

**PREVALENCE OF MALNUTRITION AND INTERVENTION AMONG
SCHOOL GOING CHILDREN 7-9 YRS OF LOHARDAGA DISTRICT IN
JHARKHAND**

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Introduction

The future of the society depends on the quality of life of the children. The health of children and youth is of fundamental importance. Over 1/5th of our population comprises of children aged 5-14 years i.e. the group covering primary and secondary education. Once a child crosses the age of five, they are considered more or less safe from nutritional disorders. But little attention is paid to the quality of life. School age children are hardly thought of as "at risk" population but this period is a unique intervention point in the life cycle. Malnutrition is common among school children and is usually coupled with iron deficiency anemia. About 21.8% of the country's population comprises of school going children and there are still about 21 million children who are unable to attend school. According to National Family Health Survey (NFHS-3), 90.1% of the 6-10 years & 74.2% of 11-14 years old children attended primary school in 2005-06. Though the number of children of primary age group who were out of school has dropped by 33 million since 1999 still 72 million children worldwide were denied the right to education in 2007. Primary school years are busy ones and children need good nutrition to help them concentrate at school and to fuel their day-to-day activities (play and sport). Children of this age are also constantly growing. Middle childhood (7 - 12 years) has been called the latent time of growth as the rate of growth slows down and body changes occur gradually. Brain areas continue to develop during childhood. In India, 30 per cent of the school age children have moderate to severe malnutrition. Major nutrition problems and iron deficiency anemia. Dietary inadequacies have been considered as predominant etiological factors in the causation of all deficiency diseases. Growth and nutritional status of pre-school and school going children are profoundly influenced by the diet consumed by them. Therefore, the school children, in their existing nutritional conditions are in great need of health promotion, health appraisal and health restoration.

Malnutrition in India

The World Bank estimates that India is one of the highest ranking countries in the world for the number of children suffering from malnutrition. The prevalence of underweight children in India is among the highest in the world, and is nearly double that of Sub-Saharan Africa with dire consequences for mobility, mortality, productivity and economic growth.¹

India is one of the fastest growing countries in terms of population and economics, sitting at a population of 1.2 billion and growing at 1.5%-1.7% annually (from 2001-2007). India's Gross Domestic Product growth was 9.0% from 2007 to 2008; since Independence in 1947, its economic status has been classified as a low-income country with majority of the population at or below the poverty line.

Though most of the population is still living below the National Poverty Line, its economic growth indicates new opportunities and a movement towards increase in the prevalence of chronic diseases which is observed in at high rates in developed countries such as United States, Canada and Australia. The combination of people living in poverty and the recent economic growth of India has led to the co-emergence of two types of malnutrition: undernutrition and overnutrition.

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Malnutrition refers to the situation where there is an unbalanced diet in which some nutrients are in excess, lacking or wrong proportion. Simply put, we can categorise it to be under-nutrition and over-nutrition. Despite India's 50% increase in GDP since 1991, more than one third of the world's malnourished children live in India. Among these, half of them under 3 are underweight and a third of wealthiest children are over-nutriented.

Some of the major causes for malnutrition in India is gender inequality. Due to the low social status of Indian women, their diet often lacks in both quality and quantity. Women who suffer malnutrition are less likely to have healthy babies. In India, mothers generally lack proper knowledge in feeding children. Consequently, new born infants are unable to get adequate amount of nutrition from their mothers.

Nutritional trends of various demographic groups

Many factors, including region, religion, and caste affect the nutritional status of Indians. Living in rural areas also contribute to nutritional status.

Socio-economic status

In general, those who are poor are at risk for under-nutrition, while those who have high socio-economic status are relatively more likely to be over-nourished. Anaemia is negatively correlated with wealth.

Children of Muslim households and those belonging to scheduled castes or tribes also face higher rates of malnourishment. This phenomenon is most prevalent in the rural areas of India where more malnutrition exists on an absolute level. Whether children are of the appropriate weight and height is highly dependent on the socio-economic status of the population. Children of families with lower socio-economic standing are faced with sub-optimal growth. While children in similar communities have shown to share similar levels of nutrition, child nutrition is also differential from family to family depending on the mother's characteristic, household ethnicity and place of residence. It is expected that with improvements in socio-economic welfare, child nutrition will also improve.

Region

Under-nutrition is more prevalent in rural areas, again mainly due to low socio-economic status. Anaemia for both men and women is only slightly higher in rural areas than in urban areas. For example, in 2005, 40% of women in rural areas, and 36% of women in urban areas were found to have mild anaemia.

In urban areas, overweight status and obesity are over three times as high as rural areas.

In terms of geographical regions, Madhya Pradesh, Jharkhand, and Bihar have very high rates of under-nutrition. States with lowest percentage of under-nutrition include Mizoram, Sikkim, Manipur, Kerala, Punjab, and Goa, although the rate is still considerably higher than that of developed nations. Further, anaemia is found in over 70% of individuals in the states of Bihar,

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Chhattisgarh, Madhya Pradesh, Andhra Pradesh, Uttar Pradesh, Karnataka, Haryana, and Jharkhand. Less than 50% of individuals in Goa, Manipur, Mizoram, and Kerala have anaemia.

