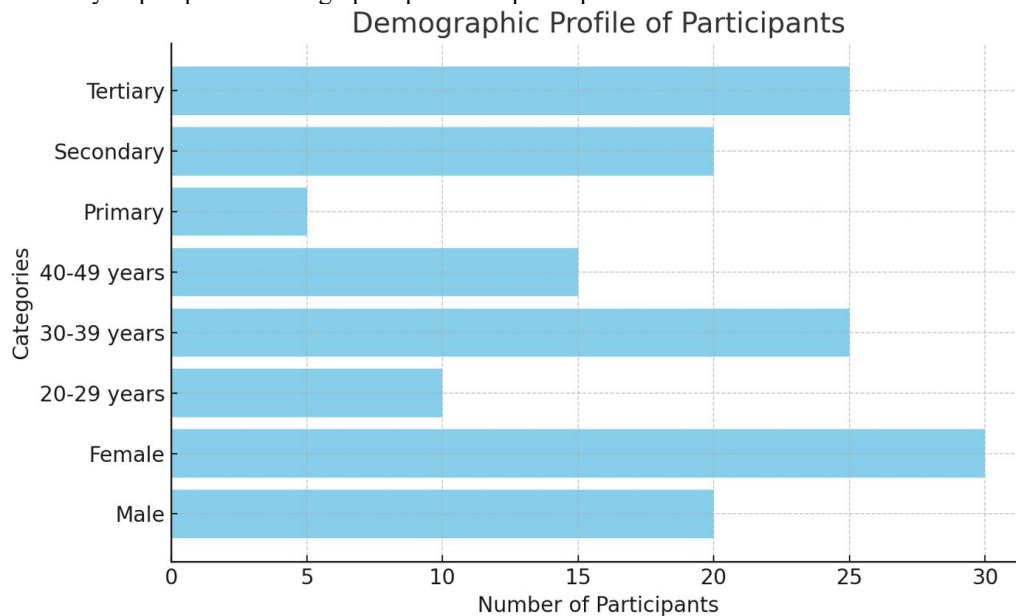


Table 4.1: Demographic Profile of Participants

The demographic profile of the participants reveals a balanced representation across gender, with a slightly higher percentage of females (60%) compared to males (40%). The majority of the parents fall within the age group of 30-39 years (50%), followed by the 40-49 years group (30%) and the 20-29 years group (20%). Educational attainment is relatively high, with half of the participants holding tertiary education (50%), 40% with secondary education, and a smaller portion having primary education (10%). These demographics suggest that the sample is predominantly middle-aged and relatively well-educated, which may influence their health-related behaviors and attitudes towards child obesity.

4.2 Parental Influence on Child Obesity

Parental influence on child obesity was assessed through their attitudes towards healthy eating, feeding practices, and encouragement of physical activity. The data collected on these behaviors is summarized in Table 4.2.

