

# Nutritional Problems and Intervention Strategies in India

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## COUNTRY PROFILE

India, officially the Republic of India is a country in South Asia. It is the seventh-largest country by geographical area. It is bounded by the Indian Ocean on the south, the Arabian Sea on the south-west, and the Bay of Bengal on the south-east, it shares land borders with Pakistan to the west; China, Nepal, and Bhutan to the north-east; and Burma and Bangladesh to the east. The major religions are Hinduism, Buddhism, Jainism, and Sikhism.

India has a total population of 1,198,003,000, a gross national income per capita US\$ 2,930, a life expectancy at birth M/F (years) 63/66.

The probability of dying under five (per 1000 live births) 66, total expenditure on health per capita US\$ 132, and a total expenditure on health as % of GDP is 4.2

## NUTRITIONAL PROBLEMS

The World Bank estimates that India is ranked 2nd in the world of the number of children suffering from malnutrition i.e. Underweight (43.5), Stunting (47.9), Wasting (20), and Overweight (1.9).

Under nutrition is found mostly in rural areas, 10 percent of villages and districts accounting for 27-28 percent of all under weight children.

Low birth weight: (28%), Vitamin A deficiency: (12.1%), Nutritional anemia (<5 years - 74.3% and pregnant women - 49.7%), Iodine deficiency disorder, Fluorosis, Obesity, and Cardio vascular diseases.

## MAJOR PROBLEMS OF PUBLIC HEALTH IMPORTANCE

The two major nutritional problems in India are:

- Under Nutrition (underweight-43.5, stunting-47.9, and wasting-20)
- Nutritional Anaemia (<5 years-74.3%, and pregnant women-49.7%)

## JUSTIFICATION

India is among the countries with highest prevalence of anaemia in the world. As India is a population billionaire, the country accounts for the largest number of anaemic persons in the world. The magnitude of reduction in the prevalence of anaemia during nineties in India is lower than that in neighbouring South and South East Asian countries.

It is estimated that about 20%-40% of maternal deaths in India are due to anaemia. India contributes to about 50% of global maternal deaths due to anaemia. In India, the prevalence of anaemia is high due to the following nutritional and health disorders:

- Low dietary intake, poor iron (less than 20 mg /day) and folic acid intake (less than 70 micrograms/day);

- Poor bio-availability of iron (3-4 percent only) in phytate fibre-rich Indian diet, and
- Chronic blood loss due to infection such as malaria and hookworm infestations

### Prevalence of Anaemia

Data from NNMB surveys and INP survey show that iron and folic acid intake in all the states of the country is very low. There has not been any increase in iron intake over the last three decades in any group.

The apparent diminution in iron intake in the NNMB surveys 2000-01 and beyond is due to the finding that only 50% of the iron is absorbable. Interstate differences in iron intake are of small magnitude. The low dietary intake of iron and folic acid coupled with poor bioavailability of iron is the major factor responsible for very high prevalence of anaemia in the country.

Data from NNMB, ICMR and DLHS surveys have shown that prevalence of anaemia is very high ranging between 80->90% in preschool children, pregnant and lactating women and adolescent girls.

Moderate and severe anaemia is seen even among educated families and the higher income group. NNMB survey in 2006 showed that 55% of the adult men also suffer from anaemia.

Anaemia is associated with increased susceptibility to infections, reduction in work capacity and poor concentration. Anaemia remains to be major cause of maternal mortality and low birth weight in India.

Under-nutrition, as a "soundless" emergency, haunts the lives of millions of Indian children. Several facts reveal the magnitude and severity of the nutritional crisis facing the country. Close to two million children below the age of five die in India every year.

Of these, over a million deaths can be attributed to under-nutrition and hunger.

Stunting affects close to 195 million of children less than five years of age in the developing world, of these, around 61 million - the largest number - lives in India.

Wasting affects around 71 million of children under five in the developing world, of these, 25 million are in India.

And an estimated 129 million children under five in the developing world are underweight, of these; close to 54 million are children in India. In 2005-06, 43 per cent of Indian children below five years of age were underweight and 48 per cent were stunted.

The high proportion of child under-nutrition, combined with the large population base, has made India the country with the largest number of stunted, wasted and underweight children in the world. According to a recent United Nations Children's Fund (UNICEF) estimate, India accounts for 31 per cent of the developing world's children who are stunted and 42 per cent of those who are underweight. UNICEF data show that about 47% of Indian children under 5 are underweight; the corresponding figure for sub-Saharan Africa is 24%.

## INTERVENTIONS

### ANAEMIA

A new approach to improve the micronutrient content of home-prepared complementary foods: The

burden of IDA can be reduced by taking a holistic approach that would include promotion of healthy weaning practices and the use of appropriate complementary foods, together with improving the nutritional value of such foods.

To improve the nutritional value of home-prepared complementary foods, "micronutrient Sprinkles" in a powder form should be developed as a home-fortification strategy for improving the nutritional quality of home-prepared complementary foods.

Promotion of regular consumption of foods rich in iron, provisions of iron and folate supplements in the form of tablets to the high risk groups, and identification and treatment of severely anaemic cases are effective interventions for anaemic patients.

## UNDER-NUTRITION

### Promotion of Optimal Feeding of Infants and Young Children

Indian mothers tend to breastfeed until about two years and do not add semi-solid complementary foods to children's diets, perpetuating the calorie and protein gap.

Multiple approaches exist to promote the initiation of breastfeeding and to prolong exclusive breastfeeding: health education, professional support, lay support, health sector, and media campaigns through health facilities and community programs.

### Disease Control and Prevention

Interventions to prevent or decrease malnutrition or infectious disease are expected to decrease child mortality, and interventions that accomplish both will have the greatest effect (Pelletier, Frongillo, and Habicht 1993).

Water, sanitation, and hygiene interventions decrease childhood malnutrition primarily by preventing diarrheal disease.

Hand-washing interventions can reduce the risk of diarrheal diseases by about 45 percent. Hand-washing interventions can be included in water and sanitation programs or can exist as a single intervention, and they are both effective and cost-effective (Borghi et al, 2002).

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