

Assessment of Xylophagia and Dietary Patterns Among School-Aged Children in Visakhapatnam

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Abstract: Xylophagia is a sub-type of Pica characterized by the consumption of non-nutritive substances like wood or paper. This cross-sectional study investigated the prevalence of paper-eating habits among 76 students in Visakhapatnam schools. The analysis revealed a prevalence rate of 23.7%, with a significantly higher occurrence among children who do not consume vegetables regularly. While males showed a higher tendency (30%) compared to females (16.7%), the strongest indicator of the habit was dietary deficiency. This report details the demographics, dietary habits, and statistical correlations observed in the study, providing a basis for nutritional intervention and prevention strategies.

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I. INTRODUCTION

Xylophagia, often categorized under Pica disorders, involves the compulsive consumption of wood or wood-derived products like paper. In pediatric populations, such behaviors are frequently linked to nutritional deficiencies (such as iron or zinc deficiency), psychological factors, or lack of dietary fiber.

In the context of school children in Visakhapatnam, dietary habits are increasingly influenced by the availability of street food (e.g., Pani Puri, Samosa) and packaged snacks (e.g., Lays). Understanding the relationship between these habits and the development of non-nutritive eating behaviors is crucial for school health programs. This study aims to analyze the prevalence of "paper eating" and correlate it with demographic factors and food consumption patterns.

II. DATA COLLECTION AND METHODOLOGY

Data was collected through structured surveys administered to 76 students across various schools in Visakhapatnam.

- **Demographics:** Information on age and gender was recorded.
- **Dietary Habits:** Students were surveyed on their consumption of junk food (samosa, pani puri, lays) and healthy food (fruits, vegetables, home-made snacks).
- **Behavioral Data:** The primary focus was the self-reported habit of "paper eating" (paper eating).

- **Analysis:** Statistical analysis was performed using Python (Pandas, SciPy) to determine correlations and prevalence rates.

III. DATA ANALYSIS AND VISUALIZATIONS

➤ Demographic Distribution

The study population was balanced across gender and age, with a mean age of approximately 11.5 years.

- **Age Distribution:** The majority of respondents were in the 10–13 age bracket.
- **Gender Distribution:** 52.6% were male and 47.4% were female.

➤ Prevalence of Paper Eating (Pica)

Out of 76 students, 18 reported practicing paper eating (23.7%). This high prevalence suggests a significant health concern that requires attention.

