Child Nutrition in Rural India: Some Policy Priorities and Strategies

Vipin Chandran, K.P and Sandhya, P

Zamorin's Guruvayurappan College Calicut, Government Brennen College Thalassery

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K.P.Vipin Chandran[1] & P. Sandhya[2]

The most neglected form of human deprivation is malnutrition particularly among preschool children. Millions of Indian children are equally deprived of the rights to survival, health, nutrition, education and safe drinking water. Interventions for preschool children (Early Childhood Care and Development) in India must be broadly addressed in three dimensions: child health, child development/education and child nutrition. The specific objectives of the study are to examine the current picture of nutritional status of preschool children in rural India; to analyze the policy priorities related to essential components of early child care and development and its interventions; and to suggest the strategies to combat malnutrition among preschool children in India. There are a number of factors affects child nutrition either directly or indirectly. Strategies for preschool children in India require three essential components. They are, system of food entitlements, system of child care and system of health care. Problems of malnutrition among preschool children needs to be addressed through right away. This paper is an attempt in this regard.

Key words: **Malnutrition, ABC index, Early child care**

[1] Assistant Professor, P.G.Department of Economics, The Zamorin's Guruvayurappan College, Calicut-673014, E-mail:kpvipinchandran@gmail.com

[2] P. Sandhya, Research Scholar, P.G. Department of Economics, Government Brennen College Thalassery, Kannur. E-mail: sandhyavipinchandran@gmail.com

1. Introduction

The most neglected form of human deprivation is malnutrition particularly among preschool children. After India become independent in 1947, several steps were taken for the improvement of the health situation and well-being of the children. But still malnutrition is a major problem in India, according to NFHS-3, 46 percent of children are underweight. Better nutritional status among children is the nucleus for child survival and optimal cognitive development of the current as well as succeeding generations. Preventing malnutrition has emerged as one of the most critical challenges to India's development planners in recent times. General malnutrition, characterized by underweight among children is more prevalent amongst rural children, scheduled castes and tribes, and amongst children with illiterate mothers. The threat of communicable diseases, as well as prenatal morbidity and mortality, because of the poor nutritional status of a substantial part of the population. The present challenges of communicable diseases and maternal and child survival reveal the weaknesses of the health system. Amartya Sen points out that 'while the case for economic reforms may take good note of the diagnosis that India has too much government interference in some fields, it ignores the fact that India also has insufficient and ineffective government activity in many others fields, including basic education, health care, social security, land reform, and the promotion of social change.

The care of young children cannot be left to the family alone-it is also a social responsibility. Social intervention is required, both in the form of enabling parents to take better care of their children at home, and in the form of direct provision of health, nutrition, preschool education and related services. Interventions for children under six years (Early Childhood Care and Development) in India must be broadly addressed in three dimensions:

child health, child development/education and child nutrition. These must necessarily be provided simultaneously in the same system of care. Further, while planning for provision of early childhood care and development, it must be kept in mind that different age groups require different strategies. The three crucial age groups are: (1) children 0-6 months of age-the period of recommended exclusive breastfeeding, (2) children 6 months to 3 years-until entry into preschool, and (3) children 3 years to 6 years-the preschool years, until entry into school.

2. Objectives of the study

The specific objectives of the study are

1. to examine the current picture of nutritional status of preschool children in rural India.
2. to analyze the policy priorities related to essential components of early child care and development and its interventions.
3. to suggest the strategies to combat malnutrition among preschool children in India.

3. Data and Methodology

The basic data used for this study have been taken from National Family Health Survey (NFHS-III) 2005-2006, FOCUS report, UNICEF reports, NNMB data, 2002 and planning commission documents. The unit of analysis is children aged 0-59 months in India for whom complete information is available with regards to health characteristics. In NFHS, child nutrition has been measured using anthropometric measures: a child's height-for-age, weight-for-height and weight-for-age are expressed in standard deviations (Z-scores) from the median of the reference population, this being the commonly used US National Center for Health Statistics (NCHS) standard as recommended for use by the

