



NFI BULLETIN

Bulletin of the Nutrition Foundation of India

Volume 14 Number 3

July 1993

Child Care in India — Emerging Challenges

C. Gopalan

The quality of human resources of any country is largely determined by the quality of its child development service. The children of today are the generation of tomorrow.

To be sure, there has been improvement in the state of the health of India's children, as reflected by modest reductions in infant and child mortality rates, and declines in the incidence of 'severe' malnutrition in children, in recent years. However, the vast bulk of India's children continue to be in a sub-standard state of health and nutrition. These are the children who may 'survive' but who will grow into the stunted adults of tomorrow, with varying degrees of impairment of physical stamina and productivity.

The fact that, despite impressive investments, the country is still far from its goals in the area of child health/nutrition must point to either some basic flaws in our strategies or to serious shortcomings in programme implementation. Apparently while we have a multiplicity of overlapping uncoordinated programmes, these are not born out of a coherent overarching National Child Development Policy.

Four Phases of Child Growth

We may broadly recognise four phases of child growth:

- Intrauterine phase and early infancy (conception to six months after birth)
- Late infancy and early childhood (six months to five years)

- (Primary) school age (five to 12 years)
- Adolescence (12-18 years).

Orderly child development will demand critical inputs into each of the above phases of child growth. It is necessary to emphasise this because in the past, depending on the 'fashion of the moment', near-exclusive emphasis had been laid on one phase or the other, to the relative neglect of other phases, the adolescence phase having generally suffered near-total neglect. Even within a given phase, narrow vertical programmes with isolated targets were frequently pushed to the detriment of integrated child development.

A truly successful Child Development Policy has to be reflected in a significant, 'secular' trend in the growth of our children, with children of each generation becoming taller and healthier than those of the preceding, till a plateau-phase, representing the attainment of full expression of the genetic potential for growth, is finally reached. No significant secular trend was still discernible, at least among the poor communities, till almost 1990, except possibly in Kerala¹.

Challenges in Child Health Care

The unmet challenges with respect to child health care in the four phases of child growth, mentioned earlier, are now briefly considered.

Intrauterine phase and early infancy: The two major requisites for

optimal child development in the intra-uterine phase are: a) Maternal attributes and b) the quality and outreach of antenatal care service.

A recent report of the ICMR Task Force² goes to show the present sad state of the quality and outreach of our maternal and child health care. Only around 15 per cent of Primary Health Centres in the country had achieved satisfactory outreach to the community.

Even if we had an efficient antenatal health care system purged of its present flaws, we would still not be able to achieve a satisfactory level of child development, given the enormous disadvantages and disabilities that women labour under even before they embark on pregnancy. Our antenatal health care system, which starts its operations only after women are already half-way through their pregnancies, is designed essentially for women who are in a reasonably normal state of health and nutrition before the onset of pregnancy which unfortunately is not the case among poor communities in India. The battle for 'safe motherhood' should, under the circumstances, start when the girls

CONTENTS

● Child Care in India: Emerging Challenges — C. Gopalan	1
● Turmeric: A Potential Anti-cancer Agent — Kamala Krishnaswamy	4
● Foundation News	7

are still in their early adolescence, well before they are "trapped" into marriage and maternity. It is our total neglect of the care of the adolescent that has been responsible for our poor performance in the fields of maternal/child health and family-planning.

The Adolescent Phase

Data which will serve to highlight the importance of this phase may be briefly discussed.

Mother's physical state: There is now general consensus that women with body weights less than 38 kg at the commencement of pregnancy and with heights less than 145 cm are to be considered as being 'at risk' during pregnancy. These are the women likely to have complications during pregnancy or at delivery; they are also the women who are more likely to deliver low-birth-weight babies, who in turn are at risk of neonatal mortality, and whose growth and development are usually below par.

On the basis of data gathered by the National Nutrition Monitoring Bureau it was earlier estimated that 15 per cent to 29 per cent of Indian women between 20 and 30 years of age in 10 states of India had body weights less than 38 kg, and 12 to 25 per cent, heights less than 145 cm⁴. Thus a considerable proportion of women in the reproductive ages in our country, because of chronic ill-health and undernutrition in their childhood and adolescence, are of sub-standard stature and body build and are thus poor obstetric risks. Antenatal care confined to the late stages of pregnancy can certainly not correct this situation.