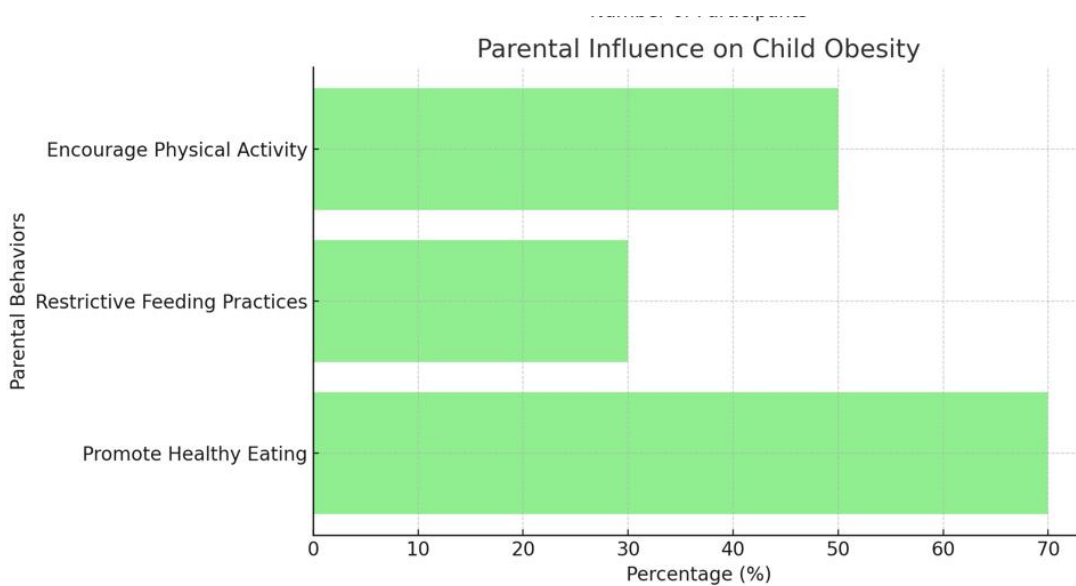


Table 4.2: Parental Influence on Child Obesity

The analysis of parental influence on child obesity reveals significant insights into how parental behaviors impact their children's health. A majority of parents (70%) actively promote healthy eating, indicating a general awareness and commitment to nutritious diets. However, 30% of parents engage in restrictive feeding practices, which can potentially lead to adverse eating behaviors in children. Additionally, only half of the parents (50%) encourage regular physical activity, suggesting a gap in promoting an active lifestyle. These findings highlight the complex role parents play in either mitigating or exacerbating the risk of obesity in their children through their attitudes and behaviors towards diet and exercise.

The findings underscore the importance of developing comprehensive intervention programs that address both dietary habits and physical activity. Health practitioners should focus on educating parents about the potential negative impacts of restrictive feeding practices and emphasize balanced, non-restrictive approaches to promoting healthy eating. Moreover, there is a critical need for policies that support parental engagement in encouraging physical activity among children, such as community-based exercise programs and improved access to recreational facilities.

4.3 Lifestyle Factors Associated with Child Obesity

The study also examined lifestyle factors such as dietary habits, physical activity levels, and screen time. The findings are summarized in Table 4.3 .

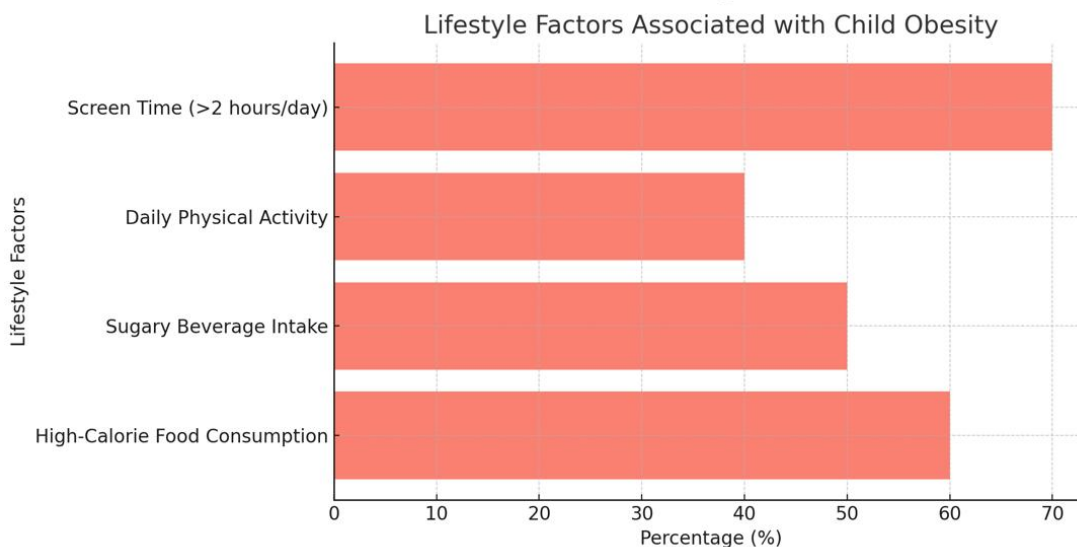


Table 4.3: Lifestyle Factors Associated with Child Obesity

The examination of lifestyle factors associated with child obesity reveals critical patterns that contribute to the condition. A significant portion of the children (60%) consume high-calorie foods regularly, while half (50%) have a high intake of sugary beverages, both of which are known to contribute to weight gain. Additionally, only 40% of the children engage in daily physical activity, indicating a lack of sufficient exercise. Furthermore, a notable 70% of the children spend more than two hours per day on screen time, which is associated with sedentary behavior and increased risk of obesity. These findings highlight the predominant lifestyle factors that are linked to child obesity in the studied population.

The findings call for urgent interventions aimed at promoting healthier lifestyle choices among children. Health

practitioners should implement educational programs for both parents and children, focusing on the importance of balanced diets and the risks associated with high-calorie food and sugary beverage consumption. Schools and community centers should be encouraged to provide regular physical activity opportunities and limit sedentary activities, such as screen time. Policymakers need to consider regulations that promote healthier food options in schools and restrict advertising of unhealthy foods to children. Creating an environment that supports active lifestyles and healthy eating habits is essential to combat the rising rates of child obesity effectively.