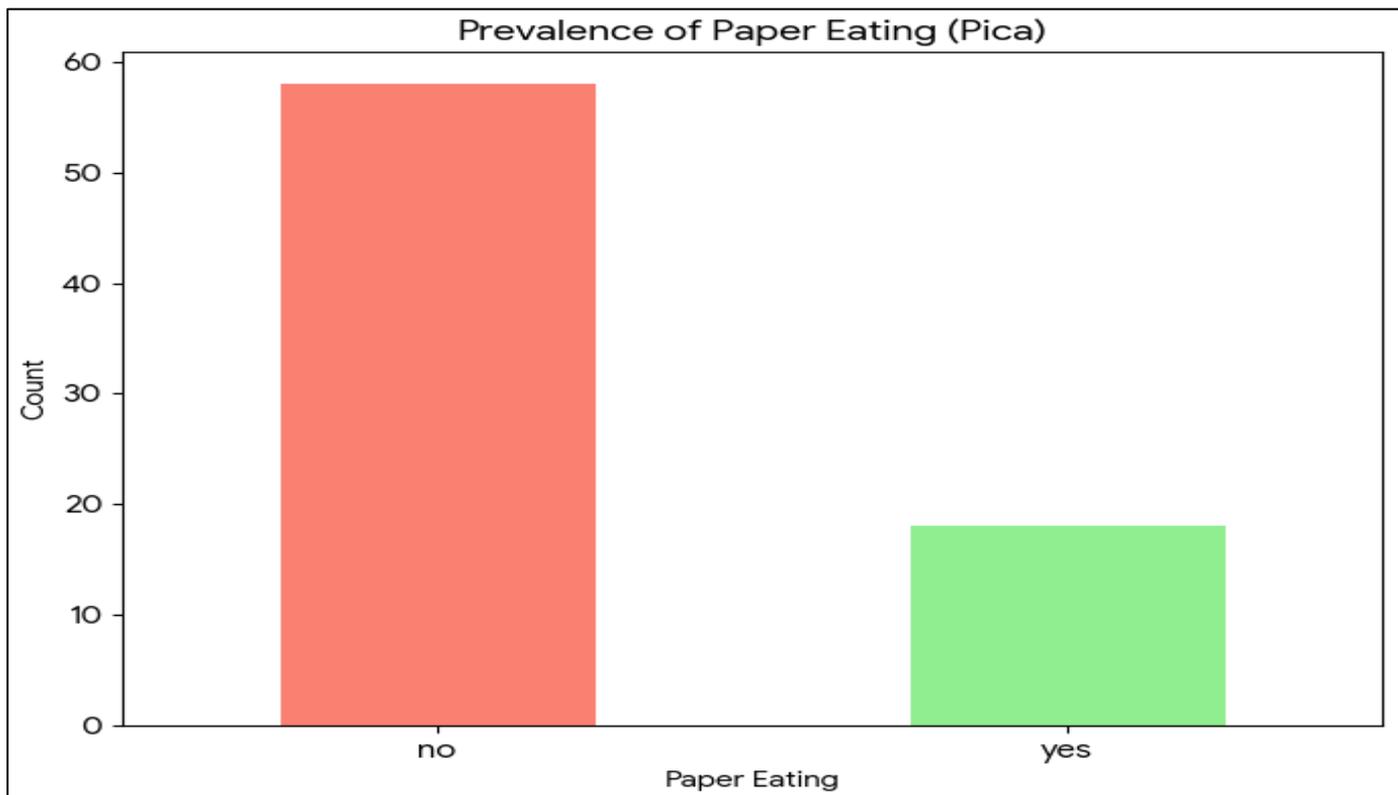


Fig 1 Prevalence of Paper Eating (Pica)

➤ *Dietary Habits Analysis*

Analysis of food consumption shows high intake of street food like Pani Puri (72.4%) and Lays (65.8%).

However, vegetable and fruit consumption was also relatively high among the general population, though a subset showed a lack of these in their diet.

