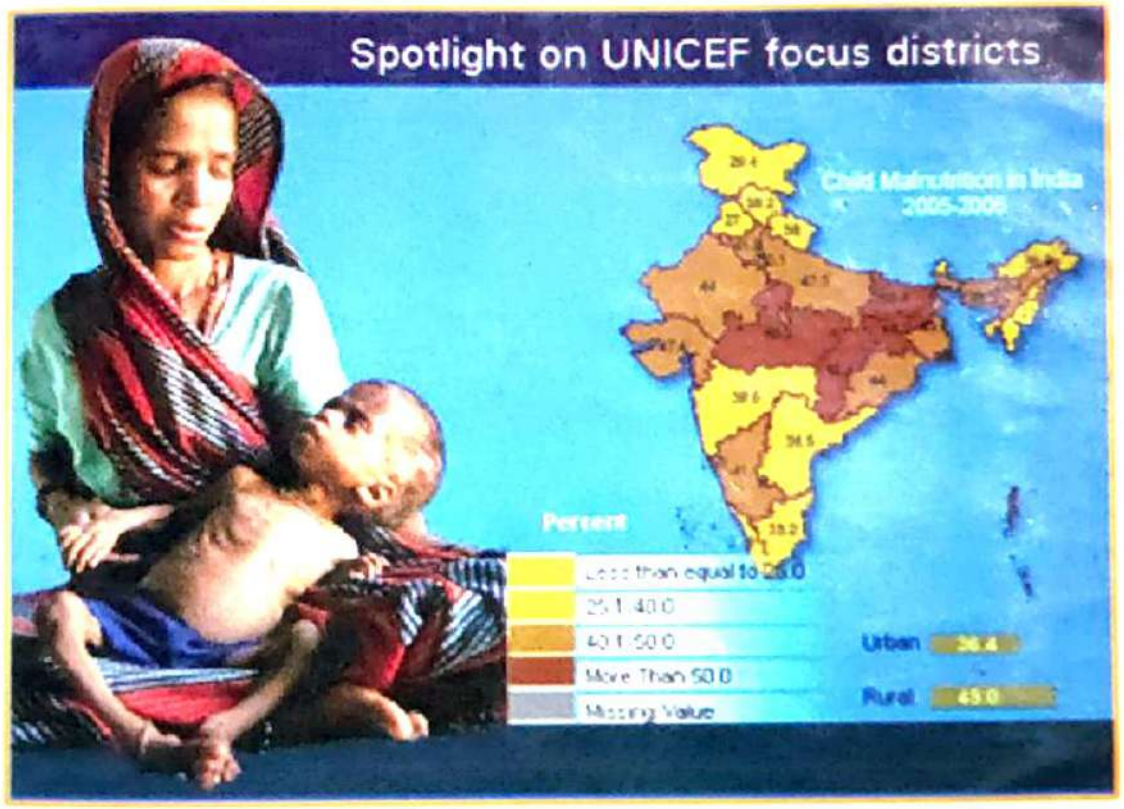
Child Malnutrition as a Poverty Indicator :
An Evaluation in the Context of Different Development Interventions in Odisha

An Anthology of Papers Presented at the
UGC Sponsored State Level Seminar



Organised by :

DEPARTMENT OF ECONOMICS

B.B.COLLEGE, BAIGANBADIA

MAYURBHANJ, ODISHA

In Collaboration with :

Seemanta Mahavidyalaya, Jharpokharia, Mayurbhanj

Child Malnutrition as a Poverty Indicator : An Evaluation in the Context of Different Development Interventions in Odisha

An anthology of Papers presented at the UGC Sponsored Seminar held on 3rd and 4th February, 2012

Editor :
Srinath Samal
Shankarshan Nayak

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MESSAGE

I cannot but feel proud that the Departments of the College have been organising UGC Seminars and bringing out the Proceedings very successfully one after another. I hope, the Department of Economics will bring out a valuable compilation of the State Level UGC Seminar adding glory to the Institution.

I wish all the success.

(***P. K. Rout***)
PRINCIPAL

Acknowledgement

The Department of Economics, B.B.College, Baiganbadia, Mayurbhanj is highly grateful to the Joint Secretary, UGC Eastern Regional Office, Kolkata for kind approval of the proposal and granting funds for organising the State Level Seminar on ***"CHILD MALNUTRITION AS A POOVERTY INDICATOR:AN ANALYSIS IN THE CONTEXT OF DIFFERENT DEVELOPMENT INTERVENTIONS IN ODISHA"*** on 3rd and 4th February, 2012.

We express our deep sense of gratitude to esteemed Principal, Mr Pradeep Kumar Rout for his valuable guidance. We are also grateful to the Principal and Staffs of Seemanta Mahavidyalaya, Jharpokhria for their collaboration in organising the Seminar.

We are thankful to our guests Prof. Manmohan Das, Ex-Reader in Economics ,M.P.C. (Auto) College, Baripada,Dr.Sudhakar Patra,Reader in Economics ,Ravenshaw University ,Cuttack, Dr.(Mrs) Sanjukta Das, Reader in Economics, Sambalpur University, Dr. (Mrs.) Kabita Kumari Sahu, Lecturer in Economics, North Odisha University, Takatpur, Baripada, Dr. (Mrs) Minati Mallick, Lecturer in Economics, North Odisha University, Takatpur, Baripada, Prof. Anil Kumar Kar, Principal, Seemanta Mahavidyalaya, Jharpokhria, Mr. Gangadhar Behera, Reader in Economics, Dr. Tarun Kumar Ojha, Lecturer in Economics, Seemanta Mahavidyalaya, Jharpokhria, for their kind presence and participation in the Seminar.

Lastly, we are thankful to the Staffs, Colleagues, Students and well wishers of the College in organising the Seminar and publishing the Proceedings most successfully.

Pradeep Kumar Paira
HOD, Economics
Organising Secretary of the Seminar

Editorial ... ...

Just a Little for Poverty !

Poverty as a feeling of deprivation has different connotations. Taking into account the income as per Head count ratio (HCR), poverty fails many times to reflect the people's deprivation in health and education. Very often, the people, in order to earn more (and to cross the poverty line), not only sacrifice their own leisure, but also fail to devote time to the health and nutrition of the family members. The consequence is mostly felt on the children who are very much vulnerable to diseases and infection. Economic reforms introduced by India in the 1990s have increased the growth rate substantially. The high growth of GDP even at the rate of 7.7% during 2011-12 failed to reduce malnutrition among women and children. Child malnutrition is about 46% according to the NFHS III data. Malnourished children in general become the malnourished adult with less capability and there is inter-generation transfer of malnutrition and poverty.

Odisha is one of the underdeveloped and poor states of the country. The percentages of underweight, stunting and wasting among children in the rural area of this State are 45.7, 39.1 and 19.4 respectively (NFHS-III). It is at the top in rural poverty ratio i.e., 46.8 % (based on uniform recall period) as per 61st NSS round. There is inter-District

disparity in poverty ratio. Tribal dominated districts are found to be with higher poverty ratios compared to others (Dubey and Haan). Mayurbhanj is one of such districts with 56% of population belonging to Scheduled tribe. Under nourishment among the population particularly among the women and children in this District is very high. Mayurbhanj District has the highest proportion of malnourished children followed by Balasore, Koraput and Dhenkanal (Directorate of Health Services, Govt. of Odisha)

In this context, the attempt of the Department of Economics, B. B. College, Baiganbadia through the organsation of UGC Sponsored State Level Seminar entitled "Child Malnutrition as a Poverty Indicator: An Evaluation in the Context of Different Development Interventions in Odisha" will definitely go a long way in alleviating the suffering of such unfortunate children and women.

Srinath Samal
Shankarshan Nayak
Editors

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POVERTY AND MALNUTRITION INTERLINKAGE : AN ANALYSIS IN THE CONTEXT OF POLICY INTERVENTION

Sanjukta Das

Every society irrespective of its caste, culture, religion and economic development, wants its children to be healthy with a long life. There are economic and cultural rationalities for this. Children are considered to be the assets for the parents, especially during their old age. Income spent by parents on rearing the children is looked upon as the insurance fee for uncertainty of income earning during old age. They yield income and other utilities like provision of care etc. for their parents. In the past when medical science was not developed much, morbidity and mortality rates were high, fertility rate was high to satisfy the intense demand for more living sons. This was facilitated by the low cost of rearing. Becker (1960), Liebenstein(1974) have discussed these in their models to explain the household's demand for optimal number of children. At present with the advancement of medical science child mortality rate has declined, with less number of child birth, parents are assured of their living children. Institutional insurance facilities have reduced the old age insurance role of children. So, parents are now satisfied with less number of (but) healthy, well nourished and educated children (resulting in low fertility rate). These children can increase the social and economic status of the parents, may increase their confidence. When children are found malnourished, thin, short and suffering from different types of preventable diseases, it is assumed that

the respective households are unable to provide facilities to prevent child malnourishment. These households may therefore, be categorized as poor/deprived ones. UNDP in its multi dimensional poverty measure (popularly known as Human poverty index or HPI) takes care of child malnutrition as an indicator of economic deprivation (UNDP HDR, 1997 onwards) along with the other measures like public provision of health care and safe source of drinking water (see UNDP HDR, 1997 p19).

In the poor underdeveloped countries, to me, child malnutrition is both an indicator of inadequate public and private provisioning. In these countries, children's consumption of nutritious food depends not only upon the household's provision but also on the Government's provision of supplementary nutrition through (i) ICDS and Anganwadis (to children, pregnant women and nursing mothers), (ii) mid day meals (MDM) to school children of 6-10 years, (iii) cheap supply of food grains under PDS. It is expected that the poor households' inadequate provision of nutrients would be compensated by the public provision. With economic growth a general household is expected to have more resources for its children's nutrition; the state with more revenue to undertake public expenditure including the expenditure mentioned above. The children of the poor households who were unable to reap the benefits of economic growth in terms of higher income may be benefited from (or compensated by) the Government's provision. Thus, with economic growth, the percentage of malnourished children is expected to decline and it may decline at a higher rate than the economic growth rate (if the households have a priority for children's nutrition). If this is not taking place,

then there must be some problem either in economic growth and its distribution aspect or in the public provision or in both. The first one indicates problem in the sources of economic growth i. e., how economic growth has occurred. Is it through increased investment financed by increased saving and reduced consumption of both the adult and the children; or is it through more hard work and reduction of time for leisure and child care; or benefits of growth is highly skewed ? The second one may be caused by inadequate public provision due to misplaced priority or poor implementation arising from accountability failure and corruption. In all these cases it can be said that there is economic growth without economic development. There will be high level of poverty in spite of the high economic growth. Thus, from that point of view child malnutrition is an indicator of poverty.

Concept: Malnutrition as a medical term refers to a particular health condition caused by infection or improper diet. It is a state of poor nutrition which can result from insufficient or excessive or unbalanced diet. It can also be caused by the poor absorption of food and excessive loss of essential food nutrients. It manifests itself as stunting, underweight and wasting among children, and deficiencies of micro-nutrients, such as vitamin A, iron, iodine, zinc and folic acid etc. Malnutrition does not need to be severe to pose a threat to survival. Worldwide fewer than 20 percent of deaths associated with childhood malnutrition involve severe malnutrition. More than 80 percent involves only mild or moderate malnutrition.

Poverty and malnutrition link (based on past studies)

Osmani(1997) has long back has recognized the link between poverty and under nutrition. To him, under nutrition is caused by poverty or inadequate resources; and under nutrition causes

low labour productivity resulting in low income and poverty and the circle is completed. According to him, malnutrition is a broader term which includes under nutrition as well as malnutrition caused by the poor nutrient absorption capacity. However, to us the latter is also caused by poor health in the past. Therefore we use both the terms interchangeably. There are other studies like Behrman and Deolalikar (1988), Strauss and Thomas (1995) who also studied how low income constrains the availability of adequate nutrient intake and causes malnutrition. Haddad, et al. (2003) also stated that poverty is the crucial determinant of hunger and under nutrition. With higher per capita income the household can exert stronger effective demand for essential private consumption goods, including more and nutritionally better food. Secondly, higher income (GNI) also means higher Government revenues and expenditures. These expenditures finance public investment and consumption in health and nutrition related services, which generate a positive effect on child nutritional status. Contrary to this, Behrman and Deolalikar (1987) said that nutrition is unlikely to improve with income. According to them, "as income increases, a large proportion of food expenditure is spent on non-nutrient food attributes such as diversity of products consumed, freshness, taste, convenience foods which save their time in their preparation and others". They point out that the nutritional status of a household partly depends on its nutrient intake. It also depends on other privately and publicly provided goods and services.

