

Abstract

INTRODUCTION: Human nutrition is an area that has witnessed serious contributions by biological anthropologists. Biological anthropologists have been particularly interested in issues of nutritional adaptation and how humans adjust to variations in food intake as well as to the particular components of diet. An important area of contributions is the assessment of nutritional status of populations particularly in the developing countries. Nutritional status is now recognized to be a prime indicator of overall health of a population or an individual. The World Health Organization (WHO) believes that the ultimate objective of nutritional assessments is the improvement of human health and understanding health condition by implementing nutritional intervention programmes by means of overall improvement of health status in populations. Physical growth assessment best demonstrates health and nutritional status of children, several of the Millennium Development Goals have implications for nutrition, including the goal to halve by selected year, and the goal to reduce child mortality by two thirds. Low nutritional status during childhood has the potential to affect growth rates and increase the risk of mortality and morbidity of preschool children (aged 12 months to 60 months) as children require special nutritional needs because of their rapid growth and development. It has been estimated that 230 million under-5 years old children were stunted, 139 million underweight and 50 million wasted. In India, the legacy of child malnutrition among preschool children is a major public health problem and an impending obstacle to national development. The problem is more acute in the rural areas. However, there exists scarce data on the prevalence of under nutrition among Indian preschool children. Anthropometry is the single universally applicable, inexpensive and non-

invasive technique available to researchers for the assessment of the size and proportion of the human body. It is a very useful tool in the assessment of growth and nutrition of individuals. In India one of the key areas of concern is undernutrition among children aged 12 months to 60 months. The Government keeping this in mind had launched a number of welfare schemes such as the Integrated Child Development Scheme (ICDS). Given the role being played by the ICDS scheme, there appears to be a need to evaluate the nutritional status of children frequenting the ICDS centers to determine whether they continue to experience low nutritional status. Lower prevalence of stunting, underweight and wasting with the passage of time would imply that the supplementary nutrition being administered to the children was effective in reducing under nutrition. In such Cases, the need of the hour is conducting longitudinal studies. Most of the studies cited earlier were basically cross-sectional studies and therefore, could not gauge the changes in nutritional status among the individuals over time. The present study attempts to assess the prevalence of under nutrition among children in the age Group (12 months to 60 months) who are covered by the ICDS scheme, and their mothers. The study is designed to be a longitudinal study so as to document the changes in nutritional status over time, if any, among the children. The Case \Group is the children covered by the ICDS programme while the Control Group is those not covered by the programme but residing in the same area. A total of 22 ICDS centers were covered in course of the study. The hypothesis is that the nutritional supplementation being administered in the ICDS scheme to the children will act as the intervention necessary to ameliorate the prevalence of under nutrition and will reduce the dual nutritional burden of the children and their mothers. An effort was also made to understand the associations between difference socioeconomic, demographic and lifestyle factors with undernutrition.

Materials and Methods: The present study has been conducted in Matigara a administrative division in Siliguri subdivision of Darjeeling district in the Indian state of West Bengal. The effects of different demographic and socio-economic variables on the prevalence of under nutrition among the children are also analyzed.

Since the present study was a longitudinal study, the set of anthropometric measurements were recorded repeatedly over a period of one year at three month intervals. (Phases I- IV). The measurements taken were height, weight, MUAC, head circumference, triceps skinfold and sub-scapular skinfolds. The final longitudinal data comprised of 284 children (Case Group) and 201 children (Control Group) who were present in all the 4 Phases.

Data was collected three monthly intervals (30 days) from August 2013 to May 2014.

- Phase I : - First week of August 2013.
- Phase II : - First week of November 2013.
- Phase III : - First week of February 2014.
- Phase IV : - First week of May 2014.

Nutritional status was analysed using internationally accepted cut-offs and protocol such as stunting, wasting, thinness and CIAF. All the statistical analysis was done using SPSS Version 17.0. Multinomial logistic regression was used to assess the relation between the socioeconomic, demographic and lifestyle variable with undernutrition.

Results: The results show significant differences between boys and girls and also between the Case and Control Groups with regards to the different parameters. A high level of undernutrition was documents for both these groups. There appears to

be some effect of the intervention programmes of the ICDS when the Case and the Control Groups were compared. Mothers' nutritional status also has an effect of child nutritional status. the healthy physical environment (e.g. water and sanitation). A number of socioeconomic, demographic and lifestyle variables were associated with undernutrition.

Conclusion: All the children suffered from high levels of undernutrition. Steps should be taken to introduce better nutritional programmes to their poor nutritional status.