World Health Organization (WHO). The height-for-age Z-score measures the child's height according to age, this being an indicator that reflects the cumulative effects of growth deficiency and so is designed to measure long-term nutrition. The weight-for-height Z-score measures the child's weight according to height, where this indicator has been used to monitor the growth of children and is typically regarded as a measure of short-term rather than long term health status. One of the preferred and commonly used anthropometrical indices for assessing nutritional status is the weight for age (underweight). This index reflects the body mass relative to chronological age. It influenced by both the height of the child and his/her weight. This index is often taken as a composite measure of two other anthropometrical measures, height for age (stunting) and weight for height (wasting). Stunting is an indicator of chronic deficiency whereas wasting is of acute undernutrition and underweight is a composite index of both. The classification of a child as undernourished is based on the comparison of its weight for age with the child of same sex and age from the NCHS/WHO international reference population. The comparison is done using Z scores or S.D scores. In the present study, the Z scores for weight for age are used to assess the status of malnourishment. Deviations of Z scores less than –2 SD from the international reference population are used to classify the children as moderately malnourished whereas deviation of Z scores less than –3 SD put the children in the severely malnourished category. However, these anthropometric measures are widely regarded by nutritionists as a reliable indicator of malnutrition.

4. Discussion: Current Situation of Indian children

Malnutrition and starvation one in every three malnourished children in the world lives in India. UNICEF report on 'Childhood under threat', speaking about India, states that millions of Indian children are equally deprived of the rights to survival, health, nutrition, education and safe drinking water. It is reported that 63 percent of them go to bed hungry and 53 percent suffer from chronic malnutrition. The report states that 147 million children living kuchcha houses, 77 million do not use drinking water from a tap, 85 million are not being immunized, 27 millions are severely underweight and 33 million have never been to school. A girl child is the worst victim as she is often neglected and is discriminated against because of the preference for a boy child. There is a serious problem through-out the country but with large disparities between states and groups. Bihar, Madhya Pradesh, Uttar Pradesh, and Rajasthan account for more than 43 percent of all underweight children. Undernutrition is concentrated in a relatively small number of districts and 10 percent of villages and districts account for almost 30 percent of all underweight children; a quarter of districts and villages account for more than half of all underweight children.

Nutritional status can be assessed in terms of the well being of children under six. On the basis of the three important indicators of Infant mortality rate (IMR), the percentage of children who are underweight and have been immunized, then FOCUS report (2006) created an 'Achievement of Babies and Children (ABC) index'. On the basis of ABC index calculation, While the ABC index increased by 6.7 points (18.4%) between NFHS-1 and NFHS-2, the increase in the later period was only 5.7 points (13.1%). Further, some other indicators point towards deterioration in conditions of children between NFHS-2 and NFHS-3. The percentage of children under age 3 who are categorized as wasted, increased in 18 of the 22 states for which data is available, (the only states reporting a reduction in

wasting were Assam, Chhattisgarh, Himachal Pradesh, Karnataka, Maharashtra and Orissa) with the all India incidence rising from 14 percent to 17 percent. Children suffering from anemia increased from 74 percent to 79 percent (the states where the percentage increased are Andhra Pradesh, Assam, Gujarat, Karnataka, Kerala, Madhya Pradesh, Orissa, Tamilnadu and Uttar Pradesh).

Table 1: Child indicators from NFHS

Indicators	**NFHS-1**	**NFHS-2**	**NFHS-3**
IMR (per '000 births)	77.3	67.3	55.5
% of children underweight (age<3 years)	51.1	46.7	43.3
Children fully immunized (%)	38.3	44.2	46.0
ABC Index	**36.6**	**43.3**	**49.0**

Source: Various rounds of NFHS

In rural India, about 26 percent children are severely stunted whereas 7 percent children are severely wasted and 18 percent children are severely underweight. About 49, 79 and 54 percent children are average among stunted, wasted and underweight. About 22 percent of children living in rural India are severely stunted belonging to age group 25-36. Severe wasting is observed among children under 12 months of age whereas severe underweight children range between 13 to 48 months of age. Sex of the child does not bring out any clear picture. It has also been found that children belonging to Muslim religion show poor indicators whereas those bringing to others category show positive result. Higher proportion of average children is notable 64 percentages those who are belonging to 37-48 age in month in weight-for-age as compare to other groups and overall percentage also. Higher percentage of male child (26.1) of severely malnourished are found to be in height-for-age from other category. Percentage of female child is higher from male child in weight-for-age category. Lower proportion of normal children are found in other category and

higher proportion of severe children also found in other category according to height-for-age and same study has found in weight-for-age (table 2).

