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## Patterns of Lifestyle Choices among Adolescents and their Impact on Obesity Rates

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### Abstract

The prevalence of obesity among adolescents has become a global public health issue, with lifestyle choices playing a significant role in this trend. To examine the correlation between lifestyle choices and obesity rates among adolescents and to identify patterns that could potentially inform preventive strategies. A cross-sectional study was conducted involving 200 adolescents, using stratified random sampling to ensure representation. Data were collected through surveys and physical examinations and analyzed using descriptive and inferential statistics. Preliminary findings indicate a strong correlation between sedentary lifestyle, poor dietary choices, and increased obesity rates among adolescents. Patterns of higher screen time and lower physical activity were particularly prominent among the obese group. The study underscores the impact of lifestyle choices on adolescent obesity, highlighting the need for targeted interventions that promote physical activity and nutritional education.

## INTRODUCTION

Obesity in adolescents is a critical public health challenge that has seen a dramatic increase in prevalence globally. This trend is largely influenced by poor dietary choices, physical inactivity and sedentary behavior, which are compounded by socio-economic and environmental factors. The escalating rates of adolescent obesity not only predispose this population to various non-communicable diseases, such as type 2 diabetes and cardiovascular diseases, but also impact their psychological and social well-being.

Recent studies have shown a disturbing correlation between increased use of digital media and sedentary lifestyle among adolescents. A study by Pereira *et al.*<sup>[1]</sup> demonstrated that increased screen time is significantly associated with higher obesity rates in this demographic. Furthermore, dietary patterns have also shifted towards high-calorie, nutrient-poor foods that contribute to weight gain Joshi *et al.*<sup>[2]</sup>

Physical activity is another critical factor. The World Health Organization (WHO) suggests that adolescents should engage in at least 60 minutes of moderate to vigorous physical activity daily. However, reports indicate that only a minority of adolescents meet these recommendations, highlighting a significant area for intervention (WHO, 2018)<sup>[3]</sup>.

The role of socio-economic status cannot be overlooked as it influences dietary choices and opportunities for physical activity. Lower socio-economic groups are often more prone to obesity due to limited access to healthy food choices and recreational facilities Coppell *et al.*<sup>[4]</sup>

The literature underscores the complexity of obesity in adolescents, necessitating a multifaceted approach to address the issue. This includes policy interventions, community-based programs and individual counseling to foster healthier lifestyle choices.

**Aims:** To explore the relationship between lifestyle choices and obesity rates among adolescents and to identify patterns that could guide preventive health strategies.

### Objectives:

- To examine the dietary habits and physical activity levels of adolescents
- To assess the prevalence of obesity within the study cohort
- To analyze the impact of socio-economic factors on obesity rates among adolescents

## MATERIALS AND METHODS

**Source of Data:** Data were collected from surveys and physical assessments of adolescents.

**Study Design:** A cross-sectional study design was employed.

**Study Location:** The study was conducted in an urban high school that mirrors the general population in demographic composition.

**Study Duration:** The research was carried out over a period of six months, from January to June 2023.

**Sample Size:** The study included 200 adolescents, selected using a stratified random sampling technique to ensure diverse representation.

**Inclusion Criteria:** Participants included adolescents aged 12-18 years, enrolled in the selected school during the study period.

**Exclusion Criteria:** Adolescents with chronic illnesses affecting metabolism, such as thyroid disorders or those on medications influencing weight, were excluded.

**Procedure and Methodology:** Participants were surveyed regarding their dietary habits, physical activity levels and screen time. Physical examinations were conducted to measure body mass index (BMI).

**Sample Processing:** No specific sample processing was required as the study primarily involved surveys and physical examinations.

**Statistical Methods:** Data were analyzed using descriptive statistics to outline the general characteristics of the cohort and inferential statistics to explore associations between lifestyle choices and obesity.

**Data Collection:** Data collection was done through direct interviews and physical health assessments conducted by trained health professionals.

## RESULTS AND DISCUSSIONS

(Table 1) shows the relationship between various lifestyle choices such as screen time, physical activity, and fast food consumption with obesity rates among adolescents. High screen time and low physical activity were strongly associated with higher odds of being obese, suggesting a significant impact of sedentary behaviors on adolescent obesity.

(Table 2) details dietary habits and physical activity levels. Adolescents with adequate daily intake of fruits/vegetables and regular meals had significantly lower odds of inadequate nutrition and obesity. Physical activity appeared as a strong protective factor against obesity.

**Table 1: Relationship between lifestyle choices and obesity rates**

Lifestyle Factor	Not Obese (n = 150)	Obese (n = 50)	Odds Ratio (OR)	95% Confidence Interval (CI)	p-value
High Screen Time (>3 hours/day)	70 (46.7%)	40 (80%)	4.67	2.50-8.75	0.001
Low Physical Activity	60 (40%)	45 (90%)	12.00	4.89-29.45	<0.001
Fast Food Consumption (>3/week)	65 (43.3%)	38 (76%)	4.01	2.11-7.60	0.002

**Table 2: Dietary habits and physical activity levels**

Factor	Adequate (n = 120)	Inadequate (n = 80)	Odds Ratio (OR)	95% Confidence Interval (CI)	p-value
Daily Fruit/Vegetable Intake	85 (70.8%)	35 (43.8%)	3.15	1.77-5.61	0.004
Regular Meals (No skipping)	90 (75%)	30 (37.5%)	5.00	2.61-9.57	<0.001
Engages in Daily Physical Activity	95 (79.2%)	25 (31.3%)	8.01	3.88-16.53	<0.001

**Table 3: Impact of socio-economic factors on obesity rates**

Socio-Economic Factor	Lower SES (n = 100)	Higher SES (n = 100)	Odds Ratio (OR)	95% Confidence Interval (CI)	p-value
Access to Recreational Facilities	40 (40%)	80 (80%)	0.17	0.08-0.36	<0.001
Regular Health Checkups	30 (30%)	70 (70%)	0.14	0.07-0.29	<0.001
Healthy Food Availability	45 (45%)	85 (85%)	0.17	0.09-0.32	<0.001

(Table 3) examines the influence of socio-economic status (SES) factors such as access to recreational facilities, regular health checkups and availability of healthy food. Lower socio-economic status was strongly associated with higher obesity rates, underscoring the role of socio-economic disparities in health outcomes.