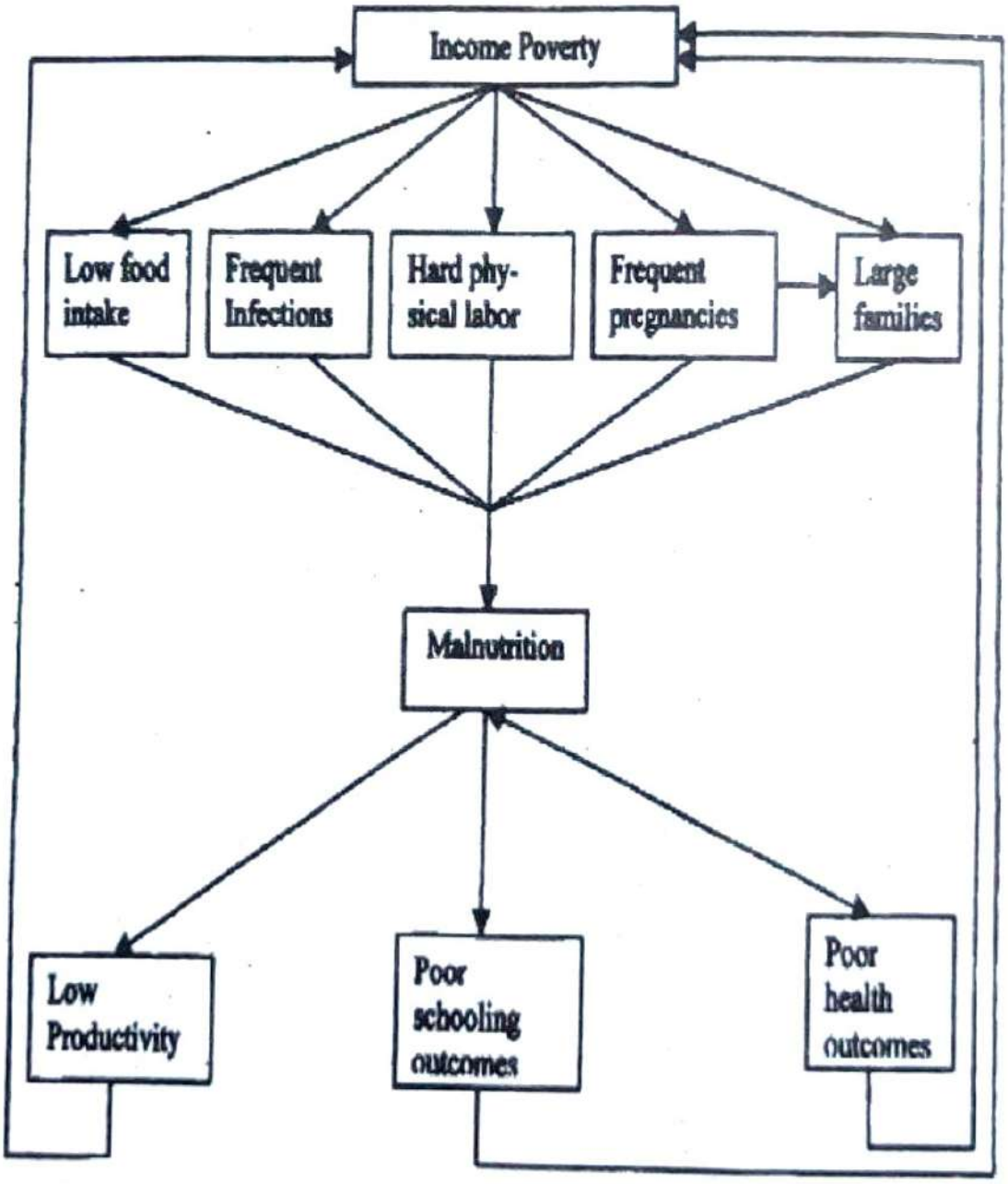
UNICEF (1990) in "Strategy for improved nutrition of women and children in developing countries" and subsequently Engle et al (1997) in "Care and nutrition: concepts and

measurement" analysed the immediate, underlying and basic determinants of nutrition. According to these studies, the basic determinants of nutrition are the potential resources (the natural environment, access to technology, and the quality of human resources), the factors (political, economic, cultural, and social) which affect the utilization of the potential resources and how they are translated into resources for household food security, care for mothers and children and access to services. Lack of household food security, low care for mothers and children and inadequate access to services may cause inadequate diet and poor health status (which may cause low absorption capacity). Figure-1 depicts this relationship. Thus, here, lack of resources (including income) along with the prevailing political, economic, socio-cultural condition of the economy are visualized as the determinants of under nutrition.

Bhagwati and others (2004) using the chart given below, showed the vicious cycle of income poverty and malnutrition. According to them income poverty manifested in low food intake, frequent infections etc. cause malnutrition which in turn results in productivity loss directly as well as indirectly; the former is relating to physical work and the latter to cognitive development and schooling. Malnutrition also involves loss of resources owing to the curative healthcare expense. All these losses further cause low income or intensify the income poverty. We can also visualise the interactions of poor health condition on schooling and poor schooling alongwith poor health condition can cause low skill formation and physical activity, both causing low earning and high income poverty.

Figure-2 ; Source: Adopted from World Bank(2002)

Relationship Between Nutrition and Poverty



Dasgupta (1995) mentions, under nutrition is critical to understanding poverty traps in India. This literature reverses the causation between poverty and under-nutrition, arguing that under-nutrition causes poverty but not necessarily the other way around. Lipton (2001) endorses this view and argues that **under-nutrition might make the poor unable to take advantage of welfare programs such as food for work since they are too weak to work hard.** The poverty trap argument is built around the **efficiency wage hypothesis**, and claims that nutrition-based poverty traps exist and help explain the persistence of poverty in agrarian economies. (Gaiha 1998).

Empirical Works

Radhakrishna and Ravi (2004) studied the link between poverty and under nutrition. Poverty estimates of NSS 55th round and children's underweight data of NFHS -II were used for the purpose. The model is estimated separately for underweight, stunted and wasted categories of malnutrition. The standard of living index, one of the independent variables, is chosen to serve as a proxy for income level of household. The study reveals that a 10 per cent reduction in poverty reduces under-nutrition by 3 per cent and severe malnutrition by 7 per cent. They found that adult malnutrition is largely a result of poor diets and infection during childhood. The risk of malnutrition was found higher among the children whose mothers suffered from chronic under nutrition. Mazumdar (2010)[1]

using the state level data, studied the association of malnutrition among children with poverty and per capita income of the states of India. States with higher levels of

average poverty were found suffering from a higher extent of malnutrition among children. The level of economic development in the states also followed a similar pattern, i.e., developed states were found with lower levels of malnutrition. He also found that the poor and the vulnerable sections of the population shoulder the disproportionate burden of child malnutrition in India.

Scenario

The prevalence of underweight in children under five in developing countries was 37.4 percent in 1980.By 2000 this had dropped to 26.7 percent(ACC/SCN 2000).Never the less 150 million children in the developing world remain underweight and 182 million remain stunted. Worlds' child malnutrition under five (1995-2000) suffering from underweight is 28 percent, wasting 10 percent, and the percentage of stunting is 32 (Mehrotra, 2006).According to the State of the World's Children, 2009 the percentage of underweight is 46, similarly for wasting and stunting it is 19 and 38 respectively. Nearly half of the world's hungry and malnourished children are in India; in fact they number more than those in the entire sub-Saharan Africa. In every minute four children are dying in India because of starvation. Other preventable deaths from diarrhoea, malaria and unsafe deliveries are an altogether separate record in mortalities. It, therefore, comes as no surprise that India is among the most dangerous places in the world for a child to be. And unlike war-torn countries, **it is the violence of poverty that makes the Indian child so vulnerable.**

According to NFHS-3, among the children (below 5) 43 percent were underweight, twice that of Sub-Saharan Africa.

in the urban area the percentage is 36.Similarly the percentage of stunting children was 48 for the country who are considered to be chronically malnourished and 19 percent were found to be wasting or severely malnourished. More than 6000 Indian children below 5 years die every day due to malnourishment or lack of basic micro nutrients.

Recently Naandi Foundation, a non-profit organization in Hyderabad published a report, known as HUNGAMA Report, 2011 reveals that 42% of children below 5 in the 100 focus districts of India are malnourished, and 59% are stunted. Of the children suffering from stunting, about half are severely stunted; about half of all children are underweight or stunted by age 24 months. Though malnutrition has decreased from 53% (in 2004) to 42%, it is still chronic.

In Orissa there is reduction in stunting percentage from 45 percent (NFHS-1) to 38 percent (NFHS-3).Similarly the percentage of wasting has reduced from 23 percent to 19 percent that of underweight from 52 percent in NFHS-1 to 44 percent in 2005-06.now. Naandi foundation has studied six districts (Cuttack, Gajapati, Kandhamal, Koraput, Malkangiri and Rayagada) of Orissa and found that the situations are severe in the districts of Koraput and Malkangiri; In the former case percentage of underweight children is as high as 68.86!

Poverty and Malnutrition in Orissa

The state, Orissa with a very high level of poverty and under nutrition is regularly being surveyed by National Nutrition Monitoring Bureau (NNMB) since 1975. The three National Family Health

Surveys also provide data Orissa's level of malnutrition. As per the first NNMB survey, in 1975 Orissa had underweight percentage 56.6% (lowest among the NNMB states) which declined to 54.4% (in2001) while in state like Kerala and Tamil Nadu it declined sharply (from 56.8 to 28.8% in Kerala and from 59.6 to 39.0% in Tamil Nadu) during the same period.

Using the available information on poverty and child malnutrition an analysis of these two is done. Table-1 presents the malnutrition (child underweight) and poverty (i.e. HCR) of different years. In the absence of matching year we took the years very close to each other. Similarly in the absence of data of malnutrition by same organization for the required years we use the data of different organizations of the required years. It is observed from the table that poverty is consistently declining with the passage of time (may be owing to the economic growth and the poverty alleviation programmes of the government). But the percentage of child malnutrition does not show such trend. It is rather fluctuating systematically (Of course in the absence of the data for more number of years this can not be said emphatically). Another important fact is while

Table-1: Poverty and Malnutrition over Time in the rural areas

Malnutrition (In %) among children below 5 Poverty *

(In percentage)

Year	Under weight = -2 SD	Year	HCR (Rural)
1975	56.6 **	1973-74	69.07
1988	57.3 **	1987-88	59.14
1992-93	53.3 @	1993-94	49.0
1998-99	55.5 @	1999-00	48.03
2005-06	42.3@	2004-05	46.8$

Source:*: Planning Commission data based on NSSO rounds, **: NNMB Survey,@: NFHS-I, II &III; and NFHS I data is of (R+U)children below 4years; and II data of rural children below3 years. $: using URP consumption data poverty is reduced by more than 20 percent points during the time of 25 years; malnutrition has declined by only 2 percent points. While states like Tamil Nadu has successfully reduced its malnutrition through Government initiative, Orissa has failed to do so. Moreover,

Lack of proper monitoring (of Tamil Nadu type) and many loopholes in the programme implementation in case of ICDS in Orissa are halting Orissa's progress in the reduction of child malnutrition. It has now the highest malnourished state among the NNMB states.

Cost of malnutrition

The costs of malnutrition, both human and economic, are well recognized. Studies reveal a very high human as well as economic cost of malnutrition to the societies particularly to the low-income countries. Pelletier et al (1994) estimated 2.8 million child deaths each year. 51 percent of this child deaths in this low-income Asian countries are owing to malnutrition Estimates of the global burden of disease in 1993 (WB 1993) attributed 20-25 percent of the burden of diseases among children to under nutrition. Among the studies relating to economic costs of malnutrition, Horton (1999)'s, Alderman et al. (1995)'s and Ross and Horton (1998) are important findings in this regard. Horton (1999) summaries the estimates of labour productivity loss arising from the various types of malnutrition. It is stated that as high as 17 percent of loss of labour productivity accrue owing to iron deficiency. Protein-energy malnutrition (PEM) and iodine deficiency each causes 10 percent reduction of labour productivity individually.

Need for Intervention

The cost of malnutrition being very high positive intervention is urgently called for. Haddad, (2002) stated that "Nutrition is an excellent investment. Improved nutrition empowers people and it empowers communities". In doing so it fuels the development process and leads to poverty reduction. Better nutrition improves intellectual capacity, and improved intellectual capacity increases an adult's ability to access other types of assets that are essential for increases in labour productivity. An adult who is more productive has a larger set of available livelihood options, which raises lifetime private earnings in a way that is robust to external shocks such as disease, unemployment, or natural disaster. In addition, improved nutrition status from conception to 24 months of age reduces private and public health care expenditures in ways that reverberate throughout the life cycle. The intergenerational cycle of poverty is more likely to be broken when babies get an adequate nutritional head start. He stated that well-nourished mothers are more likely to give birth to well-nourished children who will attend school earlier, learn more, postpone dropping out, marry and have children later, give birth to fewer and healthier babies, earn more in their jobs, manage risk better, and be less likely to fall prey to diet-related chronic diseases in midlife.

In this context it is of urgent necessity for Orissa to take this matter seriously and reduce malnutrition among its children to have better future.

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CHILD MALNUTRITION IN ODISHA & THE ROLE OF ICDS

Dr. Tarun Kumar Ojha

I. Introduction:

Placed in the Millennium Development Goals, the eradication of extreme poverty and hunger from the globe, at least half of the proportion of the people who suffer from hunger by 2015, has drawn the attention of policy makers all over the world. However, there is hardly any institutional consensus on what poverty is and how it should be measured. Among a set of poverty indicators child malnutrition can be considered as one indicator. Child malnutrition has also long been accepted as a consequence of poverty. As per a study conducted by Asian Development Bank higher rate of malnutrition is found in areas with chronic wide spread poverty. Marginal dietary intake is one of the major causes of malnutrition and marginal dietary intake depends on a variety of factors like food security, clean water, and knowledge on sanitation compounded by proper care, gender equity, health status and good environment. As defined by doctors a child between 2-3 yrs of age failing to get food energy intake of 1300 calorie per day is taken as malnourished.

Measurement of child malnutrition or nutritional status involves three methods such as

i. Anthropometric indicators

ii. Bio chemical indicators

iii. Clinical indicators

Out of these three anthropometric measurements is a common and easy way to access health and nutrition status. Anthropometric indicators are normally related to body size and composition. Four variables such as age, height, weight and gender are essential to measure a child's malnutrition status.

In anthropometric measurement the nutritional status of the child can be expressed as under weight, stunting and wasting. Weight for age is a simple index to tell if the child is normal, over weight or under weight, Similarly Stunting is a measure of linear growth taking the height of the child to his age. A child who is not as tall as expected may be stunted. This tells that the child has not grown to its full potential. The third measurement wasting can be calculated without knowing the age of the child on the basis of weight for height or what is generally known as current body mass.

II. Status of child MALNUTRITION:

After six decades of India's independence, 47 per cent of India's children below the age of three are underweight(Shiva Kumar, A.K,UNICEF)The World Bank puts the number at 50 millions out of global estimate of total146 million. India has the largest number of malnourished children in the world. Even the rate of malnutrition is worse than that of African average. It is widely known that small African countries have highest rate of malnourished children in the globe India's position is worst together with Nepal and Bangladesh. Even the best state of India, Kerala has a rate of child malnutrition comparable to that of Africa's average.

