



## Nutritional Status and Dietary Patterns in Early Childhood: A Cross-Sectional Study in Urban and Semi-Urban Communities

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### Abstract

Optimal child nutrition is a critical determinant of physical growth, cognitive development, and long-term health outcomes. This cross-sectional study assessed the nutritional status and dietary patterns among children aged 6 months to 5 years in selected urban and semi-urban communities. Data were collected through caregiver interviews, 24-hour dietary recalls, and anthropometric measurements. The study revealed a high prevalence of undernutrition (24.3%) and emerging trends of overnutrition (9.1%) in children, with significant variations based on socioeconomic status, maternal education, and community infrastructure. Dietary diversity was suboptimal in over half of the population. These findings underscore the dual burden of malnutrition in transitional economies and call for targeted interventions promoting balanced nutrition and caregiver education.

**Keywords:** child nutrition, undernutrition, overnutrition, dietary diversity, anthropometry, early childhood health

### Introduction

Child nutrition forms the foundation for a child's health, growth, and cognitive potential. According to the World Health Organization, the first five years of life are critical for establishing proper eating habits and preventing both undernutrition and obesity. Malnutrition—whether due to nutrient deficiency or excess—continues to affect millions of children worldwide, particularly in low- and middle-income countries undergoing nutritional transition. While global undernutrition rates have declined in recent

decades, disparities remain. Concurrently, childhood overweight and obesity have risen, even in populations traditionally affected by food insecurity. This dual burden of malnutrition reflects shifting dietary patterns, urbanization, and evolving socioeconomic landscapes. The aim of this study was to evaluate the nutritional status and dietary habits of children aged 6 months to 5 years in urban and semi-urban areas, and to explore associated sociodemographic factors.

## Material and Methods

### Study Design and Population

A cross-sectional study was conducted from January to April 2025 in two urban and two semi-urban communities. The sample included 600 children aged 6 months to 5 years, recruited from pediatric outpatient clinics, immunization centers, and local childcare institutions.

### Data Collection

Data collection involved three main components:

1. **Caregiver Interviews:** Structured questionnaires gathered information on household demographics, income, education level, and feeding practices.
2. **Dietary Assessment:** A 24-hour dietary recall was performed to assess food group intake, frequency, and diversity.
3. **Anthropometry:** Weight and height/length were measured using standardized techniques. Nutritional status was classified according to WHO growth standards (stunting, wasting, underweight, overweight).

### Inclusion Criteria

- Children aged 6 months to 59 months
- Parental or caregiver consent
- Resident in the study area for at least 6 months

### Exclusion Criteria

- Children with chronic illnesses or congenital anomalies affecting growth or feeding
- Incomplete data

### Statistical Analysis

Descriptive statistics summarized demographic and nutritional data. Chi-square and ANOVA tests were used to evaluate associations between variables. Multivariate logistic regression identified predictors of malnutrition. A p-value of  $<0.05$  was considered statistically significant.

## Results

The study enrolled 600 children, with 52% male and 48% female participants. The mean age was  $32.4 \pm 11.6$  months.

- **Undernutrition Prevalence:** Stunting was observed in 17.5% of children, underweight in 24.3%, and wasting in 11.2%.

- **Overnutrition:** 9.1% of children were classified as overweight or obese, particularly among urban and higher-income groups.
- **Dietary Patterns:** Only 47% of children consumed at least 4 of the 7 recommended food groups in the past 24 hours. Children in semi-urban areas consumed fewer animal proteins and dairy products.
- **Socioeconomic Factors:** Higher maternal education and household income were significantly associated with better dietary diversity and lower rates of undernutrition.
- **Feeding Practices:** Exclusive breastfeeding rates were 68% up to 6 months, with early introduction of sugary snacks observed in 39% of cases by 12 months.

## Discussion

This study highlights the persistent challenges of child malnutrition, compounded by the emergence of childhood overweight in rapidly urbanizing regions. Undernutrition remains prevalent in semi-urban and lower-income households, where food access and maternal knowledge may be limited. Conversely, overnutrition is emerging as a concern in urban areas, reflecting shifts toward processed and energy-dense diets.

Dietary diversity is a critical measure of nutritional adequacy and was found to be suboptimal in more than half of the study population. This aligns with previous research indicating that children in resource-limited settings often consume monotonous diets lacking essential nutrients.

The association between maternal education and child nutritional status underscores the importance of empowering caregivers with knowledge and resources. Interventions aimed at promoting breastfeeding, timely complementary feeding, and avoidance of nutrient-poor snacks are essential.

## Conclusion

The coexistence of undernutrition and overnutrition among children in this study reflects the complexity of nutritional challenges in transitional societies. Public health efforts should focus on enhancing caregiver education, promoting dietary diversity, and strengthening community-based nutrition programs. Continued surveillance and culturally adapted interventions are crucial for safeguarding child health during the formative years.

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