Punjab, Kerala, and Delhi also face the highest rate of overweight and obese individuals.

Religion

Studies show that individuals belonging to Hindu, Jain or Muslim backgrounds in India tend to be more malnourished than those from Sikh or Christian backgrounds.

The data challenges Prime Minister Manmohan Singh's optimism on the "improving" state of children's health in the country. "There has been 20 per cent decline in malnourishment in the last seven years. This is better than the rate of decline reported in National Family Health Survey-III," he had said in January this year.

he report says malnutrition is higher among children whose mothers are uneducated or have less than five years of education. Similarly, the percentage of underweight children in lowest wealth index is three times higher than higher wealth index.

The worst performing states with underweight children under five years of age are Madhya Pradesh (60 per cent), Jharkhand (56.5 per cent) and Bihar (55.9 per cent). Similarly anaemia prevalence among children (6-59 months) is more than 70 per cent in Bihar, MP, UP, Haryana, Chhattisgarh, Andhra Pradesh, Karnataka and Jharkhand.

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Review of literature

Bamji et al. (2004) defined malnutrition mechanistically, as a state where inadequate nutrients are not delivered to the cells to provide the substrate for optimal functioning. Further stated that malnutrition includes both under nutrition as well as over nutrition, in developing countries, under nutrition is the major health problem and marasmus and kwashiorkor are the two extreme clinical forms of protein-energy malnutrition, which require rehabilitation.

Bellisle (2004) stated that diet can affect cognitive ability and behavior in children. Nutrient composition and meal pattern can exert immediate or long-term, beneficial or adverse effects. Good regular dietary habits are the best way to ensure optimal mental and behavioral performance at all times. Children with poor nutritional status are exposed to alterations of mental and behavioral functions that can be corrected, to a certain extent by dietary measures.

Gopalan et al. (2004) reported that the diets of poor income groups were deficient in several nutrients namely energy protein, Vitamin A, Calcium, riboflavin & Iron. Dietary deficiency of these nutrients occur more frequently and to a greater degree among children, pregnant and lactating women whose requirements of nutrients are higher than others.

Gupta and Rohde (2004) concluded that the malnutrition among children occurs almost entirely during the first two years of life and is virtually irreversible after that. Food interventions at schools are unlikely to address infant feeding and young child malnutrition as they cater to older children, who in fact suffer from malnutrition since they are young. The solutions to the problem emerge from a clearer distinction between hunger and malnutrition and the knowledge that child malnutrition is directly associated with inappropriate feeding practices. This requires a shift in thinking, from food-based approaches towards feeding behavior change.

Hamer et al. (2004) concluded that the severe malnutrition was both under-diagnosed and wrongly diagnosed by nurses trained in the use of the IMCI(Integrated Management of Childhood Illness) nutrition algorithm in a clinic setting The Gambia. These guidelines for health workers and the training materials, particularly with respect to calculation of age, need further development to improve the detection of malnourished children.

Kremer and Vermeersch (2004) concluded that the directive ordered states to institute mid-day meals in government primary schools (referred to here after as public schools). Prior to 2001, only two states had universal public primary school midday meal provision. Over the subsequent three years, however, state governments across India introduced Mid-day meals. Two main sources of variation are used in assessing the impact of midday meals: the date on which states introduced mid day meals in primary schools, and the fact that (in accordance with the Supreme Court directive) they were introduced in public, but not private primary schools. Since the directive was addressed nation-wide, concerns regarding program placement bias are alleviated. Moreover, staggered implementation at the state level in public but not private schools allows us to treat all private schools as well as public schools in states not yet implementing the program, as a quasi-control group for public schools in states which introduced mid day meals.

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UNICEF (2004) reported that micronutrient nutrient deficiencies are damaging the health of one-third of the world's population and economic development of nearly every country in southern hemisphere. It concludes that current efforts to remedy micronutrient deficiencies in the world's poorer nations are inadequate and will remain so without new and more aggressive policies. The report summarizes results from nutritional studies undertaken in 80 countries and identifies four target nutrients crucial to health and development both in utero and in children: iron, vitamin A , iodine and folate.

Park (2004) expressed that the aim of nutrition education is to guide people to choose optimum and balanced diets, remove prejudices and promote good dietary habits. Nutritional education is a major intervention for the prevention of malnutrition, promotion of health and improving the quality of life. Malnutrition as weight for age below two standard deviation of the NCHS reference population.

Objectives

The study will conduct keeping in view the following objectives:-

1. To find out the prevalence rate of malnutrition in 7-9years old school going children.
2. To assess the dietary pattern and nutritional status of selected school going children.
3. To study the socio- economic condition of 7- 9years old school going children and their family.
4. To determine the impact of Nutrition education in preventing malnutrition.

Hypothesis

- The rate of malnutrition in 7-9 yrs old children is very high.
- The dietary intake and nutritional status of children are very poor.
- The socio- economic condition of their families are not good.

Limitations of the study

- The number of respondents in the study will be 200.