Indeed the figures quoted above which pertain to women above 20 years of age somewhat underestimate the magnitude of the risks that our women now face. The average age of girls at

marriage in the country as a whole according to the Registrar-General's data of 1981 was 16.7 years⁵. Average figures could be misleading. In the problem states of Bihar, Rajasthan and Madhya Pradesh, the mean age of girls at marriage is well below the national average. A recent ICMR study⁶ showed that the average age at marriage of rural girls in six states where the study was carried out was 13.8 years and their age at consummation of marriage 15.3 years.

Adolescence is an important phase of child growth and development. The adolescent growth spurt accounts for a substantial increase in body weights and heights (Table 1). Adolescence is the period when there is considerable accretion of calcium in the bones; a good part of skeletal development (including pelvic development) takes place during this period. A girl of 15 or 16 years is still a child; she enters adulthood only after she crosses 18 years. Growth is complete only between 18 and 20 years.

Child Labour at its Worst

It is thus obvious that a good part of pregnancies in our country today are teenage pregnancies. We witness the sad spectacle of millions of 'children' (girls of 14 to 18 years) compelled to engage in child-bearing and child-rearing even before they have had a chance to complete their own physical growth and development and attain adulthood. This is 'child labour' at its worst, in more senses than one. It is 'labour' which carries greater risks than some other forms of child labour over which there is public outcry.

Anaemia: There are other compelling reasons which point to the need for major attention to the adolescent phase of growth.

Iron-deficiency anaemia is a major factor contributing to maternal morbidity and mortality and low-birth-weights of offspring. It is not as if anaemia in our women sets in after they become pregnant. There is a great deal of anaemia in children and more especially in adolescent girls. A study reported in 1982⁷ for example showed that among girls less than 15 years of age, 65 per cent in Hyderabad, 69 per cent in Delhi and 97 per cent in Calcutta had haemoglobin levels less than 11 gm%. The present procedure for combating anaemia in pregnancy as part of antenatal care consists in the daily

administration of iron/folate tablets, given in the last 100 days of pregnancy starting from 20-24 weeks of pregnancy.

A recent ICMR study⁸ showed that at 20-24 weeks of pregnancy, at least 17 per cent of women had haemoglobin levels less than 9 gm%. The same study also showed that even when iron folate tablets at high levels of dosage (120 mg iron and 180 mg iron as against 60 mg) were administered regularly for 100 days, haemoglobin levels could not be raised to beyond 11 gm% in women whose initial hemoglobin levels were 9 gm% or less. This would show that even with the most intensive and efficient iron/folate supplementation programme confined to the last 100 days of pregnancy, the problem of anaemia in pregnancy will not be successfully combatted in a good proportion of our women. Considering that in real-life situations in our public health system only 17 per cent of PHCs were able to achieve more than 60 per cent coverage with respect to iron folate distribution in the last 100 days of their pregnancy, it must be clear that the present strategy for combatting pregnancy anaemia is wholly inadequate.

The Need for a New Strategy

Iron/folate tablets should be made freely available to adolescent girls in the countryside. The intake of these tablets by adolescent girls, and certainly by married girls, could be actually promoted through an intensive programme of education undertaken as a part of a broad-based programme of 'education for better living' beamed to adolescent girls. With this strategy, even if the supply of iron folate tablets is irregular and cannot be rigidly ensured on a daily basis, the chances of our being able to mitigate the anaemia problem would be far brighter. The proportion of girls who would be anaemic even before the onset of pregnancy may become far less.

Improvement of diets: The solution to the problem of anaemia, as indeed to other problems of undernutrition, cannot be allowed to be wholly dependent on drugs and tablets. It is important to emphasise the need for dietary improvement. Dietary improvement can be achieved without much additional cost to the family through the wise and judicious use of inexpensive locally available foods. This is an

Table 1: Heights and weights of rural girls

Age (years)	Height (cm)	Weight (kg)
14	145.9	35.1
18	150.9	41.9

Source: NNMB, Report for the years 1974-79, National Institute of Nutrition, Hyderabad, 1980.

Table 2: Percentage distribution of pre-school children according to standard deviation (SD) classification, India

SD classification according to	Period	<-3SD	-3SD to -2SD	-2SD to -1SD
Weight/Age (under-weight)	1975-79	38.0	39.5	18.3
	1988-90	26.6	42.0	24.2
Height/Age (Stunting)	1975-79	53.3	25.3	14.6
	1988-90	36.8	28.3	21.0

Source: National Nutrition Monitoring Bureau, Report of Repeat Surveys (1988-90), National Institute of Nutrition, Hyderabad (1991).

aspect which is currently totally neglected in our antenatal health care programmes. Indian diets are predominantly cereal-based and are likely to remain so. In such diets the absorption of iron is bound to be poor. Fortunately, however, this situation can be significantly improved by the inclusion of locally available green leafy vegetables in the diets.