Table-1 (Trends of child malnutrition in India)

Malnutrition parameter	1992-93 NFHS-1 (0 -4yrs)	1998-99 NFHS-2 (0 -4yrs)	2005-06 NFHS (0-3yrs)
Stunted (height for age)	52.0	45.5	38.4
Wasted(Weight for height)	17.5	15.5	19.1
Underweight(weight for age)	53.4	47.0	45.9

Source: NFHS Survey, three rounds

It is a matter of concern that the rate of malnutrition defined as underweight children related to an internationally accepted reference population has not declined significantly over last 15 years. As shown in the table child malnutrition was 54 per cent in 1992-93, 47 per cent in 1998-99 and reduced to 46 per cent in 2005-06(NFHS Survey).With rise in population the number of malnourished children have increased.

An inter-state comparison of child malnutrition rate reveals the fact that in India nearly 46 per cent children are underweight. Some of the states like Bihar, Chhatisgarh, MP, and Jharkhand lie above the national average. Greater percentage of children in these states suffers from CED Chronic energy deficiency. In spite of the fact that per capita consumption of cereal is higher in Odisha it has been put in the category of severely food insecure regions.

In Odisha nearly 48 per cent of women suffer from nutritional deficiency. The number is higher in case of illiterate women. Based on anthropometric study on weight for age measure, 20.7 per cent of children below 0-3 years of age in Odisha are severely underweight and another 54.4

per cent are moderately underweight. Simillarly as per weight for height for age standard 17.6 per cent children suffer from chronic under nutrition of severe type and another 44 per cent suffer from moderate type of child malnutrition.

The status of Odisha's child malnutrition as compared to that of India shows a better picture. The per cent of underweight children below 3 years was 44 per cent against 46 per cent at national level. The per cent of wasted children is 19 per cent which is same as the national average. In the same way, the stunted children below 3 years are 58 per cent in Odisha which is equal to that of India.

According to NFHS-3 data 54% of children in the state are breast-fed within one hour of birth against only 23% in at national average. The number of children receiving services by Anganwadi Centres is 66 per cent which is just twice of the national average (33%).

Table-2 (Child malnutrition in Odisha)

Indicators	Odisha	India
Underweight(0-3yrs)	44%	46%
Wasted(0-3yrs)	19%	19%
Stunted(0-3yrs)	38%	38%
HH using iodized salt	40%	51%
Breastfed within one hr of birth	54%	23%
Below 6 yrs receiving health service at AWC	66%	33%
Children weighted (0-59 months)	56%	16%
IMR	69%	55%
MMR/000,000 live birth	69%	55%
Anemic(90-35 months)	74%	79%

Source: NFHS-4 (2006)

III. Role of ICDS in reducing Child malnutrition:

A number of initiatives have been taken to tackle the problem of malnutrition. In India in general and Odisha in particular Dept of Women and Child Development, Rural development, Health and Family welfare, Civil Supplies, Information and Public Relations, Panchayati Raj and other departments have tried to fight against this problem through various programmes.ICDS Integrated Child Development Services was launched in 1975 as one of the most unique programme in the world to tackle malnutrition and ill health of mothers and children.

The basic Objectives are to

- Improve nutritional and health status of children in 0-6yrs.
- Lay foundation for physical and psychological development of a child
- Effective coordination of policy and implementation among various departments
- Empower mothers to look after normal health and nutritional needs of children.

ICDS provides a package of services like-

- Supplementary nutrition
- Immunization
- Health check up
- Referral services
- Pre-school and non formal education
- Nutrition and health education

ICDS is a well planned scheme to provide a solution to the problem of malnutrition. In supplementary nutrition attention is to be given to provide supplementary feeding,monitoring the growth of children and steps to

control nutritional anaemia and vitamin A deficiency among mothers and children.300 days of supplementary feeding support is to be provided to children of low and disadvantaged communities.

Another growth monitoring programme by ICDS conducts regular records of weight every quarterly maintaining a Growth-for age card to detect child's growth.

Immunization of mothers and children are conducted to prevent diseases like diphtheria, tetanus, tuberculosis, measles by six vaccines. This is very effective to control maternal and neonatal mortality.

In health checkup Programmes antenatal and postnatal care services are being provided through ICDS by Anganwardi Centres, PHCs.

In referral Service activity a sick or malnourished child can be referred to PHC or Sub Centre for better care.Non formal Pre School education is an important component of ICDS aims at providing joyful play way daily activities for children for 3hours a day at Anganwadi centre. This is a programme for 3-6 years of children giving inputs for optimal growth of a child. it also provides a platform to motivate parents and community about child's health and nutrition.

In Odisha the ICDS is the most important nutritional support programme focus in regions with high incidence of poverty. ICDS deals with the children in the age group of 0-6 years,Pregnant women and lactating mothers in both APL and BPL category . Nutrition and Health education is another activity initiated by ICDS aims at capacity building of women who can take care of their own health as well as that of children and family members.

With the above activities and funded by both centre and state the ICDS is working in all the stares to safeguard children against malnutrition and rising mortality.

VI. PROGRESS OF ICDS IN ODISHA:

Since 1975 till today ICDS has made phenomenal progress in Odisha in terms of expansion of area of operation. Now there are 196 rural, 118 tribal and 12 urban projects operating all over the state with 60918 anganwadi centres and 4819 Mini Anganwadi Centres(2008-09).The guidelines for the selection of AWWs and AWHs has been simplified with a view to filing up the vacancies with immediate effect. The ICDS programme has been universalized to include all pregnant/lactating mothers and children below six years of age irrespective of the categories (APL/BPL).

ICDS has adopted various packages of services to cover more beneficiaries. In 2001-02, number of beneficiaries under SNP was 24.5 lakhs that increased to become 46.8 lakhs in 2008-09. ICDS has taken various steps to reduce child malnutrition. The weighing efficiency of children in the age group of 0-3 years have been increased from 89.2 per cent children in 2001-02 to 95.5 per cent children in 2008-09 as indicated in the monthly progress report of ICDS. The percentage of children in grade –II to grade –IV has declined from 25.8 per cent in 2001-02 to 17.2 percent in 2008-09.

The National Family Health Survey conducted by Government of India in 1992-93(first round), 1998-99 (second round), 2005-06(third round) reveal improvement in some nutrition and health related indicators during this period. The state of Odisha has a better picture than all India average.

Apart from the state initiatives the community and family have important role to fight out the malnutrition among children.

VII. CONCLUSION

Poverty is not the only cause of child malnutrition. The food requirement of an infant is within the capability of

every family. What is lacking is knowledge about infant diet and awareness. Societal behavior towards girl child is to be changed. The expectant mother are to be given due attention by the family members so that she can give birth to a healthy child. The attitude of the mother in laws towards the daughter in law in a traditional Indian Society is to be changed. Early marriage and carrying a child at early age tell upon the health of both mother and child. This should be avoided.

Women education and their control over resources help in encouraging participation of women in decision making. This is highly imperative as it enables a woman to take decision about marriage at right age, child bearing, and provision of proper nutrition to child, expenditure on health etc. Hence, the menace of child malnutrition as mentioned in the MDM goals needs to be reduced to the minimum. Fighting child malnutrition is not a family affair rather seeks combined efforts from the parents and community to policy makers and executers to ensure healthy children for a strong nation.

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MALNUTRITION AND THE ROLE OF ICDS IN INDIA

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Introduction

Malnutrition is a widely prevalent problem in India. According to the National Family HealthSurvey , more than half (53%) ofchildren below four years of age are undernourished. In 1998, 29.1% children between1-5 years of age suffered from moderate and 12.3% from severe under-nutrition.Nutritional adequacy is one of the key determinants of the health and well being ofthe children. Under-nourishment not only retards physical development but also hampers the learning and cognitive process,leading to sluggish educational, social and economic development.170 million children under six years of age constitute 17.5% of India's population(Census: 2001). One in three of these children is born with low birth weight and is thus denied the best possible start in life.The high incidence of low birth weight compounded with inadequate care and restricted access to health services translates into high rates of child malnutrition and threatens the process of healthy development, culminating in a high infant mortality rate. India has a high IMR of 90 per 1000 children, with Orissa top with 96.7 IMRfollowed by MP (89.5), UP (84.4) and Rajasthan (81.2) (Registrar General: 2001).

ICDS, a major programme to tackle the problem of malnutrition and the ill health of mothers and children, was initiated in 1975, following the adoption of a National Policy for Children. This programme is now the single largest programme for the country's children with 4,348 operational

ICDS Projects (GOI: 2001-02). The benefits of most development programmes are usurped by the better off sections, depriving the marginalised. This appears to be reflected in the implementation of ICDS as the mothers and children of scheduled castes and scheduled tribes and those in backward areas, are much more vulnerable. The IMR among SCs and STs was found to be 83 and 84 respectively as opposed to 68 per 1000 live births for those of non-scheduled castes (Barik and Kulkarni: 2004). Backward regions all over the country have high levels of undernourished children. Even those living in relatively developed states lag behind in providing adequate nutrition to children but mainly because those regions are chiefly inhabited by the most vulnerable sections of the population (Sinha: 2005).

In this context this paper aims to explore the extent of under-nourishment among children and to look into the functioning of ICDS in ameliorating malnutrition and educating mothers on health and nutrition issues in areas dominated by scheduled castes/ scheduled tribes. The paper is organized in three sections. The first section assesses the level of the prevailing under nutrition among the children, the second section looks into the functioning of ICDS and the third section deals with the extent of awareness on health and nutrition among mothers.

Child under nutrition is a consequence of the complex interactions of multiple determinants. One way to conceptualize these interactions is with the use of a framework that traces the causal pathways of under nutrition through different levels – the most immediate, the underlying, and the basic causes. The first level is composed of the most immediate causes of malnutrition and highlights the

importance of both food intake and the absence of infection for improving child nutritional status. Inadequate dietary intake and infections create a vicious cycle that is responsible for much of the high morbidity and mortality among children in developing countries. On the one hand, when children do not consume enough, immune response islowered, rendering them more susceptible to infectious diseases. On the other hand, ill children deplete their nutritional stores and are in poor health because of reduced intake,poor absorption of nutrients and the increased demands of combating disease. While the weight loss associated with a single episode of infection can be made up if the diet is adequate, recurrent episodes of infection without sufficient food or inadequate recovery time is a primary cause of poor growth among children in developing countries. Thus, sufficient food intake is only one determinant of nutritional status.

The determinants of Malnutrition

The two immediate causes of malnutrition, poor dietary intake and infection, are closely linked to the three underlying determinants of nutritional status: household-level access to food, health resources (such as preventive and curative healthcare, and clean water and sanitation) and the appropriateness of the child care and feeding behaviors that caregivers adopt with respect to their children.

a. Household-level food security

This refers to physical and economic access to foods that are socially and culturally acceptable, and of sufficient quality and quantity. This is not necessarily assured bymacro-level food security, i.e. sufficient food production at national/regional levels. Food security at the household level is determined by a more complex array of factors than

agricultural production, including local prices (of food and other goods), income and an effective trade and transport infrastructure. Moreover, household food security is not in itself sufficient to assure that the nutritional needs of every child, and adult, living in a particular household will be met. Within each household, decisions are made as to the quantity and quality of food that is allocated to each household member. Together these factors constitute the concept of nutrition security,which is viewed as the outcome of good health, a healthy environment and good caring practices combined with household level food security. These factors may include the relative bargaining power of household members (which in turn may be related to their individual income, autonomy, gender and education) as well as other characteristics, such as health status of individual members. Consequently, the diets of individual children (or others) within the household may be deficient even though per capita caloric intakes are high and even when the household is food secure.

b. Access to health resources

Over-crowding, congestion, a shortage of clean water and inadequate facilities for the disposal of human excreta, waste water and solid wastes contribute to the development of gastrointestinal infections, such as diarrhea, and facilitate the spread of infectious disease. Crowding has been shown to be associated with an increased risk of infectious intestinal disease in children and tuberculosis infection. Poor water quality, a limited quantity of water, poor excreta disposal practices and poor food hygiene are all associated with increased diarrhea prevalence in infants. Moreover, good water, sanitation and hygiene conditions at the community level generate important externalities for

individual households in the community. It has been shown that good water and sanitation at the neighborhood level has a positive effect on the height of children in a particular household independent of whether that household itself has a healthy environment.

The presence of infection, and particularly communicable disease, is a direct cause of malnutrition. Consequently, efforts to prevent exposure to infection and cure disease should stand central to any strategy aimed at combating malnutrition,including regular deworming, the use of bed nets in malaria areas and access to regular and affordable health check-ups.

C. Adopting appropriate childcare behaviours

Providing appropriate care, which can mitigate the impact of the malnutrition-infection cycle for vulnerable groups such as children and pregnant and lactating women, means adopting child-care and feeding behaviors that direct available resources towards promoting child nutritional well-being. For example, adequate care during pregnancy and delivery can reduce the incidence of maternal death, miscarriage, stillbirth and low birth weight among infants. Likewise, adequate feeding of young children (initiation of breast feeding within an hour of birth, exclusive breast-feeding for the first six months of life and adequate and timely complementary feeding starting at 6 months while continuing to breast feed) is critical for child growth. Caregiver's time, their knowledge and educational status, autonomy, control over monetary and other resources, and their capacity to make appropriate caring decisions are often the key factors that determine how children (and pregnant women) are cared for.

Finally, the framework links these underlying determinants to a set of basic determinants which include the availability of human, economic and organizational resources with which to improve nutrition, the use of which is shaped by how society is organized in terms of economic structure, political and ideological expectations, and the institutions through which activities and resources within society are regulated, social values are met,and potential resources are converted into actual resources.

Level of Nutrition and Health Status

Level of Nutrition

Birth weights below 2,500 grams have been found to be very closely associated with poor growth, not just in infancy but also throughout childhood (Butt, et al:1996, Bavdekar et al:1994)). The proportion of babies born with low birth weight reflects the poor condition of women, particularly their nutrition, not only during pregnancy but also during their adolescent and childhood.Weight – for – age is a composite measure that takes into account both chronic and acute under-nutrition. The height – for – age index measures linear growth retardation. Children who are less than the standard measurement of the WHO estimates in terms of height – for – age are considered short for their age or stunted. The percentage in this category indicates the prevalence of chronic undernutrition, which often results from a failure to receive adequate nutrition over a long period of time. The study revealed that overall about 36.8% of the children whose height measurements were taken, were short for their age or stunted. 32.9% in the age group below three years and 40.8% in the age group 3 to 6 years measured below the standard height. This percentage

indicates the prevalence of chronic under nutrition among these children.Lack of nutritive food as the major reason for poor health. Lack of vitamin supplements, recurring illness, little age gap between children and pervasive poverty are other reasons given for poor health. The main reasons behind the poor health are lack of education, poverty, unhygienic environment and carelessness and superstition among parents.

