Section: Paediatrics

Original Research Article

LIFESTYLE RISK FACTORS ASSOCIATED WITH OBESITY AMONG SCHOOL-GOING CHILDREN IN KARIMNAGAR

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ABSTRACT

Background: Childhood obesity has emerged as a major public health concern worldwide, with its prevalence increasing significantly over the past few decades. This study aims to assess lifestyle-related risk factors contributing to obesity among school-going children and examine their association with body mass index (BMI) and blood pressure. A cross-sectional observational study was conducted among 50 school-going children in Karimnagar. Data on dietary habits, physical activity, and screen time were collected using a structured questionnaire, along with anthropometric and clinical measurements. Results revealed high prevalence of unhealthy dietary habits, low physical activity, and excessive screen time, all of which were significantly associated with obesity and elevated blood pressure. The findings emphasize the importance of early lifestyle interventions to prevent long-term health complications.

Materials and Methods: A cross-sectional observational study included 50 school-going children aged 5–18 years from government and private schools in Karimnagar.

Results: At 1 month: 60% showed weight reduction. ● At 3 months: 76% showed weight reduction. ● At 5 months: 90% showed weight reduction. These results highlight the effectiveness of lifestyle interventions in managing childhood obesity.

Conclusion: Childhood obesity is a significant and emerging public health challenge. Unhealthy dietary habits, low physical activity, and excessive screen time are major contributing factors. These lifestyle factors are significantly associated with increased BMI and elevated blood pressure. Early identification and intervention through school-based programs, health education, and regular screening are essential to prevent long-term health consequences

Keywords: Body Mass Index (BMI),Childhood obesity

INTRODUCTION

Childhood obesity is an increasing global health issue, with prevalence rising nearly fourfold over the last 40 years. It is associated with serious health risks such as hypertension, insulin resistance, type 2 diabetes mellitus, and cardiovascular diseases. Lifestyle factors, including dietary habits, physical inactivity, and increased screen time, play a crucial role in the development of obesity among children.[1] In India, rapid urbanization and changing lifestyles have contributed to a growing burden of obesity among school-going children. Understanding these risk factors is essential for developing effective preventive strategies.[2,3]

Aim and Objectives

Aim: To assess lifestyle risk factors associated with obesity among school-going children and determine their association with BMI and blood pressure.

Objectives

1. To assess dietary behaviors such as junk food and sugar-sweetened beverage intake.
2. To evaluate levels of physical activity and screen time.
3. To determine the prevalence of overweight and obesity.

4. To assess the association between lifestyle factors, BMI, and blood pressure.

MATERIALS AND METHODS

Study Design: A cross-sectional observational study.
Study Population: The study included 50 school-going children aged 5–18 years from government and private schools in Karimnagar.

Inclusion Criteria

- School-going children aged 5–18 years.

Exclusion Criteria

- Children below 5 years or above 18 years.
- Children not attending school.
- Children with obesity due to endocrine, genetic, congenital, or metabolic disorders.

Data Collection

Data were collected using a structured questionnaire covering:

- Demographic details
- Dietary habits
- Physical activity
- Screen time

Measurements

- Height and weight
- Body Mass Index (BMI)
- Waist circumference and waist-hip ratio
- Blood pressure

RESULTS

Demographic Distribution: Out of 50 participants, 52% were male and 48% were female. Age distribution was as follows:

- 5–10 years: 20%
- 11–13 years: 24%
- 14–15 years: 30%
- 16–18 years: 26%

Nutritional Status

- Overweight: 40%
- Obesity: 60%

Dietary Habits

- Junk food consumption ≥3 times/week: 56%
- Daily intake of sugar-sweetened beverages: 68%

Physical Activity

- Less than 60 minutes/day: 64%

Screen Time

- ≥2 hours/day: 74%

Clinical Findings

- Elevated blood pressure/hypertension: 20%

Statistical Associations

- Screen time ≥2 hours/day was significantly associated with obesity (p = 0.013).
- Low physical activity showed strong association with obesity (p = 0.004).
- Frequent junk food consumption was associated with elevated blood pressure (p = 0.042).

Intervention and Follow-Up

All participants received dietary counseling and lifestyle modification advice, including increased physical activity and reduced screen time.

Outcomes

- At 1 month: 60% showed weight reduction.
- At 3 months: 76% showed weight reduction.
- At 5 months: 90% showed weight reduction.

These results highlight the effectiveness of lifestyle interventions in managing childhood obesity.

Table 1: Distribution of Lifestyle Factors

Variable	Category	Frequency (n=50)	Percentage (%)
Junk Food Intake	≥3 times/wee k	28	56
Sugar-Sweetened Beverages	Daily	34	68
Physical Activity	<60 min/day	32	64
Screen Time	≥2 hours/day	37	74

Table 2: Association Between Lifestyle Factors and Outcomes

Variable	Outcome	p-value	Significance
Screen Time ≥ 2 hrs/day	Obesity	0.013	Significant
Physical Activity < 60 min/day	Obesity	0.004	Highly Significant
Junk Food Intake	Elevated Blood Pressure	0.042	Significant