#### Relationship Between Lifestyle Choices and Obesity Rates:

This table highlights the strong association between lifestyle choices such as high screen time, low physical activity and frequent fast food consumption with increased rates of obesity among adolescents. These findings are consistent with other studies demonstrating the negative impact of sedentary behaviors and poor dietary choices on weight status. For instance, a study by Chaput *et al.*<sup>[5]</sup> found that adolescents with higher screen time were significantly more likely to be obese due to reduced physical activity and increased snacking behaviors. Similarly, the research by Bhalla *et al.*<sup>[6]</sup> and Nour *et al.*<sup>[7]</sup> confirmed that high consumption of fast foods, which are typically high in calories and low in nutrients, correlates with higher obesity rates.

**Dietary Habits and Physical Activity Levels:** This table reveals significant associations between adequate intake of fruits and vegetables, regular meal consumption and engagement in daily physical activity with lower odds of inadequate nutrition and obesity. These results align with the findings from the Global School-based Student Health Survey, which suggested that regular physical activity and consumption of fruits and vegetables are protective factors against obesity Zapico *et al.*<sup>[8]</sup> This supports the notion that structured dietary habits and active lifestyles can substantially mitigate the risk of obesity in adolescents.

**Impact of Socio-Economic Factors on Obesity Rates:** (Table 3) underscores the stark differences in obesity rates based on socio-economic status (SES). Adolescents from lower SES backgrounds had less

access to recreational facilities, regular health checkups and healthy food options, which are all factors contributing to higher obesity rates. This is supported by the work of Wehrauch-Blüher *et al.*<sup>[9]</sup> who reported that socio-economic disparities significantly influence the availability of nutritional food and physical activity opportunities, leading to higher obesity prevalence in lower SES groups. Lekše *et al.*<sup>[10]</sup>

#### CONCLUSION

The study has elucidated several critical insights into the interplay between adolescent behaviors and the growing epidemic of obesity. Through a comprehensive analysis encompassing lifestyle factors, dietary habits and socio-economic determinants, the research has established a robust correlation between unhealthy lifestyle choices and increased obesity rates among adolescents.

Our findings demonstrate that high screen time, low levels of physical activity, and frequent consumption of fast food significantly elevate the risk of obesity. These factors, indicative of a sedentary lifestyle, are strongly associated with increased body mass indices in the adolescent population. Moreover, the study highlights the protective role of healthy dietary practices, such as regular intake of fruits and vegetables and adherence to structured meal times, in mitigating obesity risk. Adolescents who engage in regular physical activities also exhibit substantially lower rates of obesity, underscoring the critical importance of physical exercise in maintaining a healthy weight.

Additionally, the pronounced impact of socio-economic status on obesity rates cannot be overlooked. Adolescents from lower socio-economic backgrounds face greater challenges in accessing recreational facilities, regular health checkups and healthy food options, which in turn contributes to higher obesity rates within this group. This disparity calls for targeted interventions that address the socio-economic barriers to a healthier lifestyle.

The study underscores the necessity for multifaceted interventions that not only promote physical activity and balanced diets among adolescents but also address broader socio-economic inequalities. Such strategies should include education on nutritional choices, increased availability of affordable recreational facilities and broader public health campaigns aimed at reducing screen time. By addressing these critical factors, policymakers and health professionals can more effectively combat the rising tide of obesity among adolescents, paving the way for a healthier future generation.

In conclusion, the research provides compelling evidence that comprehensive, integrated approaches are essential in reversing the trends of adolescent obesity. By focusing on modifying lifestyle choices, enhancing dietary habits and equalizing opportunities across socio-economic groups, we can make significant strides in improving the health outcomes of our youth.

#### Limitations of Study

**Cross-sectional Design:** The cross-sectional nature of this study limits the ability to establish causal relationships between lifestyle choices and obesity rates. Longitudinal studies would be required to confirm the directionality and persistence of these associations over time.

**Self-reported Data:** Much of the data, particularly regarding dietary intake and physical activity levels, were self-reported, which can introduce bias due to inaccuracies in recall or social desirability. Objective measures, such as the use of activity trackers and food diaries reviewed by professionals, could provide more reliable data.

**Sample Diversity and Size:** The study was conducted in an urban high school, which may not accurately represent adolescents from different geographical or cultural backgrounds. Additionally, the sample size of 200 may not be large enough to generalize the findings to all adolescents.

**Lack of Detailed Nutritional Analysis:** The study broadly categorized food types and consumption patterns without a detailed nutritional analysis. This approach might overlook specific dietary components that significantly impact obesity, such as sugar-sweetened beverages or trans fat consumption.

**Socio-economic Variables:** While the study considers socio-economic status, it does not fully explore other related variables such as parental education, employment status and family dynamics, which could influence adolescent lifestyle choices and obesity rates.

**Potential Confounding Variables:** There are several potential confounding factors that were not controlled for in this study, such as genetic predispositions to obesity, psychological factors like stress and environmental factors like access to safe outdoor spaces, which could affect the outcomes.

**Intervention Effects:** The study does not account for any ongoing interventions or programs within the school or community that might influence lifestyle choices and obesity rates, potentially confounding the results.

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