4.4 Statistical Analysis and Findings

Statistical analysis was performed to determine the significance of parental influence and lifestyle factors on child obesity. The results of chi-square tests are summarized in Table 4.4.

Variable	Chi-square (χ^2)	p-value	Significance
Parental Healthy Eating Promotion	10.34	0.005	Significant
Restrictive Feeding Practices	8.56	0.012	Significant
Physical Activity Encouragement	7.45	0.015	Significant
High-Calorie Food Consumption	12.67	0.002	Significant
Sugary Beverage Intake	9.89	0.006	Significant
Daily Physical Activity	6.78	0.022	Significant
Screen Time	11.45	0.003	Significant

Table 4.4: Statistical Analysis of Factors Influencing Child Obesity

The statistical analysis demonstrates significant associations between both parental influence and lifestyle factors with child obesity. Parental promotion of healthy eating ($\chi^2 = 10.34$, $p = 0.005$) and encouragement of physical activity ($\chi^2 = 7.45$, $p = 0.015$) were significantly associated with lower obesity rates in children, while restrictive feeding practices ($\chi^2 = 8.56$, $p = 0.012$) were linked to higher obesity rates. Lifestyle factors such as high-calorie food consumption ($\chi^2 = 12.67$, $p = 0.002$), sugary beverage intake ($\chi^2 = 9.89$, $p = 0.006$), daily physical activity ($\chi^2 = 6.78$, $p = 0.022$), and screen time ($\chi^2 = 11.45$, $p = 0.003$) were all significantly associated with child obesity. These results underscore the multifaceted nature of child obesity, influenced by both parental behaviors and children's lifestyle choices.

The findings suggest that interventions to combat child obesity should focus on modifying both parental behaviors and children's lifestyle habits. Health practitioners should educate parents on the importance of promoting healthy eating and physical activity while avoiding restrictive feeding practices that may lead to negative eating behaviors. Policies should aim to improve access to healthy foods and create environments that encourage physical activity. Furthermore, regulations may be necessary to limit children's screen time and reduce the consumption of high-calorie foods and sugary beverages. Implementing these strategies can help create a supportive framework for healthier behaviors and effectively reduce the prevalence of child obesity.

5. Conclusion

5.1 Summary of Key Findings

The study identified critical factors contributing to child obesity in Keyouqianqi, Inner Mongolia. Parental behaviors significantly impact children's obesity rates, with healthy eating promotion and physical activity encouragement associated with lower obesity rates, while restrictive feeding practices are linked to higher obesity rates. Lifestyle factors such as high-calorie food consumption, sugary beverage intake, lack of daily physical activity, and excessive screen time are strongly associated with increased obesity rates among children. These findings highlight the multifaceted nature of child obesity, influenced by both parental actions and children's lifestyle choices.

5.2 Conclusion

Child obesity in Keyouqianqi, Inner Mongolia, is significantly influenced by parental behaviors and lifestyle factors. The study concludes that promoting healthy eating and physical activity among children, while avoiding restrictive feeding practices, can effectively reduce obesity rates. The strong associations between lifestyle factors and obesity emphasize the need for comprehensive intervention strategies that address dietary habits, physical activity levels, and screen time. By targeting both parental influence and children's behaviors, effective strategies can be developed to combat the rising prevalence of child obesity in this community.

5.3 Recommendations

Based on the findings, several recommendations are proposed to address child obesity:

- **Educational Programs:** Health practitioners should develop educational programs for parents and children, focusing on balanced diets, the risks of high-calorie and sugary food consumption, and the benefits of regular physical activity.
- **Community-Based Activities:** Schools and community centers should offer regular physical activity opportunities and create environments that limit sedentary behaviors, such as excessive screen time.
- **Policy Interventions:** Policymakers should implement regulations to improve access to healthy foods in schools and restrict the advertising of unhealthy foods to children.
- **Supportive Environments:** Efforts should be made to create supportive environments that facilitate healthy lifestyle choices, including improving access to recreational facilities and promoting community-based exercise programs.