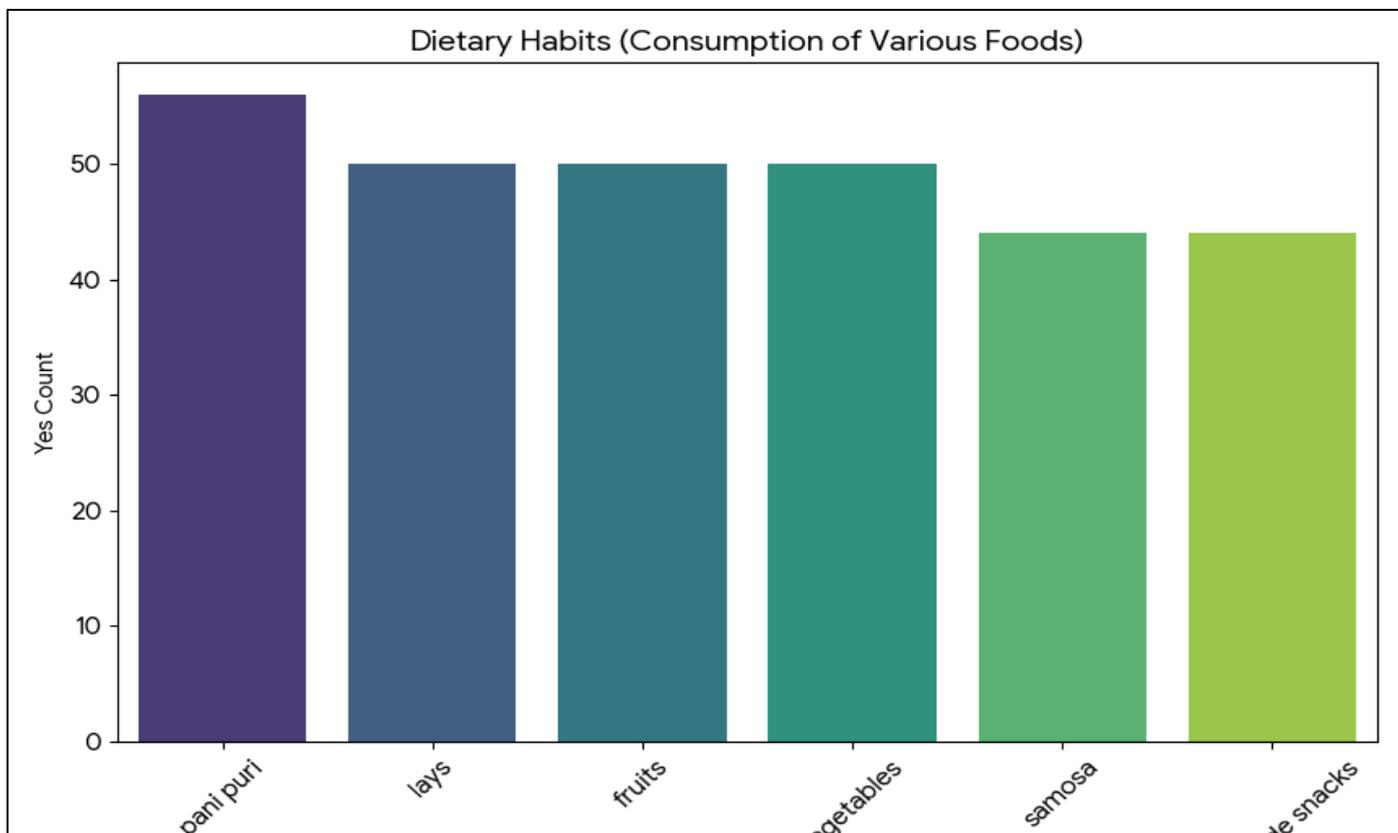


Fig 2 Dietary Habits Analysis

➤ *Statistical Correlations*

A correlation analysis revealed a strong negative correlation ($r = -0.64$) between vegetable consumption and paper eating.



Fig 3 Statistical Correlations

- Vegetable Intake vs. Pica: Among students who do *not* eat vegetables, 61.5% reported paper eating. In contrast, only 4% of students who consume vegetables reported the habit.
- Gender Influence: Males (30%) had a higher prevalence than females (16.7%), though the p-value (0.27) suggests this difference was not statistically significant in this sample size.

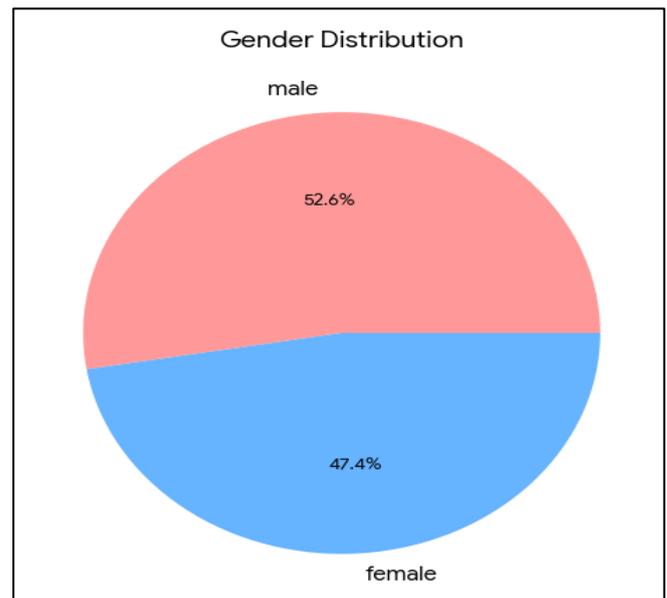


Fig 4 Gender Distribution

IV. STATISTICAL RESULTS SUMMARY

Table 1 Statistical Results Summary

Metric	Result
Total Sample Size	76 students
Overall Prevalence (Paper Eating)	23.7%
Male Prevalence	30.0%
Female Prevalence	16.7%
Veg. Consumers eating paper	4.0%
Non-Veg. Consumers eating paper	61.5%
Chi-Square p-value (Gender vs Pica)	0.2735

