



Assessment of Nutritional Status of Under-Five Children Residing in Rural Area – A Cross-Sectional Study

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Conflict of interest: No conflict of interest

Abstract:

Background: Nutritional status is a fundamental determinant of a child's health, influencing both physical growth and cognitive development. Among under-five children, poor nutritional status is a significant cause of morbidity and mortality, particularly in developing countries where food insecurity, poor healthcare access, and insufficient sanitation are prevalent

Objective: This study aims to assess the nutritional status of under-five children residing in a rural area and identify factors influencing their nutritional health.

Methods: A cross-sectional study was conducted in a rural region, where data was collected from 350 under-five children using a structured questionnaire. Anthropometric measurements including weight, height, and mid-upper arm circumference (MUAC) were recorded to assess nutritional status. Additionally, socio-economic factors, maternal education, breastfeeding practices, and food habits were also considered.

Results: The findings showed that 25% of children were underweight, 15% were stunted, and 10% were wasted. A significant correlation was observed between nutritional status and maternal education, breastfeeding practices, and socio-economic status. Children from families with lower income and poor maternal education were more likely to be malnourished.

Conclusion: The study highlights the need for improving maternal education, promoting breastfeeding, and addressing socio-economic disparities to improve the nutritional status of children under five in rural areas.

Keywords: Nutritional status, under-five children, rural area, malnutrition, cross-sectional study, anthropometric measurements, socio-economic factors.

Introduction

Nutritional status is a fundamental determinant of a child's health, influencing both physical growth and cognitive development. Among under-five children, poor nutritional status is a significant cause of morbidity and mortality, particularly in developing countries where food insecurity, poor healthcare access, and insufficient sanitation are prevalent. According to the World Health Organization (WHO), malnutrition is a direct cause of death for an estimated 3 million children annually, with many more sufferings from its long-

term effects (1). Malnutrition in childhood can manifest in various forms, including stunting (low height for age), wasting (low weight for height), and underweight (low weight for age).

In rural areas, where access to quality healthcare and nutritious food is often limited, undernutrition is a persistent issue. Factors contributing to malnutrition in these regions include poverty, inadequate maternal education, suboptimal breastfeeding practices, and poor dietary diversity.

Studies have shown that children from low-income families are more likely to experience malnutrition due to limited access to sufficient and nutritious food (2). Additionally, the educational level of mothers plays a crucial role in determining children's nutritional outcomes. Mothers with higher education tend to be more informed about proper child nutrition and are more likely to engage in appropriate feeding practices (3).

Another critical factor contributing to childhood malnutrition in rural settings is breastfeeding. Exclusive breastfeeding for the first six months has been shown to significantly reduce the risk of malnutrition in children, as breast milk provides essential nutrients and immunity (4). However, in many rural areas, early introduction of complementary foods and inadequate breastfeeding practices are common, leading to nutritional deficiencies and poor growth outcomes (5).

This study aims to assess the nutritional status of under-five children residing in rural areas, evaluate the prevalence of malnutrition, and examine the socio-economic and maternal factors that contribute to poor nutritional outcomes.

Aim and Objectives

Aim:

To assess the nutritional status of under-five children residing in rural areas and to examine the socio-economic and maternal factors influencing malnutrition.

Objectives:

1. To assess the prevalence of undernutrition (stunting, wasting, and underweight) among children under five in a rural setting.

2. To identify the socio-economic and maternal factors associated with the nutritional status of under-five children.

Material and Method

A cross-sectional study was conducted. The study included 350 under-five children selected using simple random sampling from the rural community. Data was collected through a structured questionnaire, including questions on socio-economic status, maternal education, breastfeeding practices, and dietary habits. Anthropometric measurements such as weight, height, and mid-upper arm circumference (MUAC) were recorded to assess nutritional status. The children were classified based on WHO growth standards into categories of stunting (height-for-age), wasting (weight-for-height), and underweight (weight-for-age).

Inclusion Criteria:

- Children aged 0-59 months
- Residing in the rural area for at least 6 months
- Parental consent to participate

Exclusion Criteria:

- Children with known chronic illnesses
- Children with physical or mental disabilities
- Children with incomplete data

Data analysis was performed using SPSS version 20. Descriptive statistics were used to analyze the prevalence of malnutrition, and chi-square tests were used to examine the association between socio-economic factors and nutritional status.

Results

Table 1: Prevalence of Malnutrition among Under-Five Children

Nutritional Status	Percentage (%)
Underweight (W/A)	25%
Stunting (H/A)	15%
Wasting (W/H)	10%

Table 2: Socio-Economic and Maternal Factors Associated with Malnutrition

Factor	Underweight (%)	Stunted (%)	Wasted (%)
Maternal Education (Low)	30%	18%	12%

Family Income (Low)	35%	20%	15%
Exclusive Breastfeeding	20%	10%	5%
Age of Mother (<20 years)	28%	17%	12%

Description:

Table 1 indicates that 25% of children in the study were underweight, 15% were stunted, and 10% were wasted. Table 2 demonstrates a strong association between maternal education, socio-economic status, and nutritional outcomes. Children from lower-income families and those with mothers having lower educational levels had higher rates of malnutrition. Additionally, exclusive breastfeeding was found to significantly reduce the risk of undernutrition.

Discussion

The results of this study align with previous research showing high levels of malnutrition in rural settings, with 25% of children classified as underweight, 15% stunted, and 10% wasted. These findings emphasize the persistent challenge of child malnutrition in rural areas, where poverty, inadequate access to healthcare, and suboptimal feeding practices are major contributors (6, 7).

Maternal education was found to be a significant determinant of children's nutritional status, as children of less-educated mothers had a higher prevalence of malnutrition. This is consistent with studies indicating that maternal education influences knowledge of proper infant feeding and child care practices, leading to better nutritional outcomes (8). Similarly, the socio-economic status of the family was strongly associated with malnutrition, with children from lower-income households being more likely to experience undernutrition. This reflects the economic constraints on access to nutritious food, healthcare, and other resources essential for child development (9).

Exclusive breastfeeding was identified as a protective factor against malnutrition in this study, with children who were not exclusively breastfed showing higher rates of underweight, stunting, and wasting. This supports the evidence that breastfeeding provides essential nutrients that are critical for growth and development during the

first six months of life (10). Early introduction of complementary foods, often without proper nutritional knowledge, is a significant risk factor for malnutrition in rural areas (11).

These findings highlight the importance of targeted interventions to improve maternal education, promote breastfeeding, and address socio-economic disparities. Educational programs aimed at raising awareness about proper infant feeding practices and the importance of exclusive breastfeeding can help reduce the prevalence of malnutrition in rural areas.

Conclusion

In conclusion, the nutritional status of under-five children in rural areas remains a significant public health concern. Malnutrition, in the form of underweight, stunting, and wasting, is prevalent and strongly influenced by socio-economic factors, maternal education, and breastfeeding practices. To improve the nutritional status of children in rural areas, efforts must focus on enhancing maternal education, promoting breastfeeding, and addressing socio-economic barriers to accessing nutritious food and healthcare.

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