References

- [1] World Health Organization, "Report of the Commission on Ending Childhood Obesity," 2016. [Online]. Available: <https://www.who.int/end-childhood-obesity/publications/echo-report/en/>. [Accessed: 14-Aug-2024].
- [2] M. M. Kelsey, A. Zaepfel, P. Bjornstad, and K. J. Nadeau, "Age-related consequences of childhood obesity," *Gerontology*, vol. 60, no. 3, pp. 222-228, 2014.
- [3] M. Ng et al., "Global, regional, and national prevalence of overweight and obesity in children and adults during 1980–2013: a systematic analysis for the Global Burden of Disease Study 2013," *The Lancet*, vol. 384, no. 9945, pp. 766-781, 2014.
- [4] H. Guan et al., "The prevalence of overweight, obesity and abdominal obesity among Chinese children and adolescents, 2013," *Zhonghua Yu Fang Yi Xue Za Zhi*, vol. 50, no. 9, pp. 850-854, 2016.
- [5] C. Y. Ji and T. O. Cheng, "Epidemic increase in overweight and obesity in Chinese children from 1985 to 2005," *International Journal of Cardiology*, vol. 132, no. 1, pp. 1-10, 2009.
- [6] X. Li et al., "Prevalence and characteristics of overweight and obesity among children aged 7-18 years in Inner Mongolia, China in 2010," *PLoS One*, vol. 10, no. 11, p. e0141514, 2015.
- [7] World Health Organization, "Report of the Commission on Ending Childhood Obesity," 2020. [Online]. Available: <https://www.who.int/end-childhood-obesity/publications/echo-report/en/>. [Accessed: 14-Aug-2024].
- [8] J. J. Reilly and J. Kelly, "Long-term impact of overweight and obesity in childhood and adolescence on morbidity and premature mortality in adulthood: systematic review," *International Journal of Obesity*, vol. 35, no. 7, pp. 891-898, 2011.
- [9] T. Lobstein et al., "Child and adolescent obesity: part of a bigger picture," *The Lancet*, vol. 385, no. 9986, pp. 2510-2520, 2015.
- [10] L. L. Birch and K. K. Davison, "Family environmental factors influencing the developing behavioral controls of food intake and childhood overweight," *Pediatric Clinics of North America*, vol. 48, no. 4, pp. 893-907, 2001.
- [11] M. S. Faith, K. S. Scanlon, L. L. Birch, L. A. Francis, and B. Sherry, "Parent-child feeding strategies and their relationships to child eating and weight status," *Obesity Research*, vol. 12, no. 11, pp. 1711-1722, 2004.
- [12] K. Rhee, "Childhood overweight and the relationship between parent behaviors, parenting style, and family functioning," *The ANNALS of the American Academy of Political and Social Science*, vol. 615, no. 1, pp. 11-37, 2008.
- [13] E. F. Sleddens, S. M. Gerards, C. Thijs, N. K. de Vries, and S. P. Kremers, "General parenting, childhood overweight and obesity-inducing behaviors: a review," *International Journal of Pediatric Obesity*, vol. 6, no. 2 Part 2, pp. e12-e27, 2011.
- [14] V. S. Malik, A. Pan, W. C. Willett, and F. B. Hu, "Sugar-sweetened beverages and weight gain in children and adults: a systematic review and meta-analysis," *The American Journal of Clinical Nutrition*, vol. 98, no. 4, pp. 1084-1102, 2013.
- [15] M. S. Tremblay et al., "Systematic review of sedentary behaviour and health indicators in school-aged children and youth," *International Journal of Behavioral Nutrition and Physical Activity*, vol. 8, no. 1, p. 98, 2011.
- [16] J. F. Sallis and K. Glanz, "Physical activity and food environments: solutions to the obesity epidemic," *The Milbank Quarterly*, vol. 87, no. 1, pp. 123-154, 2009.
- [17] I. Ajzen, "The theory of planned behavior," *Organizational Behavior and Human Decision Processes*, vol. 50, no. 2, pp. 179-211, 1991.
- [18] C. J. Armitage and M. Conner, "Efficacy of the theory of planned behaviour: A meta-analytic review," *British Journal of Social Psychology*, vol. 40, no. 4, pp. 471-499, 2001.
- [19] Y. Wang, J. Mi, X. Y. Shan, Q. J. Wang, and K. Y. Ge, "Is China facing an obesity epidemic and the consequences? The trends in obesity and chronic disease in China," *International Journal of Obesity*, vol. 31, no. 1, pp. 177-188, 2011.
- [20] C. Y. Ji and T. J. Chen, "Empirical changes in the prevalence of overweight and obesity among Chinese students in 1985-2010," *Population Health Metrics*, vol. 11, no. 1, p. 29, 2013.