Health and nutrition profile of children in rural Kerala: A call for an action

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HEALTH AND NUTRITION PROFILE OF CHILDREN IN RURAL KERALA: A CALL FOR AN ACTION

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Abstract

Child health as an area of policy option has been given much attention by health economists, public health experts, planners etc. children are vital to the nation's present and her future. The increasing interest on child health and nutrition has been justified on many ways. Under five years old children are targeted for priority care under various maternal and child health programmes, but these age groups (5-15 years) remain a neglected lot. The recent health statistics of Kerala tell a dark narrative of degenerating public health system. This study analyses the problems of children's health and nutritional status in rural Kerala with special reference to Kasargod district, focusing on Protein-Energy Malnutrition of children, and traces the link between health and nutrition in the family and the acquisition of human capital, recognizing the interdependencies between children's nutritional status and health and subsequent learning ability. The multivariate analysis of the effects of selected demographic and socioeconomic factors on child malnutrition indicates that the strongest predictors of child nutrition in rural Kerala are child's age, child's birth order, mother's education, and household standard of living. Nutritional deficiency among children adversely affects children's overall health, educational attainment, physical and mental development.

Keywords: Nutritional status, Anthropometry, Protein-Energy Malnutrition, Underweight

I. Introduction

Poor child health and nutrition impose significant and long-term economic and human development costs- especially on the poorest countries and communities, further entrenching their status. Improving child health and nutrition is not only a moral imperative, but also a rational long-term investment. However, while there have been notable achievements in the state of child health globally there remain large numbers of children whose prospects for a healthy and productive life are bleak. Healthy children grow in to healthy adults; a healthy and productive population is an asset to any nation. The monitoring of physical growth during adolescence serves as an extremely sensitive

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index in the general evaluation of health and nutrition standards of population. Under five years old children are targeted for priority care under various maternal and child health programmes, but these age groups (5-15 years) remain a neglected lot. No coherent, coordinated and effective health service is available in the country for this group of school going children.

Child health as an area of policy option has been given much attention by health economists, public health experts, planners etc. children are vital to the nation's present and her future. They have begun to be recognized not only for who they are today but also for their future roles in creating families and powering the work force of the society. In recent years, there has been an increased focus on issues that affect the health of children. The increasing interest on child health and nutrition has been justified on many ways. Child health from a medical point of view, the sheer view of the child population in most developing countries, both in absolute terms as well as in relation to the total population of the country is the primary justification for allotment of more resources in improving child health status. To the health economist, the areas of child health are equally challenging. If the returns to investment in health care and supportive infrastructure are to be quantified in some way, the child mortality and morbidity statistics provide one of the most effective ways of comparing these across countries (Panikar and Soman 1984; Ramankutty et.al 1991).

2. Child Nutrition Scenario of India

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, at present, 46 percent of India's children under the age of three are underweight. India is the highest percentages of undernourished children in the

world (NFHS-3). The 26% of India's population lives below the poverty line and yet 46 percent of children under the age three are malnourished. It indicates no linkage between levels of child malnutrition and poverty. The child survival is the important matter of concern in India. 87 percent of every 1000 born still have the probability of dying between birth and 5 years of age. The significant severe problem of malnutrition through out the India and inequalities in nutritional status worsened in the 1990s, between in income groups, urban-rural dwellers, castes and genders.

Consider the well-being of children under six, on the basis of the three important indicators of infant mortality rate, percent of children who are underweight and have been immunized, then Focus Report (2006) created as "Achievement of Babies and Children (ABC) index"(Table 1).

Table 1: Well-being of Indian Children

Indicators	**NFHS-1 (1992-93)**	**NFHS-2 (1998-99)**	**NFHS-3 (2005-06)**
IMR (per 1000 births)	77.3	67.3	55.5
% of children underweight (age< 3 years)	51.1	46.7	43.3
% of children fully immunized	38.3	44.2	46.0
ABC index	36.6	43.3	49.0

Source: Constructed on the basis of Focus report 2006

Researchers and social scientists have revealed that even in the face of adverse economic conditions some international communities have registered impressive health

gain. China, Cuba, Costarica, Srilanka are examples of such countries and Kerala state in India if taken separately also had quite a commendable record in the health sector in the past few decades (Table 2). Low birth rate and death rate along with higher female life expectancy, low infant mortality and low maternal mortality rate, narrow negligible gap between rural and urban and lower levels of disability are the special characteristics of Kerala's health status. The major factors contributing to such a unique situation are a wide network of health infrastructure and man power, policies of successive state government and other social factors like women's education, general health awareness and clean health habits of the people (Panikar& Soman 1984; Soman 1992; Kannan et.al 1991; Navaneetham & Thankappan 1999).