Children belonging to scheduled caste, scheduled tribe or other backwards classes have relatively high levels of undernutrition according to all three measures. Children from scheduled tribes have the poorest nutrition status on almost every measure. Average children belonging to richest economic quintile, the percentage of undernourished children is low and higher proportions of severe malnourished children belonging to poorest economic quintile. This is true for all the three anthropometric measures. Indirect relationship exit between level of educational attainment among mothers and severity of malnourishment. In short, higher the educational level of mothers, better is the health of the child.

Table 2: Percentage of preschool children years classified by nutritional status and selected background characteristics for Rural India, 2005-06.

Selected background characteristics	Height-for -Age			Weight-for-Height			Weight-for-Age		
	Normal	Moderate	Severe	Normal	Moderate	Severe	Normal	Moderate	Severe
Age in Month									
0-12	72.9	15.9	11.3	69.2	18.8	12.0	64.0	22.1	13.9
13-24	42.6	27.4	30.1	75.9	16.5	7.6	52.1	28.7	19.2
25-36	40.5	28.0	31.5	82.5	12.4	5.1	50.8	29.3	19.9
37-48	42.1	27.0	30.9	84.0	11.2	4.8	50.9	30.4	18.7
49-59	46.7	27.7	25.5	83.6	12.0	4.4	52.1	31.2	16.7
Sex									
Male	49.1	24.7	26.1	78.3	14.6	7.1	54.8	28.3	16.9
Female	48.8	25.6	25.5	79.9	13.7	6.4	53.2	28.3	18.5
Religion									
Hindu	49.2	25.3	25.6	78.5	14.5	7.0	53.2	28.8	17.9
Muslim	46.8	25.2	28.1	81.4	12.6	6.0	55.5	27.4	17.1
Others	54.2	23.3	22.5	81.6	12.9	5.5	63.2	21.6	15.2
Caste									
SC	44.0	26.3	29.7	78.0	15.1	6.9	49.0	30.8	20.2
ST	45.2	24.2	30.7	71.3	18.8	9.9	43.5	30.4	26.1

OBC	48.5	25.0	26.5	79.4	13.7	6.9	53.9	28.6	17.5
Other	55.9	24.5	19.6	82.6	12.1	5.3	63.0	24.5	12.4
Wealth Index									
Poorest	39.8	25.8	34.3	74.9	16.3	8.8	43.2	31.8	25.1
Poorer	45.8	26.3	27.9	77.5	15.6	6.9	50.4	30.0	19.6
Middle	51.4	25.5	23.1	81.0	12.9	6.1	58.7	27.0	14.3
Richer	60.6	24.3	15.1	84.1	11.4	4.6	66.8	24.7	8.6
Richest	75.7	17.1	7.2	88.6	7.6	3.9	80.9	15.2	4.0
Mother's Education									
No education	42.1	25.8	32.1	76.6	15.2	8.2	47.1	30.0	22.9
Primary	50.3	26.1	23.7	79.6	14.6	5.8	55.5	29.4	15.2
Secondary	60.3	24.0	15.7	83.2	12.1	4.7	65.4	25.4	9.2
Higher	66.6	19.9	13.5	83.7	11.6	4.7	71.4	19.1	9.5
Overall	49.0	25.2	25.8	79.0	14.2	6.8	54.0	28.3	17.7

Source: NFHS-3,2005-06.

There are a number of factors affects child nutrition, either directly or indirectly. The most common factors are food availability and dietary intake, breastfeeding, prevalence of infectious diseases, access to health care, access to safe drinking water and sanitation, immunization against major childhood diseases, vitamin A supplementation, maternal care during pregnancy, socioeconomic status, and health seeking behaviour. Demographic characteristics such as child's age and sex, birth intervals and mother's age at childbirth are also associated with child malnutrition.