Feeding Practices and Healthcare

The way an infant is fed, is crucial to growth in the early months of life. Initially a child of this age must be exclusively breast-fed. Breast milk not only meets the child's nutritional requirements but because of its inherent immunological properties, it also offers considerable protection against diseases. In the study area, 82% of babies were breastfed immediately after birth. In Rajasthan almost all babies were breastfed immediately after birth. In Orissa 81% and in Uttar Pradesh only 65% were breastfed immediately after birth. The rest of the mothers did it two days to a week later. 93.4% infants were provided with breast milk as the first food intake. The ideal duration of breastfeeding the child is up to two years of age. Almost 40% who breastfed their babies stopped breastfeeding before the child was two. In Orissa a large number of mothers (58.1%) did not breastfeed regularly up to two years.The reason given by 32% mothers for discontinuing breastfeeding before two years was the birth of the next baby. 30% mentioned that their child had started taking food so they stopped breastfeeding him/her and the rest of them were not aware of the importance of breastfeeding.

Efficiency of ICDS in Reducing Malnutrition

(i)Supplementary Feeding

Adequate food and good feeding practices are essential for the normal growth of a young child. Malnutrition is clearly linked to inappropriate feeding practices rather than just to food availability or household food security. ICDS/ anganwadicentres are supposed to provide supplementary feeding and inculcate good feeding practices among mothers. Supplementary feeding should be introduced at around 6 months of age in addition to continued breastfeeding up to two years of age. This attempts to bridge the calorific gap between the national recommended and average intake of children in low-income and disadvantaged communities. Supplementary food is also essential for pregnant and nursing mothers.

Orissa had the highest number of mothers with supplementary diets both during pregnancy and up to six months after delivery.In response to a query on the nature of the food provided, 93% mothers who received additional supplementary diet from the anganwadi centres mentioned that they received readymade cooked food. In Orissa 17.5% women received food cooked at the centre and 1.5% got some other kind of food. They were provided with this additional food once a week. The performance of anganwadicentres in providing supplementary food to children was better. Unlike the mothers, 100% children in three states got supplementary food. Children below three years of age were provided with take-home rations once a week or month whereas children aged 3-6 years were provided with cooked food at the centre daily. Each child should be provided with 70 – 75 grams of food per day and pregnant or nursing mothers should receive about 150

grams of supplementary food per day. However, the actual quantity provided was less than this.

(ii) **Growth Monitoring**

Growth monitoring is another important activity that is supposed to be operational at anganwadi centres under one of the many ICDS functions. It is important for assessing the impact of health and nutrition-related services and enabling communities to improve the same. As per ICDS guidelines, children below three years of age should be weighed once a month and children 3-6 years of age quarterly. Weight for age growth cards are supposed to be maintained for all children below 6 years of age. These help to detect growth faltering and to assess nutritional status. In all three states, it was found that the children's age for height was not recorded anywhere. However, at some centres, the Anganwadi workers did maintain a record of the children's weight. The growth charts were available at 72% of the anganwadi centres. More than 97% of mothers in Orissa confirmed that the Anganwadi workers maintained the growth charts. Each child should be provided with 70 – 75 grams of food per day and pregnant or nursing mothers should receive about 150 grams of supplementary food per day. However, the actual quantity provided was less than this.

However, at some centres, the Anganwadi workers did maintain a record of the children's weight. The growth charts were available at 72% of the anganwadi centres. More than 97% of mothers in Orissa confirmed that the Anganwadi workers maintained the growth charts. Thus in terms of growth monitoring, Orissa performed best and Uttar Pradesh worst. These results were also confirmed by the doctors. 40% doctors said that the records of age for weight were

not maintained. These doctors were mainly from Uttar Pradesh. The reasons given were the unavailability of weighing machines and growth charts, negligence and superstitions of mothers about recording their children's weight. In response to another question, around 80% mothers stated that anganwadi workers showed an interest in the children's growth related problems.

(iii) Immunization

Immunization against poliomyelitis, diphtheria, pertussis, tetanus, tuberculosis and measles is an integral part of the services provided under ICDS. The respondents were asked about all six prescribed vaccines / immunization given to their children. All mothers confirmed that some vaccines were given to their children but they were not aware of the names or nature of immunization. Discussions with doctors and field workers confirmed that all the ICDS children were given the prescribed six vaccines. Immunization of pregnant women against tetanus is also supposed to be done under ICDS. The anti-tetanus vaccine reduces maternal and neonatal mortality. Out of the total sample of 1080 women, the majority (96 to 99%) did get some vaccine but they were not aware of the name or nature of the vaccine. Workers and doctors said that these women were given the tetanus vaccine. Out of those who were not administered the vaccine, three reported that they did not get the time to go to the health centre, three complained that the vaccine was not given at the centre and two were not aware of any such vaccine.

(IV)Health Check-Ups

This component of the ICDS Programme includes healthcare of children less than six years of age, antenatal

care of expectant mothers and post natal care of nursing mothers. For up to six months the mothers were asked about health check-ups for them and their children by the Auxiliary Nurse Midwife or Lady Health Visitor. About 95.2% of mothers, varying from 92.8% to 99.4% across the three states, confirmed health check-ups of both mother and child after delivery and reported that they included general physical check-ups, vaccination, iron and vitamin tablets and measuring the weight of the mother and child. The majority of these women reported health check-ups once a month which were done either at thenear-by PHC or at the anganwadi centre. The women whose health check ups were not conducted generally complained of irregular and rare visits of the ANM to their village or said that they did not get time to go to the health centre. Overall, the three states were delivering health check-up services satisfactorily.

Awareness about Nutrition & HealthCare

All the women respondents had heard of ICDS programmes or anganwadi centers. With the exception of four women from Orissa, all were aware of some or other of the facilities. On asking about various topics on which the anganwadi workers provided information, around one-fourth mothers were not aware of healthcare and immunization services. 40% were not aware of breastfeeding for the child. A large number of mothers were not aware of minor illnesses and their treatment (95.3%), the necessary supplementary diet (75.6%) or referral facilities by the centre (76.6%). This shows that much more still needs to be done to impart awareness of the various facilities provided by the Centre, so that the target group can benefit from them. The factors causing malnutrition, and its consequences need to be highlighted while imparting awareness regarding health and

nutrition. About half the doctors were not satisfied with awareness levels for these factors. Training and sensitization of health workers is imperative for effective service delivery. About 67.7% of the 90 doctors interviewed reported that a monthly meeting of ANMs/Health Workers is called to give the latest information about the nutritional aspects of children in the age group of 0-6 years, as well as pregnant and nursing/ lactating mothers. Health workers are supposed to organise meetings of pregnant and nursing mothers to impart education on various aspects of health. According to 92 to 96% women with children below three years of age, the anganwadi workers organise meetings and interact with the women. In Uttar Pradesh, interaction and communication was poor. About 39% of women from Uttar Pradesh complained that there no such meeting was organised. Finally respondents were asked if they benefited from the information imparted tothem on nutrition and health and also the extent of this benefit. Apart from seven mothers from Orissa, all benefited from theinformation imparted by centre workers.However, a majority 74% were only marginally benefited.

Conclusion

The ICDS has expanded tremendously over its 30 years of operation to cover almost all development blocks in India and offers a wide range of health, nutrition and education services to children, women and adolescent girls. However, while the program is intended to target the needs of the poorest and the most undernourished, as well as the age groups that represent a significant "window of opportunity" for nutrition investments (i.e. children under three, pregnant and lactating women), there is a mismatch between the program's intentions and its actual

implementation. Key mismatches are (i) The dominant focus on food supplementation is to the detriment of other tasks envisaged in the program which are crucial for improving child nutritional outcomes. For example, not enough attention is given to improving child-care behaviors, and on educating parents how to improve nutrition using the family food budget.(ii) Older children (between 3-6 years) participate much more than younger ones and children from wealthier households participate much more than poorer ones. The program fails to preferentially target girls, lower castes or poorest villages. (iii) Although programme growth was greater in underserved than well-served areas during the1990s, the poorest states and those with the highest levels of undernutrition still have the lowest levels of program funding and coverage by ICDS activities.

Despite a pioneering start by ICDS, Orissa faced the greatest severe and chronic undernourishment. The height – for – age index shows stunted once a month which were done either at the near-by PHC or at the anganwadi centreThe women whose health checkups were not conducted generally complained of irregular and rare visits of the ANM to their village or said that they did not get time to go to the health centre. Overall, the three states were delivering health check-up services satisfactorily. The extent of severe under-nutrition was higher in Uttar Pradesh and Rajasthan while severe under-nutrition of a chronic nature was higher in Orissa. This reflects the need to provide a regular and adequate diet to children, especially in Orissa. The high percentage of undernourished children in Uttar Pradesh where there is better food production shows the need to educate mothers on proper feeding practices. Breastfeeding children immediately after birth is practised

by most mothers in all three states, indicating good performance of the programme in terms of inculcating breastfeeding practices. Providing less than the prescribed supplementary food indicates flawed implementation and implies a fanning off of the allocated quantity of food. This calls for more transparent functioning of the programme.

Because weighing machines and growth charts were not available, regular growth monitoring was not done. Consequently children with severe malnutrition were not identified and were not grouped into different grades as per the growth charts. Thus, in none of the states was the prescribed special treatment given or referral services used for severely malnourished children, which not only shows faulty implementation but also suggests poor supervision and neglect regarding the very purpose of the ICDS programme. ICDS workers conducted vaccination and health check-ups. However, because they did not provide adequate awareness on health and nutritional aspects to parents, most of them only benefited marginally. A lot more has to be done to improve the efficiency of the programme and ameliorate malnutrition and ill health. A rigorous monitoring of the implementation process and a concerted effort to make the programme more participatory by involving the local people would go a long way to helping its functioning and reducing widespread under-nutrition.

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THE ECOLOGY OF MALNUTRITION

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The word "ecology" comes from the Greek word *oikos*, meaning "house". Just as there are many factors and forces within a family's house that interact to influence its members, so there is an even more vast complex of interrelated forces housed in a biological system that produces diseases. Many factors work to produce malnutrition. A disease caused by malnutrition may exist in many varieties, many degrees, and many combinations. It is often complicated by the presence of other diseases, such as tuberculosis, intestinal parasites, or skin sepsis. A synergism is, in fact, known to exist between malnutrition and infection. Each compounds the other, and together they cause more illness than either would bring alone. For example, a common infectious disease of childhood such as measles, which would otherwise be mild, in a severely malnourished child may cause death. Infectious diarrhoea is a common complication of kwashiorkor and may be the irreversible factor that causes death. Some of the many related causes of malnutrition can be classed under three factors that are classically cited by epidemiologists as the triad of variables that influences the disease: (1) *agent*, (2) *host*, and (3) *environment*.

Agent :

The agent that is the fundamental cause of a malnutrition disease is *a lack of food*. Because of this lack, certain nutrients in food that are essential to the sustenance of cellular activity are missing. Various factors may cause or modify this lack of food:

1. *Food quantity*. The total quantity of food ingested may be below the level required to maintain the body tissues. The food deficiency may be partial or complete, seasonal or constant.
2. Imbalance between community, food *supply and need*. The amount of food available per person may be reduced by natural or man-made disasters.
3. *Food quality*. The food available may be of poor physical quality or biologic value.
4. *Food timing*. Food may not be presented when needed, in proper balance.

Host :

The host is the person – infant, child or adult – who suffers from malnutrition. Various characteristics of the host may influence the disease.

1. *Presence of other disease*. Infections, allergies, metabolic diseases, gastrointestinal diseases and so on compound the course of malnutrition.
2. *Increased dietary needs*. Any physiological cause of stress such as growth, pregnancy, lactation, injury, illness or physical labour increases the demand for nutrients.
3. *Congenital defects*. Premature birth or anatomic defects, such as cleft palate, influence food intake.
4. *Personal factors*. Ignorance of food needs or food values, carelessness, lack of education, emotional problems, indolence, poor habits and anorexia influence the kind and amount of food consumed.

Environment :

Many environmental factors influence malnutrition. Some are close at hand and may be controlled by the individual. Many

more far-reaching ones are too enormous, too powerful, and too remote in their source to be influenced by a single person. Mass action and extensive study are needed to deal with these problems. The following are some environmental problems:

1. *Sanitation*. Food contamination causes food loss and produces diseases, thus compounding malnutrition.
2. *Culture*. Traditional food habits and customs may hinder nutrition.
3. *Social factors*. Interrelated social problems, such as those created by poverty, racial discrimination, inadequate housing and family disintegration, may contribute to lack of food and to malnutrition.
4. *Psychological factors*. An example of the many psychological problems that may contribute to malnutrition is maternal deprivation, which may lead to actual or felt rejection of a child and inadequate feeding.
5. *Economic and political structure*. The economic and political system of a region controls the power structure, governs administrative policy, and controls channels of food supply and form.
6. *Agriculture*. Geography, climate, food technology, and methods of agriculture influence food supply. What food can and will be produced is determined by the natural resources available and their degree of development.

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CHILD MALNUTRITION AND ROLE OF ICDS

Dr Sanjukta Mohanty

INTRODUCTION:-

Malnutrition is a broad term which refers to both under nutrition and over nutrition. Individuals are malnourished or suffer from under nutrition if their diet does not provide them with adequate calories and protein for maintenance and growth or they can not fully utilize the food due to illness. According to WHO, malnutrition is the greatest single threat to global public health. It is the underlying cause of as many as half the deaths of children under five. About 25% of children under age of five in the world are under weight. In India, the under weight prevalence is about 43 %. Sub-nutrition occurs when an individual does not consume enough food, it may exist if the person has a poor diet that gives them the wrong balance of basic food groups. Poor diet may lead to a vitamin or mineral deficiency, among other essential substances, something resulting in scurvy, a condition where an individual has vitamin C deficiency, WHO says that malnutrition is the largest contributor to child mortality globally.

