

## **Dietary Intake and Nutritional Inadequacy Leading to Malnutrition among Children Residing in Shelter Home, Rural Tamil Nadu, India**

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**Abstract :** Background: Childhood is a dynamic period for growth and development. Optimum nutrition during this period forms a strong foundation for growth, development, resistance to infections, long-term good health, cognition, educational achievements, and work productivity in a later phase of life. Underprivileged children living in a resource constraint settings like shelter homes are at high risk of malnutrition due to poor quality diet and nutritional inadequacy. In low-income countries, underprivileged children are vulnerable to being deprived of nutritious food, which stands as a major challenge in the health sector. The present aims to assess the dietary intake, nutritional status, and nutritional inadequacy and their association with malnutrition among children residing in shelter homes in rural Tamil Nadu. Methods: The study was a descriptive survey conducted among all the children aged between 8-18 years residing in two selected shelter homes (Anbu illam, a home for female children, and Amaidhi illam, a home for male children), rural Tirunelveli, Tamil Nadu, India. A total of 57 children were recruited, including 18 boys and 39 girls, for the study. Dietary intake was measured using seven days 24 hours recall. The average nutrient intake was considered for further analysis. Results: Of the 57 children, about 60% (n=35) were undernutrition. The mean daily energy intake was 1298 (SD 180) kcal for boys and 952 (SD155) kcal for girls. The total calorie intake was 55-60% below the estimated average requirement (EAR) for adolescent boys and girls in the age group 13-15 years and 16-18 years. Carbohydrates were the major source of energy (boys 53% and girls 51%), followed by fat (boys 31.5% and girls 34.5%) and protein (boys 14% and girls 12.9%). Dairy intake (<200ml/day) was less than the recommendation (500ml/day). Micro-nutrient-rich foods such as fruits, vegetables, and green leafy vegetables in the diet were <200g/day, which was far less than the recommended dietary guidelines of 400g- 600g/day for the age group of 7-18 years. Nearly 26% of girls reported experiencing menstrual problems. The majority (76.9%) of the children exhibited nutrient deficiency-related signs and symptoms. Conclusion: The total energy, minerals, and micro-nutrient intake were inadequate and below the Recommended Dietary Allowance for children and adolescents. The diet predominantly consists of refined cereals, rice, semolina, and vermicelli. Consumption of whole grains, milk, fruits, vegetables, and leafy vegetables was far below the recommended dietary guidelines. Dietary inadequacies among these children pose a serious concern for their overall health status and its consequences in the later phase of life.

**Keywords :** adolescents, children, dietary intake, malnutrition, nutritional inadequacy, shelter home

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