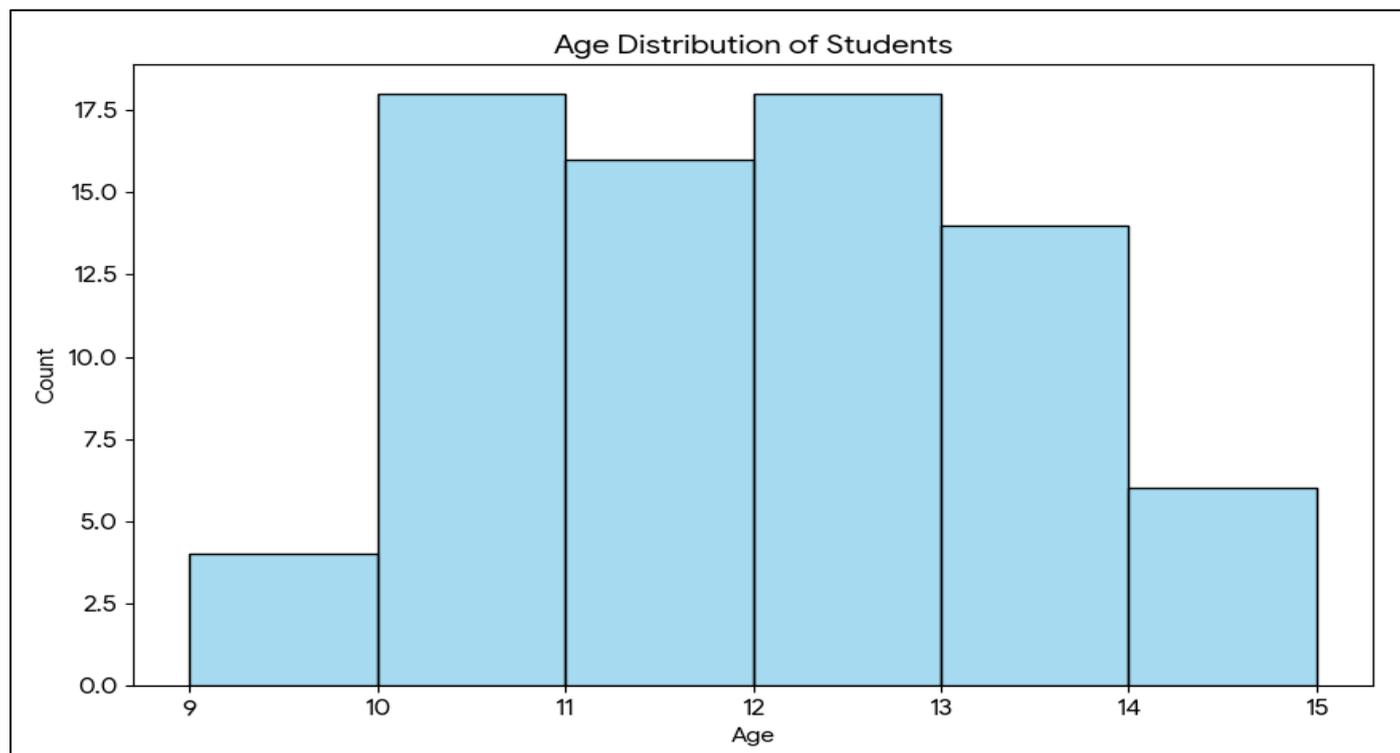


Fig 5 Age Distribution of Students

V. DISCUSSION AND RECOMMENDATIONS

The data suggests that nutritional inadequacy, specifically a lack of vegetable intake, is a major driver of Pica behaviors among children in the study area. The strong negative correlation between healthy diet components and paper eating indicates that these children might be seeking sensory stimulation or fulfilling a physiological craving caused by micronutrient deficiencies.

➤ *Preventive Strategies:*

- Nutritional Education: Schools should implement programs highlighting the importance of vegetables and home-made snacks.
- Screening: Children exhibiting Pica symptoms (paper eating) should be screened for iron-deficiency anemia and other mineral deficiencies.
- Parental Awareness: Encouraging parents to provide diverse, nutrient-rich meals to reduce reliance on low-nutrient street foods.

VI. CONCLUSION

The study concludes that paper eating is a prevalent issue among school children in Visakhapatnam, affecting nearly 1 in 4 students. The behavior is significantly more common in children who lack dietary diversity and vegetable intake. Addressing these nutritional gaps through school-based health interventions could be a key strategy in the prevention of Xylophagia and related Pica disorders.

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