All over the world, people who are poor or who live in poverty stricken areas are at the greatest risk for hunger and malnutrition. In poor countries, wars and natural disasters such as droughts and earthquakes also can contribute to hunger and malnutrition by disrupting normal food production and distribution.

SYMPTOMS AND EFFECT OF MALNUTRITION

Malnutrition affects people of every age, although infants children and adolescent may suffer the most because many nutrients are critical for normal growth and development. Older people may develop malnutrition because aging, illness and other factors can lead to a poor appetite, so they may not eat enough. Alcohol can interfere with nutrient absorption, so alcoholic person might not benefit from vitamins and minerals they consume. People who abuse drugs or alcohol can be malnourished or underweight if they don't eat properly.

Malnutrition affects both the body and the mind. The more malnourished someone is in other words, the more nutrients that are missing, the more likely He or She to have problems. However, the signs and symptoms of malnutrition depend on, which nutritional deficiencies a person has, although they include.

(i) Fatigue and low energy.

(ii) Dizziness.

(iii) Poor immune function

(iv) Dry scale skin.

(v) Swollen and bleeding gums.

(vi) Decaying teeth.

(vii) Slowed reaction times and trouble paying attention.

(viii) Under weight

(ix) Poor growth

(x) Muscle weakness

(xi) Bloated stomach

(xii) Osteoporosis or fragile bones that breaks easily.

(xiii) Problems with organ function

(xiv) Problems learning.

If pregnant woman is malnourished her child may be weightless at birth and have a lower chance of survival. Vit – A deficiency is the chief cause of preventable blindness in the developing world and kids with a sever Vit-A deficiency have a greater chance of getting sick or dying from infections such as diarrhoea or measles. Iodine deficiency, another form of malnutrition can cause mental retardation and delayed development. Iron deficiency can make kids less active less able to concentrate.

MALNUTRITION AND ICDS PROGRAMME

Integrated child development services or scheme was launched on 2nd October 1975. Today ISDC scheme represents one of the worlds largest and most unique programmes for early childhood development. It is the foremost symbol of India's commitment to her children. Its objective is many fold. It was launched with the following objectives.

(i) To improve the nutritional and health status of children in the age group 0-6 years.

(ii) To lay the foundation for proper psychological, physical and social development of the child.

(iii) To reduce the incidence of mortality, morbidity, malnutrition and school dropout.

(iv) To achieve effective co-ordination of policy and implementation amongst the various departments to promote the child development.

(v) To enhance the capability of the mother to look after the normal health and nutritional needs of the child through proper nutrition and health education.

According to national family health survey (1992-93), more than half 53% of children below 4 years of age are under nourished , in 1998, 29.1% children between 1-5 years of age suffered from moderate and 12.3% from sever under nutrition Nutritional adequacy is one of the key determinants of the health and well being of children. The high incidence of low birth weight compounded with inadequate care and restricted access to health services translates in to high rates of child malnutrition and threatens the process of healthy development, culminating in a high infant mortality rate. India has high IMR of 901 per 1000 children with Odisha at the top with 96.7 IMR followed by MP (89.5%) UP (84.4%) and Rajasthan (81.2%) (Register general-2001).

ICDS, a major programme to tackle the problem of children, has 4,398 operational ICDS Projects (GOI- 2001-02). Despite 30 years of implementation 47% or about 37 millions children under 3 years of age are under weight in India (NFHS II :1998-99).

EFFICIENCY OF ICDS

Supplementary Nutrition :

Adequate food and growth feeding practices are essential for the normal growth of a young child ICDS/ Anganwadi centres are supposed to provide supplementary feeding and inculcate good feeding practices among mothers. Supplementary feeding should be introduced at ground 6 months age in addition to continued breast feeding up to 2 years of age. This attempts to bridge the calorific

gap between the national recommended and average intake of children in low income and disadvantage communities. It is also essential for the pregnant and nursing mothers. In Odisha 17.5% woman received food cooked at the centre and 5% got some other kind of food. They were provided with additional food once a week. The performance of Anganwadi centres in providing supplementary food to children was better. Unlike mother 100% children in three states got supplementary food.

GROWTH MONITORING

It is another important activity that is supposed to be operational at Anganwadi centre under many ICDS function. As per ICDS guidelines, children below 3 years of age should be weighed once a month and children 3-6 years of age quarterly. Weight for age growth cards are supposed to be maintained for all children below 6 year of age, which help to detect growth faltering and assess nutritional status.

IMMUNISATIONS

Immunisation against poliomyelitis Diphtheria, Pertusis, Tetanus, tuberculosis and measles is and integral part of services provided by ICDS.

HEALTH CARE AND CHECK-UPS.

This component of ICDS programme includes health care of children less than 6 years of age, antenatal care of expectant mothers and post natal care of nursing mothers.

REFERRAL SERVICES

During health checkups and growth monitoring sick or malnourished children, in need of prompt medical attention are referred to the primary Health Centre or its sub centre.

The Anganwadi worker has also been oriented to detect disabilities in young children.

NON-FORMAL PRE-SCHOOL EDUCATION (PSE)

The non formal Pre School Education (PSE) component of the ICDS may well be considered to be the backbone of the ICDS programme. Anganwadi centre (AWC) at village courtyard is the main platform for delivering of these services, AWCs have been set up in every village in the country. This in most joyful play way daily activity, visibly sustained for three hours a day. It brings and keeps the children at the Anganwadi centre an activity that motivates parents and communities. PSE as envisaged in ICDS, focuses on total development of the child up to 6 years of age.

NUTRITION AND HEALTH DEDUCATION

Nutrition and health education is a key element of the work of the Anganwadi worker. This has the long term goal of capacity building of woman especially age group of 15-45 years so that they can look after their own health nutrition and development needs as well as their families.

CONCLUSION

ICDS is a major programme, following the adoption of a National policy for children was initiated in 1975 but still after 30 year of implementation. It is incapable of wiping out malnutrition among children. This is due to hierarchical nature of the society and benefit of most developmental programme are usurped by the better off sections, depriving the marginalised. This appears to be reflected in the implementation of ICDS as mothers and children of SC and ST and those is backward areas, are much vulnerable. The

IMR among SCs and STs was found to be 83 and 84 respectively as opposed to 68 per 1000 live births for those of non-scheduled caste (Barik and Kulkarni 2004).

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POVERTY AND MALNUTRITION : A STUDY OF THE INTERLINKAGES

*Sonali Pani**

Introduction

Widespread poverty resulting in chronic and persistent hunger is the single biggest scourge of the developing world today. The physical expression of this continuously re-enacted tragedy is the condition of under-nutrition which manifests itself among the large section of the poor, particularly amongst the women and children. This paper makes an attempt to study the inter-linkages of poverty and malnutrition. It is mainly based works of others. However, it also uses the author's findings from a micro study in Sambalpur town in Orissa.

The paper is designed as follows: After stating the problem in the beginning it discusses the different concepts relating to malnutrition; magnitude of malnutrition prevailing. Then it examines the relationship between poverty and malnutrition using the past studies. It first discusses the theoretical studies. The theoretical analysis is followed by the analysis of relevant empirical works. At the end the paper concludes by suggesting the areas of future empirical research on this topic.

Concept

Malnutrition as a medical term refers to a particular health condition caused by infection or improper diet. It is a state of poor nutrition which can result from insufficient or excessive or unbalanced diet. It can also be caused by the poor

absorption of food and excessive loss of essential food nutrients. It manifests itself as stunting, underweight and wasting among children, and deficiencies of micro-nutrients, such as vitamin A, iron, iodine, zinc and folic acid etc. Malnutrition does not need to be severe to pose a threat to survival.

Children whose weight-for-age measures are below two standard deviations ("2SD) from the median of the reference population are underweight for their age; children whose height-for-age is below two standard deviations ("2SD) from the median of the reference population, are considered short for their age, or stunted, and children whose weight-for-height are below two standard deviations ("2SD) from the median of the reference population are considered as wasted. However, in this paper "malnutrition" and "under nutrition" are generally used inter-changeably. Malnutrition refers to all deviations from adequate nutrition, including under nutrition resulting from inadequacy of food relative to need.

Prevalence

According to the State of World Children (**SOWC, 2010)** it is found that both in the world and in the developing countries 26percent of world children were underweight, 13 percent wasted and 34 percent stunted. But in India these percentages were quite high, i.e. 48 percent of children are estimated to be underweight, 20 % were wasted and 48 percent were found to be stunted.

It is not necessary that malnutrition to be very serious to cause increased morbidity and mortality. World wide fewer than 20 percent of deaths associated with childhood

malnutrition involve severe malnutrition. More than 80 percent involves only mild or moderate malnutrition. It is one of the leading cause of the global burden of disease (Ezzati et al. 2002) and has been identified as the underlying factor in about 50% of deaths of children under 5 years of age in developing countries (Black et al 2003). At least one-fifth of the world wide loss of years of life to death and to disability is due to under nutrition (Lawrence Haddad, 2002).

In India, though there are attempts to reduce malnutrition through various programmes like Integrated Child Development Programme (ICDS), Supplementary Nutrition Programme (SNP) etc. still the malnutrition among children remain quite a high level. It is found that the proportion of stunted children (below three years) has come down from 46 per cent (in 1998) to 38 per cent (in 2005-06), as per the latest national family health survey (NFHS-3). Similarly, the proportion of children underweight has come down from 47 per cent to 46 per cent. But the proportion of wasted children has gone up from 16 per cent to 19 per cent during the same period.

Poverty - Malnutrition Inter-linkage: theoretical analyses

Under nutrition is a condition resulting from inadequate intake of food or more essential nutrient(s) resulting in deterioration of physical growth. The inadequacy is relative to the food & nutrients needed to maintain good health, provide for growth and allow a choice of physical activity levels, including work levels that are socially necessary. This 'condition of under-nutrition, therefore, reduces work capacity and productivity amongst the adults

and enhances mortality and morbidity amongst children[1]. Such reduced productivity translates into reduced earning capacity, leading to further poverty, and the vicious cycle goes on. Figure-1 presents the vicious circle of poverty and malnutrition. Improvement in the nutritional status of children through intervention measure may make positive contribution by transforming the vicious circle into the virtual circle resulting in higher productivity and income. Thus, the improvement of nutritional status of a population is critical to the development and well being of a nation.

Under-nourishment not only retards physical development but also hampers the learning and cognitive process, leading to sluggish educational, social and economic development. The high incidence of low birth weight compounded with inadequate care and restricted access to health services translate in to high rates of child malnutrition and threatens the process of healthy development (Kumar Sanjeev, 2005)[2].

Haddad, et al. (2003) also stated that poverty is the crucial determinant of hunger and undernutrition. With higher per capita income the household can exert stronger effective demand for essential private consumption goods, including more and nutritionally better food. Secondly, higher income (GNI) also means higher Government revenues and expenditures. These expenditures finance public investment and consumption in health and nutrition related services, which generate a positive effect on child nutritional status.

Svedberg (2000) also examined the relationship between undernutrition and income. Maurice Schiff and Alberto Valdes (1990) examined the same in less developed countries. He linked household income to the food intake. Contrary to this,

Behrman and Dealalikar (1987) state that nutritional intake is unlikely to improve with income. According to them, as income increases, a large proportion of food expenditure is spent on non-nutrient food attributes such as diversity of products consumed, freshness, taste, convenience foods which save their time in their preparation and others. They point out that the nutritional status of a household depends only in part on its nutrient intake. It also depends on other privately and publicly provided goods and services. But there are other studies which find the link between income and child malnutrition.

Duncan, Greg. and J. Brooks–Gunn (1997) found family income and poverty status as powerful determinants of the cognitive development and behavior of children even after the other differences in particular family structure and maternal schooling between low and high income families. So, according to them income is an important determinant of nutritional status. The study of KRG Nair (2007) suggests that poverty reduction would ensure the lessening of the prevalence of malnourishment among children. However, it also states that inclusive economic growth would not automatically lead to a reduction in the malnourishment among children.

Jha and Gaiha(2003) analysed and compared the determinants of income poverty and nutritional status by using Logit co-efficient. They focussed on household endowments, socio-economic group, affiliation and characteristics of villages.

UNICEF (1990) also provides a conceptual framework of the determinants of nutritional status of children. According

to it, malnutrition is the immediate outcome of dietary intake and health status of the individual which are ultimately