5. Some Policy Priorities

Preschool children have been grossly neglected for a long time in Indian planning, and the country is paying a heavy price for this today. The 11th Plan presents an opportunity to correct this bias and give children their due. However, this cannot be done through marginal expansion or superficial 'reform' of existing child development programmes. It requires bold initiative, new strategies and a massive increase in financial

allocations for preschool children. It is well understood that the health and nutrition of a young child also get determined by the status of the mother's health. A malnourished mother often gives birth to an underweight child who grows up to be a malnourished adolescent, and in the case of girls perpetuates the cycle of malnutrition by giving birth to a low birth weight baby. It is also important that simultaneously there are interventions to ensure nutrition of adolescent girls and women, and for women's access to care during pregnancy, and this has been the rationale of the 'life-cycle approach'. Therefore the two aspects to addressing malnutrition i.e. prevention of malnutrition and management of malnutrition, are both linked and complementary, as management of the malnourished child contributes to prevention through its impact on future generations.

Poverty impacts malnutrition in multifarious ways–by reducing purchasing power for good quality calorie dense foods, by reducing access to health care, by giving rise to physical environments of lack of safe water and sanitation and by impact on education. If this is accepted as one of the main determinants of malnutrition, there must be strategies built in to create livelihoods, reduce poverty and empower the poor. In this study looking at the strategies needed to meet the comprehensive needs of children under six, with special emphasis on nutrition.

6. Essential Components of Early child Care

Strategies for preschool children in India require three essential components. **A system of food entitlements**, ensuring that every child receives adequate food, not only in terms of quantity but also in terms of quality, diversity and acceptability. **A system of child care** that supplements care by the family and empowers women. Such care needs to be provided by informed, interested adult carers, with appropriate infrastructure. **A system of health**

care that provides prompt locally available care for common but life threatening illnesses. Such a system needs to address both prevention and management of malnutrition and diseases.

a) Age 0 – 6 months: Early Initiation and Exclusive Breastfeeding

According to most recent guidelines (WHO guidelines and National Guidelines for infant and young child feeding IYCF), breastfeeding must be initiated within one hour of birth and exclusive breastfeeding should continue until six months of age. Studies have shown that exclusive breastfeeding alone provides the nutrition that meets all the infant's requirements in this age group. It has also been shown that this is the only preventive and the best treatment for the major killers during the neonatal period (e.g. diarrhoea, pneumonia etc). Most of the studies have shown that starting breastfeeding within one hour of birth can help reduce the risk of neonatal mortality by almost a third. Continued breastfeeding for two years of age and beyond, along with the introduction of adequate and appropriate complementary feeding from the 7^{th} month onwards, can further reduce the risk of death. Even though breastfeeding is such a vital means of reducing deaths of young children, and ensuring their best growth and development, little emphasis is paid at the policy level to promoting and supporting mothers to breastfeed their babies adequately. The National Maternity Benefit Scheme (NMBS), which provides for a one time payment of Rs.500 to pregnant women below the poverty line, partially addresses maternity entitlements and the nutritional requirements of pregnant women and breastfeeding children. Breastfeeding counselling and support depends entirely upon the skills, training and time of the Accredited Social Health Activist (ASHA), who has many other tasks.

Children in this age group also require growth monitoring, immunization, newborn care and referral services to the health system.

b) Age 6 months to 3 years: Complementary Feeding and Day Care

From the seventh month onwards complementary foods are to be introduced to children, along with continued breastfeeding for two years or beyond. Children can eat 'normal home' food (in mashed or semi-solid form), however children at this age can eat only small quantities at a time and therefore need to be fed many (about five) times a day and need to be given food that has adequate calories, proteins and micronutrients. Some of the interventions required for this age group are: Ensuring that frequent meals in adequate quantity are given to the children. This food has to have adequate nutrients in the form of animal proteins (milk, eggs, meat, fish), adequate in fats, fruit and vegetables. Nutritious and carefully designed take-home rations (THR) based on locally procured food, delivered every week, should be provided as 'supplementary nutrition' for children in this age group. Crèches must be provided, with trained workers, to ensure that these children are provided with adequate care and development opportunities, especially if there are no adult carers at home due to increased female work participation. Further services children in this age group require are regular immunization and growth monitoring, treatment for anaemia and worms, prompt care for fever, diarrhoea, coughs and colds and referral services for the sick and severely malnourished child. Most of the above can be provided by the Accredited Social Health Activist (ASHA) and the Anganwadi workers (AWW).