Table 2: Comparison of Health Indicators: Kerala and other important countries

Countries/ State	IMR	< 5 mortality Rate	Life expectancy	Health expenditure (as % of GDP)
Kerala	**14**	**19**	**73.5**	**6.2**
India	60	87	62	6.1
China	27	37	71	5.8
Srilanka	11	15	71	3.7
USA	7	8	77	14.6
Canada	5	6	80	9.6

Source: World Health Report 2005 except for Kerala, which was taken from SRS for the year 2005.

3. Child Nutritional Status in Kerala

Kerala is a model state in the country as far as human development is concerned. The convincing performance of Kerala in achieving demographic transition, in spite of

low economic development, has received Global attention. The overall status of Kerala state with regard to the health as well as social status is of developed countries. The apparent paradox of low average nutritional intake leading to high nutritional outcome in aggregate can perhaps be explained to some extent in terms of the remarkable reach of the public distribution system in Kerala, in providing a wider access to food which is complemented by free noon meal for children at school and supplementary nutritional programme for pre-school children, pregnant and lactating mothers (HDR 2005).

Percentage of the infants who have received colostrums varied from 88 percent (Ernakulam) to 45 percent (Trissur) during the year 1998-99. A notable feature is that Trissur, 99 percent of the deliveries have taken place in the institutions. Except in Alappuzha district the exclusive breastfeeding practice is less than 100 percent. In Wayanad, less than 30 percent of the children received exclusive Brest milk followed by Palakkad (31%). Nutrition programme for children in the age group 1-3 years achievement was below 50 percent in most of the countries. Only in Kannur, achievement was 80 percent and in Pathanamthitta it was 13 percent during the period 1999. While in the case of 3-6 years age group, achievement was better than the former except Malppuram (34%) and Wayanad (37%), all other districts (Table 3). The coverage of supplementary nutrition programme pregnant women varies from 34 percent in Kasargod to 80 percent in Kannur. Whereas the programme for nursing women shows the least in Kannur (15%) and highest in Kottayam (64%), (UNICEF 2001, HDR 2005).

Table 3: District Wise Indicator of Child Nutritional Status in Kerala

State/district	Weight-for-age		Anaemia among children		
	-3SD[2]	-2S.D[3]	Mild	Moderate[4]	Severe
Kerala	9.3	35.8	79.4	10.2	0.0
Thiruvanthapuram	8.5	36.3	85.2	9.2	0.0
Kollam	5.4	24.3	75.8	7.7	0.0
Pathanamthitta	9.2	33.9	86.6	9.2	0.0
Alappuzha	5.9	30.8	84.3	4.8	0.0
Kottayam	10.3	36.6	82.4	16.7	0.0
Idukki	5.0	24.3	70.7	2.4	0.0
Ernakulam	5.9	38.2	88.7	9.4	0.0
Thrissur	5.5	23.9	79.2	2.8	0.0
Palakkad	19.1	55.6	74.7	25.3	0.0
Malappuram	6.9	36.7	72.9	5.2	0.0
Kozhikode	18.7	46.6	79.7	14.9	0.0
Wayanad	8.2	34.3	75.0	11.1	0.0
Kannur	7.3	32.2	79.1	16.3	0.0
Kasargod	13.1	35.2	78.1	5.1	0.0

Source: Nutritional status of children and prevalence of Anaemia among children, adolescent girls and pregnant women: DLHS-RCH, India 2002-04

The health indicators of Kerala are higher, compared to other states in India; the latest NFHS-3 reveals that the situation of child nutrition status is alarming picture (Table 4). Also much needs to be done to improve the health of women and children especially

among dalits, marginals and deprived section of the community. Most of the children in the school going age group among deprived sections and mariginals in Kerala are suffering from nutritional anaemia (Gangadhran 2007).