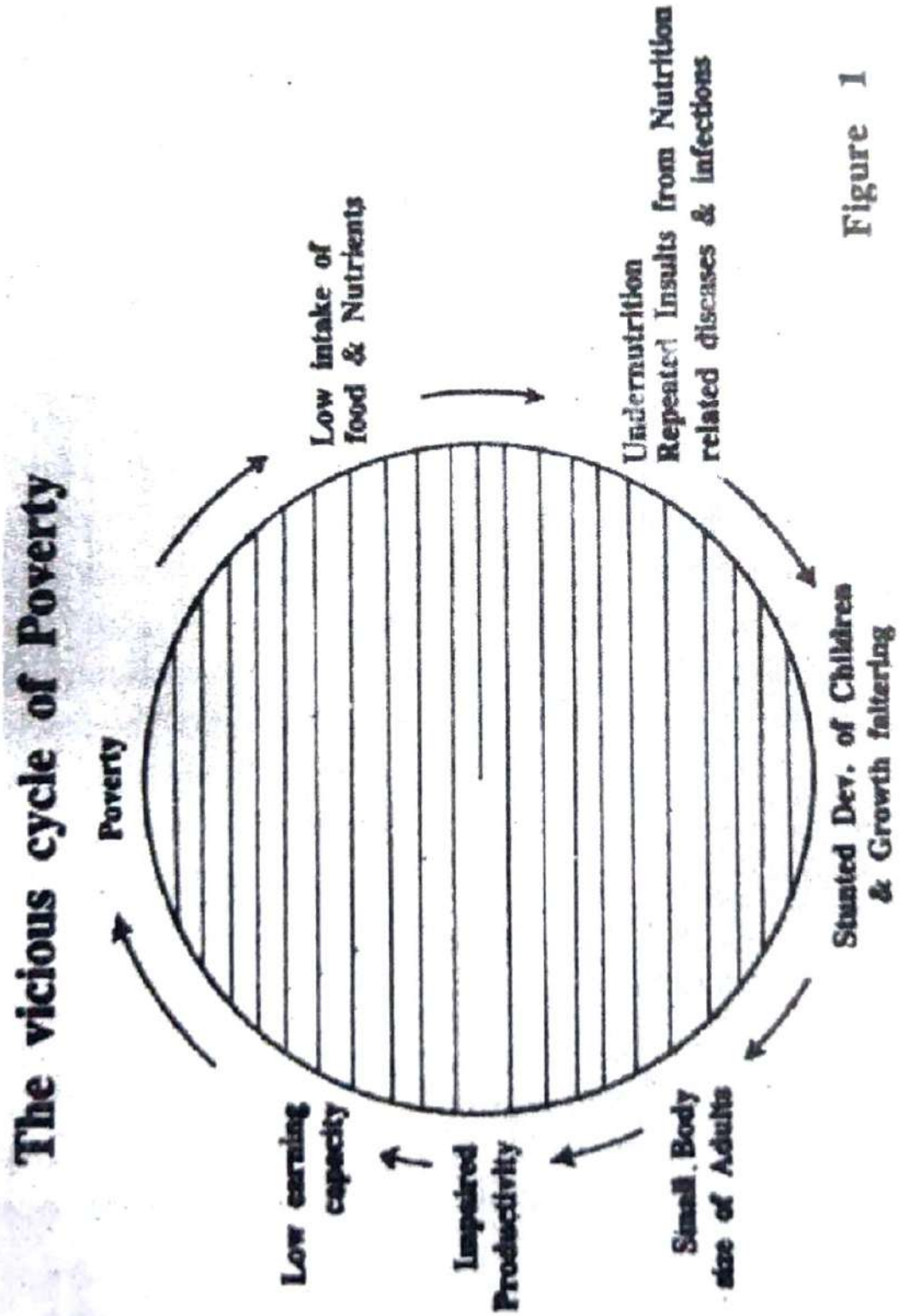
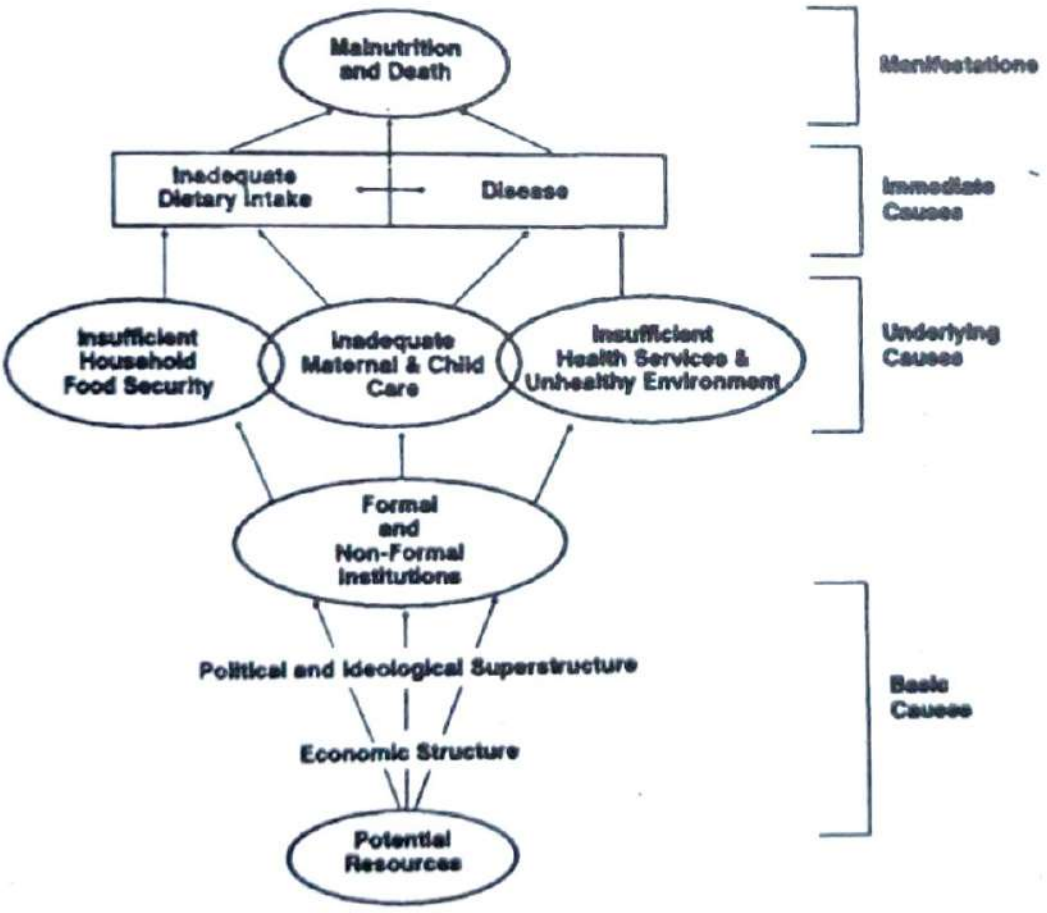


Figure 1

determined by potential resources, influenced by economic, political and ideological superstructure (presented in Figure-2). However, the role of the underlying causes like household food security, general health care facility and the maternal and child care are very important. Moreover, the institutions both formal and informal influence the access of various resources and facilities available.

Figure II: Causes of Malnutrition and Death



Source: Adopted from UNICEF (1990)

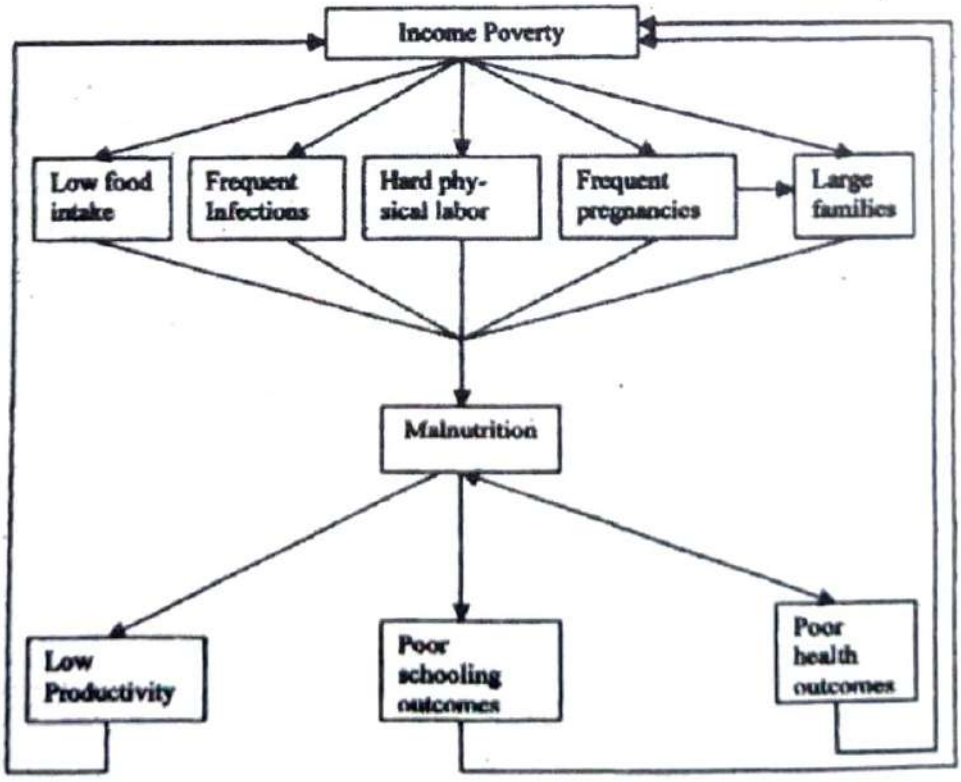
The link between income poverty and under nutrition is also mediated through several pathways "one reinforcing another, leading the household towards the bottom of the ladder. Majority of the low income group population are unskilled

labourers, engaged in manual labour. Under-nutrition has an adverse effect on their work capacity and it increases the susceptibility to infections. Poor work output and absenteeism due to illness reduce their earning and purchasing power.

The income-poor households are also isolated from markets and services and therefore spend more time and energy to access them; they have a high fertility rate which demands high energy of the mothers. This linkage is mapped in the flow-chart (figure-3) by a World Bank study (2002).

Figure-3

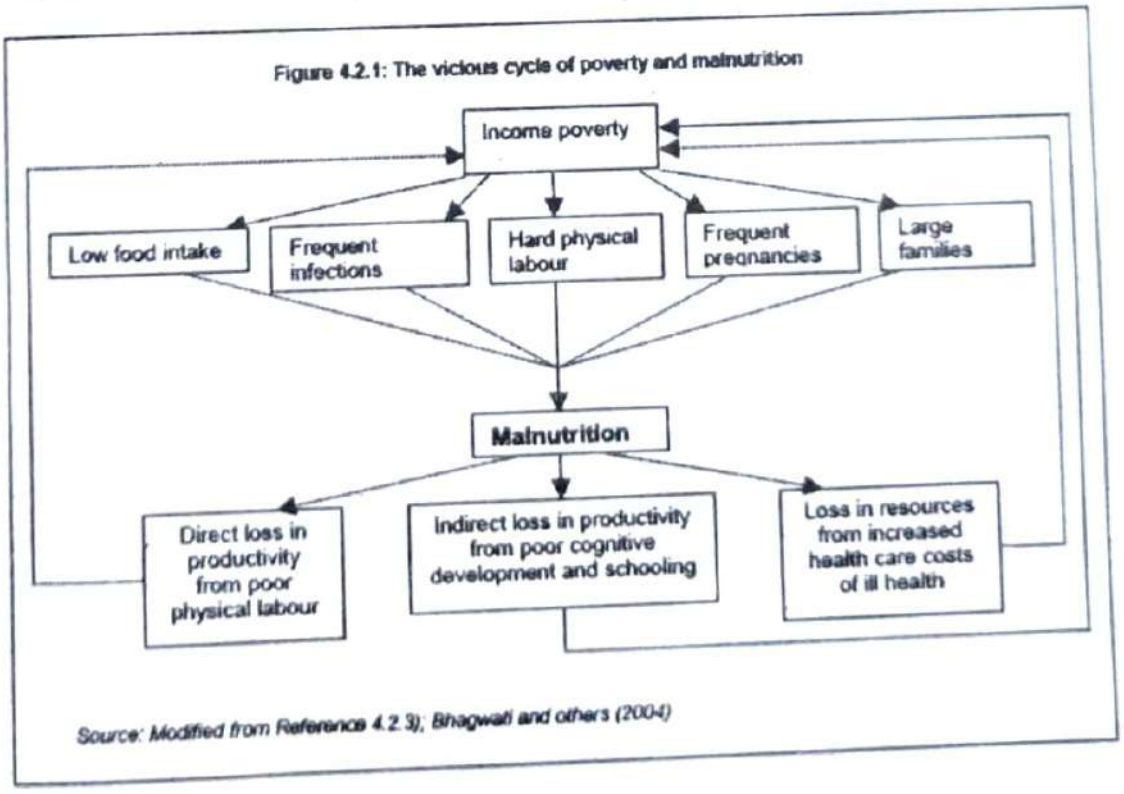
Relationship Between Nutrition and Poverty



Bhagwati et al (2004)[3] using the the above framework of World Bank also analysed theperpetuation of the vicious circle of income poverty and malnutrition. Their analysis is

presented in figure-4. According to them, income poverty menifested in low food intake, frequent infections etc. cause malntrition which in turn results in productivity loss directly as well as indirectly; the former is relating to physical work and the latter to cognitive development and schooling. Malnurtion also involves loss of resources owing to the curative healthcare expense. All these losses further cause low income or intensify the income poverty. We can also visualise the interractions of poor health condition on schooling and poor schooling alongwith poor health condition can cause low skill formation and physical activity, both causing low earning and high income poverty.

Figure-4



Source: Modified from World Bank (2002a); Bhagwati et al. (2004).

Dasgupta (1995) states that under nutrition are critical to understanding poverty traps in India. This literature reverses the causation between poverty and under-nutrition, arguing that

under-nutrition causes poverty but not necessarily the other way around. Lipton (2001) also endorses this view and argues that under-nutrition might make the poor unable to take advantage of welfare programs such as food for work since they are too weak to work hard. The poverty trap argument is built around the efficiency wage hypothesis, and claims that nutrition-based poverty traps exist and help explain the persistence of poverty in agrarian economies. (Gaiha 1998).

Dr Rizwanul Islam conceptualized the interlink age between poverty and nutrition as a cycle in his paper *"Poverty and Its Effect on Nutrition"*. Nutritional status is both an effect and a cause of income"earning opportunities. Development policy may influence the cycle positively by improving the ability of households to obtain food, e.g. through public distribution, employment provision, or through policies relating to health and education, particularly female education. Nutrition is thus an outcome of food and non"food factors; of privately"consumed basic needs and socially"provided basic needs.

Empirical Works on Poverty-Undernutrition interactions

- **Radhakrishna and Ravi (2004)** studied the link between poverty and undernutrition. Poverty estimates of NSS 55th round and children's underweight data of NFHS -II were used for the purpose. The model is estimated separately for underweight, stunted and wasted categories of malnutrition. The standard of living index, one of the independent variables, is chosen to serve as a proxy for income level of household. The study reveals that a 10 per cent reduction in poverty reduces under-nutrition by 3 per cent and severe malnutrition by 7

per cent. They found that adult malnutrition is largely a result of poor diets and infection during childhood. The risk of malnutrition was found higher among the children whose mothers suffered from chronic undernutrition.

- **Mazumdar (2010)** using the state level data, studied the association of malnutrition among children with poverty and per capita income of the states of India. States with higher levels of average poverty were found suffering from a higher extent of malnutrition among children. The level of economic development in the states also followed a similar pattern, i.e., developed states were found with lower levels of malnutrition. He also found that the poor and the vulnerable sections of the population shoulder the disproportionate burden of child malnutrition in India.
- **Sen and Sengupta (1983)** in an empirical work in two villages in the Birbhum district of West Bengal studied the roles of land reform and direct nutritional intervention on children below five. They found: (1) remarkably high incidence of undernourishment, even of the 'severe' and 'disastrous' types, and (2) systematic sex bias reflected in higher deprivation of girls compared boys. The sex bias is reflected both in (i) the greater prevalence of undernourishment of various degrees among girls than among boys, and also (ii) in the lower growth dynamics of girls compared to boys
- **Pandey(2007)** in her paper tried to relate status of 450 mothers in the family with the nutritional status of their 530 under five children. She found that

educated mothers and those having control over family expenses take care of children more effectively, while children of poor employed, nutritionally weaker mothers and those having no control over purchase of dietary items suffer nutritionally. Hence, there is a need for some place like crèche to take care of children of poor working mothers during their working hours. Thus, the study underlines the need of improving mothers' status even in low economic set up which in turn will help in improving the nutritional status of their children.