c) Age 3 to 6 years: Focus on Preschool

It is well established that preschool education is very significant in helping children to prepare for formal schooling. Preschool education assists children both to enter school

and to remain in the system. A child cannot fully realize her right to education unless she has access to quality early childhood care and education. The interventions required for children in the age-group of 3 to 6 years (until joining school) are: A centre-based play-school facility with a teacher trained in conducting preschool activities. Hot cooked meals, serving the same broad purposes as the midday meal scheme in primary schools. These include not only nutritional support but also enhancing child attendance, promoting social equity, providing income support to poor households, and acting as a form of nutrition education.

The focus should therefore shift to quality preschool education as the main task, with nutrition and health services playing roles similar to the midday meal scheme and the School health scheme in primary schools. From the above discussion it is clear that different strategies are required for addressing the health, nutrition, care and development needs of children under six, depending on their age. The components of the services required by the three age groups among children under six are summarized in the table 3 below:

Table 3: Essential Components of Early Child Care

	0-6 months	**6 months to 3 years (until joining preschool)**	**3 years to 6 years (until joining school)**
Food	Exclusive Breastfeeding – Counselling and Support for Breastfeeding; supplementary nutrition and maternity entitlements for lactating mother	Supplementary nutrition in the form of nutritious take home rations (THRs), nutrition counselling, nutrition and health education	Nutritious hot cooked meal at the centre

Child Care and Development	Crèches at worksites and maternity entitlements to ensure proximity of mother and child	Crèches; expanding existing crèche schemes and convert 10% Anganwadis into Anganwadi cum crèches	Preschool at the Anganwadi centre, Crèches/ day care facilities for those who might need it
Health Care	Immunization, growth monitoring, home based neo-natal care, prompt referral when required	Immunization, growth monitoring, prompt care for childhood illnesses, referral care for sick and malnourished children, de-worming, iron supplementation	Immunization, growth monitoring, prompt care for childhood illnesses, referral care for sick and malnourished children, de-worming, iron supplementation

Source: Strategies for Under Six: A framework for the 11th plan; Planning Commission, 2007, p.10.

The Eleventh plan marks a big leap forward in the area of child rights. The interventions and programmes recommended for the 11th plan period should include improving the reach and quality of existing programmes and formulating new schemes to address hitherto unaddressed areas and issues based on national policy for children, 1974. It also includes, National Charter for children 2004 which makes special mention of the importance of protecting the rights and dignity of girl children; National common minimum programmes; and the National plan action for children 2005. This acceptance of the situation of the children can alone safeguard their rights and ensure better outcomes for children (Planning Commission, 2007).

7. Strategic Interventions

The following systems would be required to provide comprehensive early childhood care and development: they are, Maternity entitlements to ensure proximity of mother and child during the first six months as well as adequate care to both mother and child; Breastfeeding, IYCF and nutrition counselling and support services to families; Community based day care services/crèches and Pre-school centres; Supplementary

nutrition; and Health care services- predominantly community based with institutional backup.

The ICDS which is currently the only national programme to address the health, nutrition and pre-school needs of children under six years has the potential and mandate to fulfill many of these requirements. The Government of India has launched various new countrywide programmes like the Sarva Shiksha Abhiyan (Education for all), the National Rural Health Mission, the Expanded Mid-day Meal Scheme and the Integrated Child Development scheme, Sampoorna Grameen Rozgar Yojana, Targeted public distribution system (TPDS) provides heavily subsidized cereals to the entire BPL families, Antyodya Anna Yojana (AAY) targets the absolute destitute are the main programmes targeted to achieve goals akin to the Millennium Development Goals (MDGs). NRHM incorporates measures for achieving the health-related MDGs, such as reduction of child and maternal mortality as well as prevention and control of communicable and non-communicable diseases. There should be greater convergence between the ICDS and the National Rural Health Mission (NRHM) for prevention and management of malnutrition. There are a host of such interventions, which cover a full-range of life-cycle vulnerabilities affecting the poor. All these interventions did result in some improvement in nutritional status of children but the pace of improvement is slow. The Eleventh Five-Year Plan (2007-2012) prepared by the Planning Commission emphatically stated that 'Development of the child is at the centre of the Eleventh Plan'. While continuing with the rights-based approach to child development, the plan recognizes the importance of a holistic approach, focusing both on outcomes and indicators for child development as well as macro-perspective trends and governance issues. The interventions and programmes recommended for the 11^{th} plan