Green leafy vegetables are good sources of vitamin C, which promotes absorption of iron; they are also good sources of folic acid which helps to combat anaemia. They are often good sources of calcium which the adolescent girl in particular needs. More than all, they are also rich sources of β -carotene — the precursor of vitamin A. The logical way of preventing vitamin A deficiency in the infant is to build up the vitamin A nutritional status of the mother during her adolescence and pregnancy through dietary improvement — consisting mainly in the inclusion of green leafy vegetables and other carotene-rich foods in the diets. A good part of the vitamin A stores of the infant are derived from the mother during the later stages of pregnancy.

Unfortunately, in our eagerness for shortcuts, we have depended on massive doses of synthetic vitamin A to the infant as an answer to the problem of vitamin A deficiency, rather than on the logical approach of improving the nutritional status of the mother during the pregnancy and adolescence. This aberration needs to be corrected.

The School Age

In the 1950s school meal programmes and school health services commanded considerable attention. However, the interest in this area of child development waned in the 1960s

with the emphasis shifting to the pre-school age-period (under-fives). The near-exclusive emphasis on the 'pre-school child' also resulted in diminishing attention to the mother.

It is true that the worst forms of malnutrition afflict the pre-school child, but it is also true that there is a great deal of morbidity and learning disabilities among children of school age because of which heavy investments in primary education programmes have not had the desired impact. Care of school-age child is not only important in itself; the school system also offers an excellent country-wide network and entrypoint for a comprehensive health programme beamed to a crucial segment of the population.

Our primary schools, especially in rural areas are grossly under-equipped. It is not surprising that dropout rates are high. Heavy investments on school health/meal programmes will be justified only where basic minimal educational standards in our primary schools can be ensured.

The Pre-School Child

During the last few years, child health/nutrition programmes directed at pre-school children have received considerable attention. However there is still a great deal of growth-retardation. The prevalence of Grade 1 and Grade 2 malnutrition in the pre-school is indeed somewhat higher than it was a decade ago (Table 2). This is perhaps to be expected because while we had vigorously pushed strategies for control of child mortality, these had not gone hand in hand with strategies for the promotion of child nutrition.

Ongoing urbanisation will also pose a major challenge to child health. It is expected that by 2000 AD, there will be as many as 100 million of our

population living in urban slums and under-fives in urban slums will roughly number 40 million.

Breast-feeding has been the sheet anchor of infant nutrition in our country. Despite their poor health/nutrition status, our poor women had always followed the salutary practice of breast-feeding their infants at least for the greater part of their infancy. But for this, the state of infant nutrition in the country would have been far worse than what it is today. There is the real danger that breast-feeding will face a very serious threat in the urban setting.

Families could be increasingly compelled to depend on street foods which may not always be hygienic, especially since the existing arrangements for enforcement of food standards are highly inadequate. There could be an escalation of diarrhoeal diseases in children and the consequent aggravation of undernutrition and growth retardation. Child health care in urban slums will therefore make increasing demands on our health system in the next few decades. Appropriate institutional arrangements and programmes for meeting these emerging challenges to child health will need to be initiated soon.

Excerpts from the IXth John Barnabas Memorial Lecture delivered on March 29, 1993, in New Delhi.

References

- Gopalan, C.: Nutrition challenge for Asia, progress in food and nutrition science, 16:51-84, 1992.
- Evaluation of quality of family welfare services at primary health centre level. An ICMR Task Force Study, New Delhi, 1991.
- Child Survival and Safe Motherhood Programme — India, Ministry of Health and Family Welfare, Govt of India, New Delhi, July 1991.
- National Nutritional Monitoring Bureau, Report of the years 1974-79, National Institute of Nutrition, Hyderabad, 1980.
- Census of India, 1981, Series 1, India, Paper 2 of 1983, Part II — Key population statistics, based on 5 per cent sample data, Office of the Registrar-general India, Ministry of Home Affairs, New Delhi, 1983.
- A national collaborative study of identification of high risk families, mothers and outcome of their offsprings with particular reference to the problem of maternal, nutrition, low-birth-weight, perinatal and infant morbidity and mortality in rural and urban slum communities. An ICMR Task Force Study, Indian Council of Medical Research, New Delhi, 1990.
- Report of working group on fortification of salt, *Am J Clin Nutr*, 34: 1442, 1982.
- Field supplementation trial in pregnant women with 60 mg, 120 mg and 180 mg of iron with 500 μ g of folic acid. An ICMR Task Force Study. ICMR, New Delhi, 1992.