- **Robert Crittenden and Janis Baines (1986)** studied the nutritional status of children in the Nembi Plateau, Papua New Guinea. These areas are with one of the worst malnutrition rates in the southern highlands. To identify patterns in various factors and to see whether any pattern coincided or interacted to impinge upon the nutritional status of children between the ages of 6-24 months they took a cross sectional survey of 1162 children under the age of 5. They monitored the nutritional status of the children, the episodes of sickness among them, their diet pattern and the work activity of mothers and their weight changes. The analysis by age group showed the prevalence of severe malnutrition among children of 6-24 months with a slight recovery between 24-30 months of life. Irrespective of age, increased morbidity was found with the decline in nutritional status and the situation was serious in the second year of life.

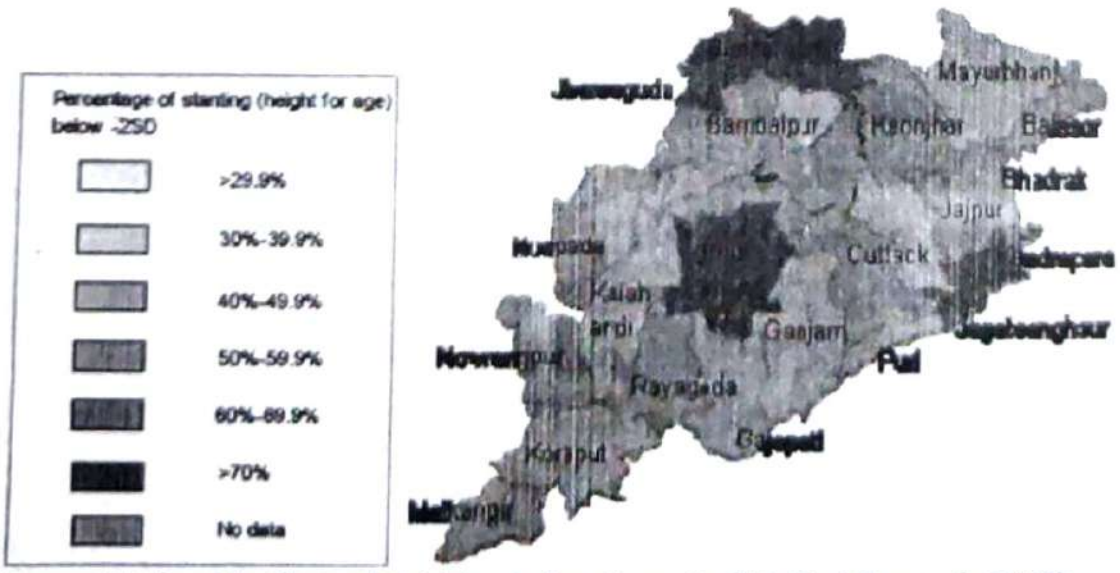
- **Agnihotri (1995)** outlines the need for campaign to eradicate severe mal-nutrition among the children below six, largely through ICDS machinery. He

analysed nutrition profile (i.e., the weight for age) of children below six in 252 ICDS Projects of 229 blocks in Orissa for January 1999 and found the incidence of severe mal-nutrition among children (1-6) with a mean of 2.06 per cent of the total child population. He also found that the incidence of severe mal-nutrition is much higher among the children below three compared to that among the rest. He suggested that mal-nutrition can be removed through (i) supplementary nutrition; (ii) health care provision; and (iii) the improvement in the socio - economic situation of the family

- A micro study (2007), on child poverty in Orissa, taking Sambalpur town as its study area analyses the interaction of household poverty and child malnutrition. Underweight was taken to measures the nutritional deficiency among the children below five years. This study higher percentage of male underweight children in the study area compared to that of girls. It also found higher percentage of underweight children are in the poor households. Economic condition of the household was studied by taking the per capita assets and per-capita income. The study also found that besides economic condition, education of the parents, especially of the mother's has good impact on the children's nutritional status.
- A study (2002) by Natioal Institute of Nutrition (NIN) and Indian Council of Medical Research (ICMR) on the inter-district variation of child malnutrition in Orissa and its linkage to the poverty, and vulnerability of the

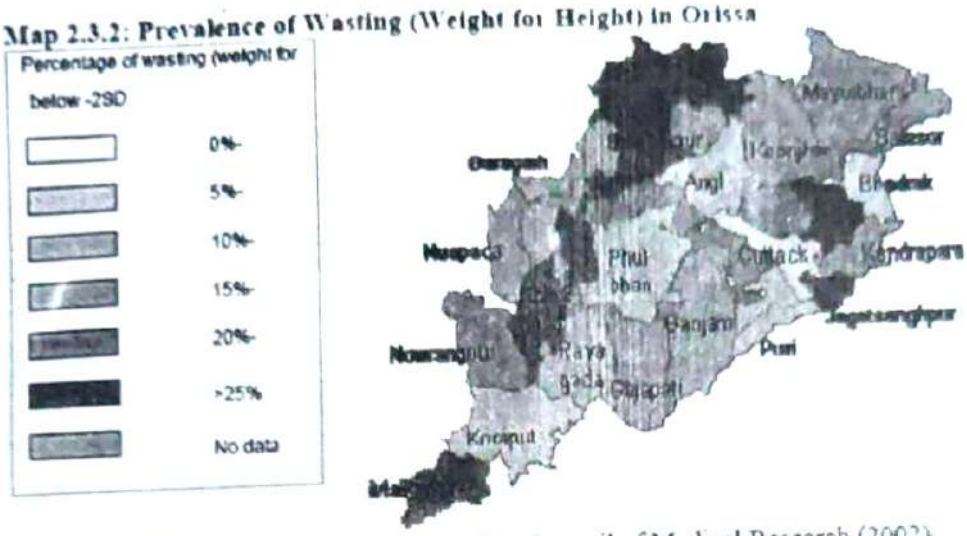
people in the districts " reveal some interesting facts. These variations to a large extent depend upon the income poverty in the districts. It found equal spread of the prevalence of moderate stunting among children(1-5) across the districts (presented in map-1). It shows that 6 out of 10 children suffer from chronic malnutrition in every district. However, the prevalence of wasting does not seem to be distributed consistently across the districts. This means that acute malnutrition occurs in a more visible and concentrated manner in specific geographic zones and it implies that looking into the homogeneity among these districts marked with a high prevalence of this type of malnutrition could also provide important information on the causes of malnutrition.

Map 2.3.1: Prevalence of Stunting (Height for Age) in Orissa



Source: National Institute of Nutrition-Indian Council of Medical Research (2002)

Map 2.3.2: Prevalence of Wasting (Weight for Height) in Orissa



Source: National Institute of Nutrition-Indian Council of Medical Research (2002)

It also found that the male children are slightly more affected than female children for any kind of moderate malnutrition. In addition, the gap seems to be larger when the malnutrition is severe.

Conclusions

The complementary nature of the determinants of malnutrition, suggests, for the targeted interventions aimed specifically at the vulnerable sections toward the cherished goals of reducing the scourge of hunger and nutritional deprivation among the children of India.

Another important fact is: at the macro"level, child malnutrition is related to poverty, but at the micro level, poverty does *not* appear to be strongly related to child malnutrition in many cases. Other factors, many of which relate to the intra"household *use* of resources " resources such as the time and the knowledge of the main caregiver, usually the mother " are also important. This requires the expansion of education and knowledge among the females and their empowerment so that resource distribution will favour the children and women " would improve their nutritional status. Ultimately it will serve all through the virtuous circle.

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THE ROLE OF ICDS & UNDER NUTRITION

Nirmal Kumar Mohapatra

Under nutrition is a widely prevalent problem in India and one of astonishing magnitude. According to the National Family Health Survey, in 1998, 29.1% of children between 1-5 yrs of age suffered from moderate and 12.3% from severe under nutrition. Under nutrition not only retards physical development but also hampers the learning and cognitive process. As per Census 2001, 170 million children under 6 yrs of age constitute 17.5% of India's population and actually these children's under nutrition threatens the process of health development. India has high IMR of 90 per 1000 children, with Orissa top with 96.7 IMR followed by M.P. (89.5) & Rajasthan (81.2) as per Registrar General-2001.

ICDS, a major programme to tackle the problem of under nutrition and the ill health of mothers and children was initiated in 1975, followed the adoption of a national policy for children. This programme is now the single largest programme for the country's children with 4,348 operational ICDS projects (GOI : 2001-02).

STRATEGY OF ICDS

Supplementary Feeding:- Adequate food and good feeding practices are essential for the normal growth of young child. Under nutrition is clearly linked to inappropriate feeding practices rather than just to food availability or house hold food security. ICDS / Anganwadi Centres are supposed to provide supplementary feeding and inculcate good feeding practices among mothers. Supplementary feeding should be introduced at around 6 months of age in addition to continue breast feeding upto 2 yrs of age. This attempts to

bridge the calorific gap between the national recommended and average intake of children in low income and disadvantaged communities. Odisha has the highest number of mothers with supplementary diets both during pregnancy and up to 6 months after delivery.

GROWTH MONITORING:-

Growth monitoring is another important activity that is supposed to be operational at Anganwadi Centres under one of the many ICDS functions. It is very important for accessing the impact of health and nutrition related services and enabling communities to improve the same. As per ICDS guidelines children below 3 yrs of age should be weighted once in a month and children 3-6 yrs of age quarterly. Weight for age growth cards are supposed to be maintained for all children below 6 yrs of age. These help to detect growth faltering and to access nutritional status. It is here worthy to maintain that 97% of mothers in Odisha confirm that the Anganwadi workers maintain the growth monitoring, Odisha perform the best.

IMMUNISATION:-

Immunisation against poliomyelitis, diphtheria, pertusis, tetanus, tuber culosis and measlesis is an integral part of the services provided under ICDS. Infact, malaria, measles, respiratory infections and diarrhea are common infections to which poorest and under nourished infants are specially vulnerable. According to the Odisha vision-2010 document, malaria is the state's main public health problem. Odisha contributes 23% of India's total malaria cases and 50% of its malaria death.

HEALTH CHECK-UPS:-

This component of ICDS programme includes health care of children less than 6 yrs of age, antenental care of

expectant mothers and post-natal care of nursing mothers. ANM & LHV are engaged to perform this job with consultation with ICDS. They generally include the programme like general physical check up, distribution of iron and vitamin tablets & measure the weight of the mother & child.

The table shows the ICDS coverage of the state of Odisha. It is found that ICDS has covered 326 projects (314 rural and 12 urban) in all blocks. Inspite of its abundancy in staff we find high extent of under nourishment and less than satisfactory performance of ICDS in Odisha. Here we find a severe under nutrition in chronic nature. This reflect the need to provide a regular and adequate diet to children. Breast-feeding children immediately after birth should be practiced by most mothers in Odisha. Besides that, in case of Odisha, we find only 42% of AWW are educated up to standard nine. Thow, 96% of AWW are trained the majority felt that the quality of training needed improvement.

The ICDS management information system (MIS) reveals a positive trend in under nutrition reduction in the state. Further, it decided to conduct a study to inform the development of an evidence based nutrition plan. Now, all focuses are concentrated on improving ICDS by fostering new action plan for reducing under nutrition. Above all, a rigorous monitoring of the implementation process and a concerted effort to make the each and every programme more participatory by involving the local people would go a long way to helping its functioning and reducing wide spread under nutrition.

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POVERTY AND CHILD MALNUTRITION : AN ANALYSIS OF INTERDISCIPLINARY RELEVANCE

Shankarshan Nayak,

The term poverty itself is an ill defined word. Although a plethora of writings put forwarded by the eminent scholars has been dated back to the post independence era pertaining to the glaring issue of poverty alleviation, still their focus was multi directional in character but not the unidirectional in the true sense of the term. Right from the 1970's to the present globalized world , different institutions , organizations and individuals have made keen observations with their strenuous efforts to spell out the definitions, cause, consequences and remedial measures to combat with this challenging issue. However their interpretation over the term poverty lacks universal acceptability. The World Bank defines poverty as the inability of people to attain minimum living standard i.e. a feeling of deprivation. But this definition gives rise to a controversial issue relating to the question as to how one can measure the standard of living by what index? Hence the living standard of an individual may be reflected in terms of real income and expenditure of different countries which may be associated with different variables like level of nutrition, life expectancy, infant mortality, and schooling and consumption pattern and from the health front. In India, the "Task Force on Projection of Minimum Needs and Effective Consumption Demand", defines a poverty line as the mid point of monthly per capita expenditure which have a daily calorie intake of 2400 per person in rural area and 2100 in urban area in recent years Nevertheless, as per the latest estimation in 2011, the G.O.I. has fixed up the level of

real expenditure to put a limit for poverty line and accordingly speaks that a person who can not incur the expenditure of $32 per day in urban area and $26 per day in rural area is considered to remain below the poverty line. Hence the debate on term poverty and poverty line is a never-ending task. But from the socio economic angle a person is said to be poor only when he /she does not avail of three basic securities i.e. food security, job security, and social security. All three securities are not adequate as per the requirement of the Indian people. Yet again with the fast growth rate of population, the incidence of poverty is growing day by day. To this effect a comparative analysis has been made with that of other countries.

Poverty incidence and growth rates in India and in selected Asian countries(in percentage)

Countries	Poverty ratio 1975	Poverty ratio 1995	Annual Reduction 1975-95	Average GDPgrowth 1980-95
India	54.9	36.0	0.9	5.6
China	59.5	22.2	1.9	11.1
Indonesia	64.3	11.4	2.6	6.6
Korea	23.0	5.0	0.9	8.7
Malaysia	17.0	4.0	0.7	6.4
Philippines	35.7	25.5	0.5	1.4
Thailand	8.1	0.9	0.4	7.9

Source : World Bank Report on Social consequences of East Asian Financial Crisis.