period should include improving the reach and quality of existing progrmmes and formulating new schemes to address these issues. These interventions involve the integration of three related systems, focusing food and nutrition; health services; and child care. A decentralized approach is required, fostering participatory planning, community ownership, responsiveness to local circumstances, and the involvement of Panchayatiraj institutions.

8. The three 'A' approach to Combat malnutrition

Malnutrition can be combated using the three 'A' approach – awareness, accessibility and affordability.

Awareness

Awareness has to be created not only in the community, but also among the providers – politicians, bureaucrats, NGOs, and medical professionals. Innovative methods of creating awareness in the community are needed. The media and school education can play an important role. The NRHM emphasizes the need to provide universal access to equitable and affordable health care that is accountable and responsive to the poor and marginalized people in the rural areas, especially children and women. National Nutrition Mission has been set up in 2003, with the basic objective of addressing the problem of malnutrition in a holistic manner.

Accessibility and Affordability

The Government of India has been implementing a wide range of nutrition intervention programmes for achieving food and nutritional security at the household and individual levels.. These include: (i) supplementary feeding programmes for vulnerable groups, (ii) distribution of micronutrients like iron, folic acid and vitamin A and (iii) food

fortification. Ultimately, effort has to be made to enable the community to feed itself. The targeted public distribution system (PDS) can go a long way in meeting the food needs of the poor. Apart from cereals, PDS should also include millets, pulses, oil and if possible some vegetables, fruits, and animal products (milk, eggs, fish powder) to ensure dietary diversification.

Access to a balanced and diverse diet to ensure food and nutrition security at the household and individual levels can be greatly improved by decentralized production of a variety of foods (cereals, millets, pulses, vegetables, fruits and animal products) at the block or village level. Such people's planning can increase household nutrition security and not just national food security, and also generate livelihood.. It has been found that within a household, diet of preschool children is deficient compared to that of adults, suggesting that it is not just affordability, but also the knowledge of a child's nutritional needs and feeding.

9. Need for Paradigm Shift

There is need for paradigm shift in specific objectives from:

- Child survival to child health.
- . Food security to nutrition security (household and individual).
- Literacy to education and skill development for women.
- Focus only on pregnant and lactating women to lifecycle approach, including girl children, adolescents and elderly people and
- Aid to empowerment through livelihood security for women.

India's high levels of child malnutrition reflect the continuing neglect of health, the inadequate reach and efficacy of health and child care services, and the failure of strategies to reach newborn children and those under the age of six. These deficiencies need to be

addressed right away. The most serious obstacles to improving child nutrition do not relate directly to food availability, even at the household level. Distribution of food within the household, child-rearing practices, the nutritional quality of the food, clean water and reducing infections all require a much more comprehensive and integrated approach and implement all 'nutrition safety net schemes' in an integrated manner on a life-cycle basis.

The nutrition aspects of 'food and nutrition security' need more specific attention. This applies to both reducing the number of malnourished and to accelerating the rate of decline. Economic growth and continuation of existing programmes will not be sufficient to overcome the problem of child malnutrition in particular. It also will require more state, district and even village-level differentiation and emphasis. The risk of growing inequality between groups, districts, regions, etc. is increasing as economic growth accelerates. This requires specific attention in districts where poverty is concentrated and greater attention on 'forward looking' vulnerability reduction and risk management by households that target specific livelihood profiles. The community needs to be educated about environmental sanitation, personnel hygiene, proper child rearing, breast feeding and weaning practices, especially in the context of changing life style of the rural people in India. A comprehensive child survival programme with supplementary feeding, growth and development monitoring and early detection and prompt treatment during illness needs to be devised and implemented ensuring community participation. The government needs to spend more money on quality nutritional programmes in order to improve the state of malnutrition and therefore health services, education for females and poverty.

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