Research Design and Methodology

The present study entitled "Prevalence of Malnutrition and Intervention to combat the problem among school going children (7-9 years) of Lohardaga District (jharkhand.) one block is bhandra

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and second block is kairo." The methods and materials which were used are described in this chapter.

DEVELOPMENT OF SCHEDULE FOR SURVEY OF SCHOOL GOING CHILDREN AND THEIR FAMILY

A structured schedule will prepare for collecting the information about subjects. It included general profile, anthropometric survey, clinical survey, dietary survey and hygiene survey . The family survey schedule included general profile, nutritional information, hygiene and sanitation practices and dietary education survey.

1. Development of schedule for survey of school going children and their family and develop of knowledge test schedule for respondents

- i. Schedule for General Profile
- ii. Schedule for Anthropometric Measurement
- iii. Schedule for Clinical Assessment
- iv. Schedule for Dietary Information

2. Selection of sample

- i. Selection of District
- ii. Selection of schools
- iii. Selection of respondents

3. Collection of data

i. Pre intervention data collection from respondents

- a) General profile survey
- b) Anthropometric survey
- c) Clinical survey
- d) Dietary survey
- e) Personal hygiene survey
- f) Interesting television serial survey

ii. Collection of data from respondent's family

- a) General profile survey
- b) Nutritional information survey
- c) Hygiene and sanitation practice survey

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d) Dietary education survey

4. Data analysis and application of statistical tests

Data will be analysed with appropriate statistical analysis.

The present study will be conducted with 100 children and 100 mothers. The area selected for the study will be the two blocks of Jharkhand district one is Bhandara and another block is Kairao. Descriptive cross sectional survey will be done by combining both qualitative and quantitative methods. Anthropometric data will be collected from Nutrition surveillance. The study will conduct multivariable and single-variable logistic regression models to determine the correlation between all the factors.

Target Groups	Sample Size
School going children	100
Their mothers	100

The questionnaires and checklists will be used combination with observation. The relationship between the various factors will be determined by suitable software (SPSS).

Any changes can be made whether it is required according to progress of the research work.

Tentative Chapters

1. Introduction
2. Review of literature
3. Research methodology
4. Result and discussion
5. Summary and conclusion

Bibliography

References

- "World Bank Report". Source: The World Bank (2009). Retrieved 2009-03-13. *World Bank Report on Malnutrition in India*
- • "2015 Global Hunger Index Report" (PDF). International Food Policy Research Institute (IFPRI).
- • https://www.google.co.in/publicdata/explore?ds=d5bncppjof8f9_&met_y=sp_pop_grow&idim=country:IND:CHN:USA&hl=en&dl=en
- • "World Bank Report". Source: The World Bank 2009. Retrieved 2009-11-25. *India Country Overview 2009* [dead link]
- • "World Bank Report". Source: The World Bank 2009. Retrieved 2009-11-25. *India Country Overview 2009*
- • "Journal of the American Medical Association". Source: JAMA 2004. Retrieved 2009-11-26. *The global burden of chronic diseases*

Synopsis approved
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- • "The Indian exception". *The Economist*. 31 March 2011. Retrieved 13 February 2012.
- • "Putting the smallest first". *The Economist*. 23 September 2010. Retrieved 13 February 2012.
- • "Turning the tide of malnutrition" (PDF). World Health Organization. Retrieved 14 February 2012.
- • "A call for reform and action". The World Bank. Retrieved 14 February 2012.
- • "India in grip of obesity epidemic". *The Times of India*. 12 November 2010. Retrieved 14 February 2012.
- • Superpower? 230 million Indians go hungry daily, Subodh Varma, 15 Jan 2012, The Times of India,
- • "NFHS-3 Nutritional Status of Adults". Retrieved 2009-11-26.
- • Kanjilal, B; et al. (2010). "Nutritional Status of Children in India: Household Socio-Economic Condition as the Contextual Determinant". *Int J for Equity in Health* 9: 19. doi:10.1186/1475-9276-9-19.
- • Gulati, A., Ganesh-Kumar, A., Shreedhar, G., & Nandakumar, T. (2012). Agriculture and malnutrition in India. *Food And Nutrition Bulletin*, 33(1), 74-86
- • "HUNGaMA Survey Report" (PDF). Naandi foundation. Retrieved 1 February 2012.
- • Kanjilal, Barun; Mazumdar, Mukherjee, Rahman (January 2010). "Nutritional status of children in India: household socio-economic condition as the contextual determinant". *International Journal for Equity in Health* 9: 19–31. doi:10.1186/1475-9276-9-19. Cite uses deprecated parameter |coauthors= (help).
- • "NFHS-3 Nutritional Status of Children". Retrieved 2009-11-26.
- • "Nutrition and Anaemia" (PDF). Retrieved 2009-11-26.
- • "A campaign to end malnutrition in Bihar". www.ideasforindia.in. Retrieved 2015-10-09.
- • "Child Development Website". Source: Child Development programmes site (2009). Archived from the original on 6 December 2008. Retrieved 2009-03-14. Programs to address malnutrition in India
- • "National Rural Health Mission" (PDF). Source: National Rural Health Mission (2005–2012). Retrieved 2009-11-26.


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