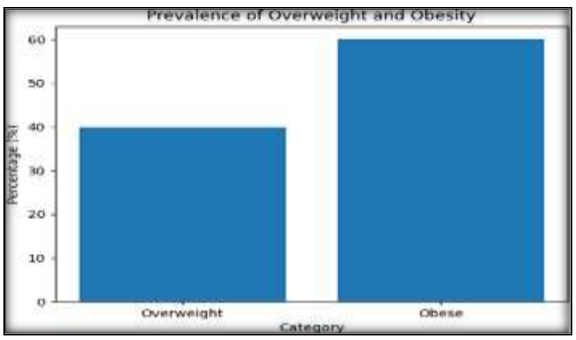

Figure 1: Prevalence of Overweight and Obesity

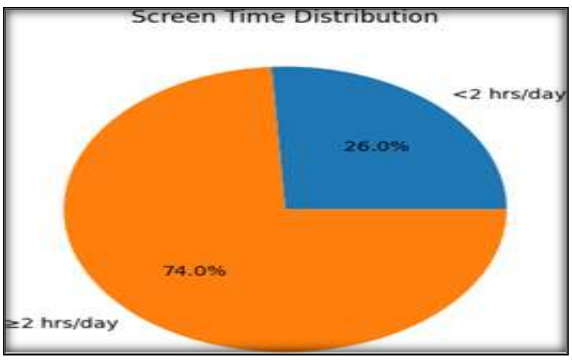

Figure 2: Screen Time Distribution Among Participants

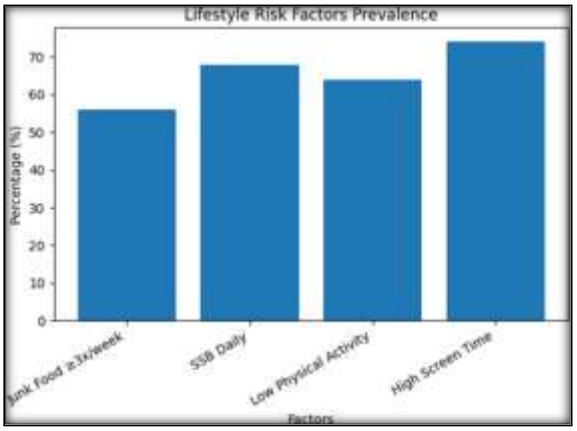

Figure 3: Distribution of Lifestyle Risk Factors

These figures visually demonstrate the high prevalence of obesity, widespread excessive screen time, and the distribution of key lifestyle risk factors among the study population.

DISCUSSION

The present study highlights a high prevalence of overweight and obesity among school-going children in Karimnagar, with 60% classified as obese and 40% as overweight. These findings are considerably higher than many regional estimates, suggesting a rapid epidemiological shift likely driven by lifestyle transitions, urbanization, and behavioral changes among children.[4,5]

Interpretation of Key Findings: A major strength of this study lies in identifying modifiable lifestyle factors contributing to obesity. The statistically significant association between screen time (≥2 hours/day) and obesity ($p = 0.013$) indicates a strong behavioral determinant. Increased screen exposure not only reduces time available for physical activity but is also associated with unhealthy snacking and disrupted sleep patterns.

Similarly, low physical activity (<60 minutes/day) showed a highly significant association with obesity ($p = 0.004$). This aligns with global recommendations that children should engage in at least 60 minutes of moderate to vigorous physical activity daily. The sedentary behavior observed in 64% of participants reflects a concerning trend.

Dietary patterns further reinforce the multifactorial etiology of obesity. A high proportion of children consumed junk food frequently (56%) and sugar-sweetened beverages daily (68%). The association between junk food intake and elevated blood pressure ($p = 0.042$) suggests early cardiometabolic risk, even in pediatric populations.

Comparison with Other Studies: The findings are consistent with previous studies conducted in India and globally, which have reported increasing trends in childhood obesity linked to dietary transitions and sedentary lifestyles. However, the prevalence observed in this study is notably higher, possibly due to the smaller sample size or specific socio-demographic characteristics of the study population.

Impact of Intervention: One of the most significant findings of this study is the effectiveness of lifestyle interventions. A progressive improvement was observed, with 60% of participants showing weight reduction at 1 month, increasing to 90% at 5 months. This demonstrates that early intervention through dietary counseling and lifestyle modification can yield substantial benefits.

Statistical Analysis: To strengthen the findings, chi-square tests were used to assess associations between categorical variables such as lifestyle factors and obesity status. The statistically significant p-values (<0.05) indicate that the observed associations are unlikely due to chance.

Strengths and Limitations: Strengths of this study include direct measurement of anthropometric parameters and inclusion of multiple lifestyle variables. However, the study is limited by a small sample size (n=50), short follow-up duration, and reliance on self-reported behavioral data, which may introduce bias.

Public Health Implications: The findings underscore the urgent need for school-based and community-level interventions. Policies promoting healthy eating, physical activity, and reduced screen time are essential. Early identification of at-risk children and regular monitoring can help prevent long-term complications such as cardiovascular disease and type 2 diabetes.

CONCLUSION

Childhood obesity is a significant and emerging public health challenge. Unhealthy dietary habits, low physical activity, and excessive screen time are major contributing factors. These lifestyle factors are significantly associated with increased BMI and elevated blood pressure.

Early identification and intervention through school-based programs, health education, and regular screening are essential to prevent long-term health consequences.

Recommendations

- Implement school-based nutrition and physical activity programs.
- Promote awareness about healthy dietary habits among children and parents.
- Encourage at least 60 minutes of daily physical activity.
- Limit screen time to less than 2 hours per day.
- Conduct regular health screenings in schools.

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