Table 4: Comparison of Child Nutritional Status: Kerala and India

States	Percentage of Children							
	Stunting		Wasting		Underweight		Children age 6-35 months who are Anaemic	
	NFHS-2 1998-99	NFHS-3 2005-06	NFHS-2 1998-99	NFHS-3 2005-06	NFHS-2 1998-99	NFHS-3 2005-06	NFHS-2 1998-99	NFHS-3 2005-06
Kerala	22	21	11	16	27	29	43.9	55.7
India	46	38	16	19	47	46	74.2	79.2

Source: NFHS-2 and NFHS-3

4. Threats to Present Health Scenario of Kerala

The important challenges of the present health scenario in Kerala are decreasing allocation to public health sector, degenerating public health system, unregulated private sector leading to inequality and increase in cost of health care, the uncontrolled growth of the private sector, escalation of health care cost and marginalization of poor, re-emerging epidemics of malaria, dengue fever, leptospirosis and now chickunguniya and increasing incidence of non-communicable diseases (Heart diseases, Cancer, Chronic lung diseases, Diabetes and Mental Illness and suicides). (Thankappan 2007; Ekbal 2006).

In spite of the Kerala having the best indicators on Child development, certain disturbing trends have emerged in recent years affecting this developmental status,

especially in the child population. This includes low birth weight in babies, stunting of growth, wasting, increasing trends of underweight, poor maternal nutritional status, prevalence of anaemia among women and adolescent girls. The important anthropometric indicators of child nutritional status are wasting and underweight are increasing in Kerala 11 percent to 16 percent and 27 percent to 29 percent respectively in1998-99 to 2005-06. (NFHS-3; Thankappan 2007).

The recent health statistics of Kerala tell a gloomy narrative of degenerating public health system especially the percentage of fully vaccinated children in the age group 12-23 months in Kerala came down from 80 percent in 1998-99 (NFHS-2) to 75 percent in 2005-06 (NFHS-3). The proportion of anaemic women in the age group of 15-49 years has increased from 22.7 percent to 32.3 percent and that of underweight children from 27 percent to 29 percent during the same period. Infant mortality in the state that reached 10 per 1000 live births in the mid 1990s has increased to 14 as per the latest SRS data (M.A. Oomen 2008).

5. Definition and Measurement of Child Nutritional Status

Undernutrition, both protein energy malnutrition and micro nutrient deficiencies, directly affects many aspects of children's development. In particular, it retards their physical and cognitive growth and increases susceptibility to infection, further increasing the probability of malnutrition (Michale Gragnolati.et.al 2005). Malnutrition means "an inadequacy or deficiency in the quality of several essential nutrients which if made good enables a person to lead a healthy active life." (Peter Svedberg 2000; Osmani Sidddiq 1992). Inadequate diet may produce severe forms of malnutrition in children, these are, protein energy malnutrition, nutritional anaemia, vitamin A deficiency and iodine deficiency disorders.

Nutritional status of children is measured by using anthropometry method. It is quantitative method and it also considers the different types of measurements. They are (1) height-for-age (2) weight-for-age and (3) weight-for-height. Each of these measurements evaluates different aspects of child's nutritional status. Height-for-age reflects a child's past or chronic nutritional status or deficit in height-for-age is referred as 'stunted'. Low weight-for-age index identifies the condition of being 'underweight' for a specific age. Weight-for-height reflects more a child's current nutritional status. Children whose weight is too low relative to their heights are called 'wasted'. The nutritional status of a child normally expressed in the Z-score of the concerned indicator. Weight and height of children of a certain age group follow more or less the normal distribution.

6. Micro Study of Rural Kerala

This study analyses the problems of children's health and nutritional status in rural Kerala with special focus on Kasargod district. The specific objectives of the study are, to examine the trends and patterns of children's (between 6-9 years schooling) nutritional status in rural Kerala, to identify the determinants of children's nutritional status and an explanation for its association and to suggest appropriate strategies for improving the children's nutritional status in rural Kerala focusing on Protein-Energy Malnutrition in children, and traces the link between health and nutrition in the family and the acquisition of human capital, recognizing the interdependencies between children's nutritional status and health, parental fertility behaviour, allocation of parental time, and subsequent learning ability.

The present study was based on both primary and secondary sources. The primary survey was conducted in the various lower primary schools in kasargod district. 120

samples can be taken from study area. The stratified random sampling techniques can be used for investigation. The important secondary sources are various issues of National family health surveys (NFHS), various issues of economic review and economic survey, World Bank development reports, Human development reports, data based on sample registrations system, Department of Family Welfare Programme in India and hospital records and panchyath development reports etc used for this exploration.

7. Major Findings of Rural Study

The overall improvement in health is also reflected in the nutritional status of children. The lowest rates of underweight and anaemia among children are now recorded in Kerala. Schools in Kerala reflect the socio-economic divide more than any other institution. With a modest outlay, and political will the school lunch program in Kerala can be made a model one, which ensures that all children attain their full genetic potential (Aravindan.et.al 2004). There is considerable variation in the prevalence of malnutrition between income groups, among castes and with gender dimensions. A multivariate analysis of the effects of selected demographic and socioeconomic factors on child malnutrition indicates that the strongest predictors of child nutrition in rural Kerala are child's age, child's birth order, mother's education, and household standard of living.

The important determinants of nutritional status are sex of the child, child's age, birth order, food consumption pattern, parental income, morbidity pattern, effectiveness of schooling, effectiveness of mid-day meal programme, access to health care, incidence of poverty, household standard of living, parental education, maternal nutritional status, place of residence, accessibility of safe drinking water, sanitary facility etc. Based on these explanatory variables, consider nutritional status is dependent variable and constructed regression model.

The important findings of the study are reveals that parental income has a positive effect on both long term and short-term nutrition, as well as on the other inputs that enter into the production of nutrition. The education of the father, however, did not prove significant. Child's age is a major determinant of whether it will suffer from acute malnutrition and the nutritional status is strongly correlated to maternal nutritional status. School's mid-day meal programmes also influenced children's nutritional status and nutritional deficiency was facing majority of scheduled castes and scheduled tribes' families. Nutritional deficiency among children adversely affects children's overall health, educational attainment, physical and mental development.

Kasargod district is a true representation of the rural picture of Kerala and it is an exemplary district, which explains the backwardness of Malabar. Though Kerala is in the forefront of all health and nutritional indicators compared to other states in India, the northern most district of Kerala suffers severe handicaps in the health and nutritional arena. It reveals that 35 percent of schools going students face wasted and underweight. 42 percent of the school going children in Kasargod, suffer severe or moderate anaemia problem and 46% of school going children (6-9 years) was facing teeth carries and deficiency of vitamin A etc.

Age wise classification of the weight-for-age of sample children in this study area, 59.16% of children are normal category, 21.66%, 13.33%, 5.83% are mild, moderate and severe malnutrition category respectively. Age wise classifications of height-for-age of sample children in study area, showed 19.16%, 10.83%, and 4.16% are mild, moderate and severe malnutrition category respectively. Religion wise classification of weight-for age and height-for-age of sample children in Kasargod,

wasting and underweight was high reported in SC/ST children. Income basis classification reveals that moderate and severe malnutrition problems are reported in low-income families especially daily wageworkers' families.

The important reasons for backwardness and malnutrition among children in Kasargod district are ineffective government policies, lack of basic amenities including safe drinking water, the acute scarcity of doctors and other public health professionals in rural areas especially in Malabar, ignorance of all political parties on the developmental issues of Malabar. The lowest rates of underweight and anaemia among children are now recorded in Kerala. These achievements have not been uniform across all sections of society. For further improvements to occur there is need for targeted interventions aimed at the needy sections of society. In this situation we need a compressive health and nutrition policy to weaker sections of the community especially children's population.

8. Conclusion

Child malnourishment in India especially Kerala can be improved dramatically with the active participation and prioritization of this issue by the government and international organizations. Education about nutrition, household food security, health services and proper childcare is essential for the general population to improve the state of children's nutrition today. The government needs to spend more money on quality nutritional programs in order to improve the state of malnutrition and therefore health services, education for females and poverty. The proper immunizations against disease and illness should be offered to all children and an increase in health care will help to decrease child malnourishment. As a summary of the issues, the lack of political commitment and financial resources do not appear to capture the Kerala situation very

well. Another interesting area of comparison concerns vulnerability to poverty and food insecurity versus a more static focus on improving programmes targeting those below the poverty line (BPL). Effectiveness in reducing child malnutrition is closely linked to improvements in access to, and reach of, health services, care of children, and nutritional status of women. The government needs to spend more money on quality nutritional programs in order to improve the state of malnutrition and therefore health services, education for females and poverty. Improvements in food availability and in women's education are the keys for future progress in child nutritional status and priority should be given to strengthen health environment.

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