The table reveals that although the poverty ratio declined from 54.9 to36.0 the performance of poverty reduction has been very weak in India as compared to other Asian countries.However the poverty differential among the state of India is still is disheartening as observed from the date. In case of Orissa , the expert group of found Orissa as the most poorest state having 55.61% BPL against the official estimate 44.71% as observed from the following table.

Poverty Deferential Among the States

Percentage of people living below BPL(1997-98)

Name of the states	Expert Group's estimate	Official estimates
Orissa	55.61	44.7
Bihar	53.37	40.8
Tamil Nadu	45.11	32.8
Madhya Pradesh	43.41	36.7
West Bengal	49.90	27.6
Uttar Pradesh	41.92	36.1
Maharastra	40.1	29.2
Asam	39.3	22.8
Karnatak	38.19	32.1
Rajsthan	34.6	24.1
Kerla	32.6	17.0
Gujurat	32.35	18.4

Source: Planning Commission Report of the Expert Group

However all these comparative analysis of poverty prevalent in the global level, country level and state level presents a gloomy picture particularly in India. Therefore it is the need of the time to intervene the variable and index that are responsible for poverty in India and in the state in particular.

The topic is very vibrant in exploring the situation of poverty in the present day context. As we find child malnutrition as a strong indicator of poverty and in order to overcome the inherent difficulties to measure the human development, the United Nation Development Programme UNDP has developed the alternative indices to compare the level of development has used the formula of human poverty Index (HPI) to measure the economic well being of the nation. It has taken 3 indices:-

- Percentage of population who are not expected to survive to the age of 40 (p1)
- The Adult literacy rate (P2)
- A deprivation Index based on an average of 3 variables, the percentage of population without access to safe drinking water, percentage of population without access to health services and percentage of underweight children under 5 years (P3)

To the above effect HPI has developed the formula as:-

$$HPI = [(P1^3 + P2^3 + P3^3)/3]^{1/3} - 4 \quad (2.1)$$

Therefore child malnutrition has a strong bearing to indicate the magnitude and incidence of poverty. Hence it is an ardent need to focus on the very concept of malnutrition and child malnutrition.

What is Malnutrition ?

According to Medilexicon's medical dictionary malnutrition is "Faulty nutrition resulting from mal absorption, poor diet, or over eating "

Under nutrition is "A form of malnutrition resulting from a reduced supply of food or from inability to digest, assimilate and use the necessary nutrients"

Malnutrition itself has dual denotation, implying both under nutrition (sub nutrition) and over nutrition. Individuals are mal nourished are said to have been suffered from under nutrition. If diet does not provide them with adequate calories and protein for maintenance and growth or they can not fully utilize the food what the eat due to illness. People are also found to be mal nourished if they consume too many calories. Hence malnutrition can be defined as the insufficient, excessive or imbalanced consumption of nutrients .Several nutrition disorders may develop, depending on which nutrients are lacking or consumed in excess

According to the World health Organization (WHO) malnutrition is the gravest single threat to global public health. Sub nutrition occurs when an individual does not consume enough food. It may exist if the person has a poor diet that gives them wrong balance of basic food groups.

Poor diet may lead to a vitamin or mineral deficiency, among other essential substance, sometimes resulting in scurvy- a condition whereas individual has a vitamin C deficiency. Though scurvy is a very rare disease, it still occurs in some

patients usually elderly people, ,alcoholics, or those that live on diet devoid of fresh fruits and vegetables .Similarly infant or children who are on poor diets for many number of socio economic reasons may be prove to scurvy.

According to National Health Survey (WHS) UK, it is estimated that over 2 million people are affected by malnutrition(sub nutrition).

According Food and Agriculture Organization(FAO), the number people globally who were malnourished stood at 923 million in 2007 an increase over 80 million since 1990-92 base period.

The World health Organization (WHO) say that malnutrition is by and far the largest contributor to child mortality globally, currently present in half of all cases. Under weight birth and inter uterine growth restrictions are responsible for about 2.2 million child deaths annually in the world. Deficiency in vitamin A or zinc cause one million death each year. While malnutrition used to be seen as some thing which complicated such disease as measles, pneumonia, and diarrhoea, it often works in other way round – malnutrition can cause disease to occur.

Globally as well as in developed industrialized countries, the following groups of people are at the highest risk of malnutrition. (sub nutrition).

- Elderly people, especially those who are hospitalized or in long term institutional care.
- Individuals who are socially isolated.
- People of low income (poor)
- People with chronic eating disorders.
- People convalescing after a serious illness or condition.

Sign and symptoms of malnutrition

A symptom is some thing that the patient feels or reports, But a sign is some other which doctor detects. The symptoms and sign of malnutrition includes:-

* Loss of fat.
* Breathing difficulties.
* Depression.
* Longer healing times for wounds.
* Longer recovery times from infections.
* Longer recovery from illness.
* Reduced muscle mass.
* Tiredness, fatigue or apathy.
* Inelastic pale skin and cold
* Cheeks look hollow and eyes sunken
* Hair becomes dry and fall out easily

Children's sign and symptoms

Children who are severely malnourished, typically shows slow behavioral development, even mental retard action may occur. Impairment in mental function and digestive problem persists.

Causes of malnutrition in Developing countries

*Food shortage- In developing nation food shortages caused by the lack of high technology to be implemented in agriculture like nitrogen fertilize, pesticides and irrigation. This food shortages may be the cause of malnutrition .

*Food prices and food distribution- It is ironic that approximately 80% of the malnourished children live in developing nation whose parents can not afford to purchase

the essential food at the prevailing market price. Moreover the food distributional systems of these countries are found to be skewed that causes malnutrition.

*Lack of breast feeding – Some part of the countries, the mother still believes that bottle feeding is better for a child due to the ignorance, illiteracy and awareness.

Prevention of the malnutrition

Malnutrition is mainly caused by not consuming what the National Health Service (N.H.S.), U.K. has prescribed . Hence the nutrient from major food groups can prevent the child malnutrition which includes

Carbohydrates

Fruits and vegetables

Protein

Dairy and fat

The average human should drink at least 1.2 litre of fluid per day.

CONCLUSION

In concluding note it may be suggested that the child malnutrition being a vital indicator of poverty, especially in case of the developing countries like India. The strenuous effort on behalf of govt. and NGO should be made to reduce the incidence of poverty . Therefore utmost care, protection and prevention should be taken at the grass root level to curb growing poverty and malnutrition in India.

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MALNUTRITION REDUCTION IN ODISHA POLICY IMPLEMENTATION AND SUGGESTION

Aseema Sahu

Odisha's landscape is changing with rising income levels, penetration of technology and a new hope on the horizon. There is optimism that things will finally improve for those living in Odisha. But the poverty ratio shows that Odisha is one of poorest states in India. Poverty ratio in southern region is highest followed by the northern and coastal regions. The poverty ratio among the Scheduled Tribes (ST) is high across all regions in the state followed by Scheduled Castes (SC). There is a significant disparity in neonatal, post-natal, infant and under five mortality rates by different caste, wealth and education groups. Infant mortality and under five mortality rates for children born of mothers with no education are about 85.3 and 122.5, respectively. Malaria, measles, respiratory infections are a few diseases to which poorer, malnourished infants and children are especially vulnerable. Repeat infections also worsen their nutritional status.

According to the Orissa Vision document, malaria is the State's main public health problem in Odisha contributes 23 per cent of India's total malarial cases and 50 per cent of its malarial death. Despite biannual campaigns, only 29.5 per cent of children between 12 and 35 months received one dose of Vitamin A in the last 6 months. National Family Health Survey 3 (NFHS-3) data shows that only about 40 per cent reduction of 3.5 per cent of households use iodised salt. Overall, 11.7 per cent children under five had diarrhoea.

Use of ORS was poor. Only 9.4 per cent of households gave more liquids to children with diarrhoea and 39 per cent gave less liquid to children with diarrhoea. Four out of every five households (80.2 per cent) in Odisha do not have proper sanitation. 21.5 per cent of households do not use improved sources of drinking water and only 18.3 per cent treat their water. Anaemia is a major health problem in Odisha, especially among women and children.

Despite all this, Odisha has shown a considerable decline in malnutrition. Odisha has improved the nutritional status of children in the last decade. A total of 40 per cent of children under three and 40.7 per cent of children under the age of five are underweight in Odisha compared with 40.4 and 42.5 in India as a whole (National Family Health Survey 3, NFHS-3). While malnutrition in India fell by only 2.3 per cent from 1998-9, Odisha saw a ten point reduction. There was also a reduction in Infant Mortality Rate (IMR) from 81 to 64.7 per 1000 live births. From this data it is clear that certain things have worked to improve child nutrition in the state where about half of the population lives below the poverty line.

Again according to NFHS-3 data, Odisha has Indians highest weighing efficiency of children below six years. Similarly NFHS-3 also shows that a higher proportion of the poorest quintiles and vulnerable groups (SC and ST) then the better off received supplementary food through the Integrated Child Development Service (ICDS).

Initiation of breast feeding within an hour of birth, pre-lacteal feeding and exclusive breast feeding are better in Odisha than anywhere else. The timely introduction of

complementary feeding (age 6-8 months) is also higher at 66 per cent compared to 53 per cent for the rest of India. The ICDS Management Information System (MIS) also reveals a positive trend in malnutrition reduction during this period.

Despite this progress, malnutrition prevalence remains unacceptably high and anaemia among children has shown only marginal reduction and stands at 74.2 per cent. Encouraging progress but recognition of a long way to go has triggered the Department of Women and Child Development to develop a new operational plan to accelerate the pace of malnutrition reduction. Elements for an under-nutrition reduction strategy focus our attention towards various plans and programmes of Government of Odisha (GoO) and their implementation along with NGO activities.

Elements of an under-nutrition reduction strategy:

- Ø The Government of Odisha (GoO) is committed to improve nutritional conditions of women and children through DWCD along with other government departments and NGOs.
- Ø ICDS – The Integrated Child Development Services (ICDS) under DWCD provides a package of services to children below six years and pregnant and nursing mothers in order to improve their nutrition and health. This is the only programme in the State which has Anganwadi Workers in each and every village. There are now 41, 628 Anganwadi centres in Odisha.
- Ø Also under DWCD Mission Shakti, a campaign for empowering women, was launched in 2001 and now has a Self Help Group (SHG).

- Capacity building on IYCF (Integrated and Young Child Feeding) and IMNCI (Integrated Management of Neonatal Childhood Illness) has improved and focused the counselling skills of frontline workers on key behaviours such as the early initiation of breast feeding.
- Kishori Shakti Yojana (KSY) and Nutritional Programme for Adolescent Girls (NPAG) are designed to strengthen the life cycle approach of girls to acquaint them with different services related to health and nutrition.
- In partnership with the GoO a number of International agencies also work for reducing malnutrition in Odisha.
- The Integrated Nutrition and Health Project was implemented in 1996. The Positive Deviance Approach was initiated in 2004.
- To improve livelihood and food security in the KBK districts, Western Odisha Rural Livelihood Project (WORLP) was implemented. These have a direct bearing on the nutrition of children and women. Rural Employment Guarantee Scheme in Odisha also impacts on household food security.
- The water sanitation mission, Reductive and Child Health Programme, Malaria Control Programme, and the policy of reservation of seats for women in the Panchayat Raj are all likely to have contributed to the reduction of malnutrition in the state.

After finding all these promising trends in nutrition outcomes behaviour and programming, GoO is seeking to

develop a more evidence based nutrition action plan. Because despite all these programmes under-nutrition remains significantly higher in Odisha. It is clear that this problem would have been wider in the absence of ICDS. We know ICDS were designed to address the causes of malnutrition. So, to refocus ICDS on the most important determents of malnutrition is the basic need of the day. The gaps between ICDS policies and implementation have to be addressed. Through decentralised planning and monitoring the information generated at the district and block levels should be analysed and used for decision making.

Practices at institutional, community and household levels, like the early initiation of exclusive breast feeding, timely initiation of complementary feeding, social security measures such as the provisions of supplementary nutrition to all households, micronutrient supplementation, measles immunisation, iodised salt, and fortification of staple foods should be included.

Again strong behavioural change and mobilisation components like, counselling and behavioural change activities, ensuring access to safe drinking water, sanitation and adoption of proper hygiene practices should be worked out.

Emphasis on disease control and prevention activities, education to improve home-based childcare, feeding practices and micronutrient supplementation, better targeting of vulnerable age groups (Children under two and pregnant women), regular growth monitoring, community involvement in planning implementation and monitoring all these should be used to strengthen the implementation of ICDS in Odisha.

GoO has aligned itself with the Government of India and various development partners' resources to overcome major shortcoming in public and private health provision. Over all, it is clear that strengthening the current base together with new actions is expected to accelerate the pace of malnutrition reduction in Odisha in the near future.

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ACCELERATING MALNUTRITION REDUCTION IN ODISHA

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India is home to the greatest population of severely malnourished children in the world. Four hundred million children suffer daily, which is a greater problem then in a Sub-Saharan Africa. Childhood malnutrition is a massive crisis caused by a combination of factors including inadequate or inappropriate food intake, childhood diseases, harmful childcare practices, and improper care during illness; all contributing to poor health and millions of deaths annually. It affects growth potential and the risk of mortality and morbidity in later years of life. Substantial improvements have been made in health and ell being since India's Independence in 1947 but still more than half of all children under the age of four are malnourished, 30 percent of newborns are significantly underweight, and 60 percent of women are anemic. The early years of life are the most crucial because it is when the body develops the most mentally and physically and is most vulnerable to disease and illness. The children of India are malnourished because of factors attributed to overpopulation, poverty, and destruction of environment, lack of education, gender inequality, and inaccessible medical care. Poverty is a major cause of malnourishment because it limits the amount of food available to children causing wasting and lack of vitamins, minerals and nutritional value leading to stunting and low weight. Overpopulation is a serious problem linked to competition for food, shelter and medical care and leads

to malnutrition amongst children, especially in rural areas where access to medical care and food is limited. The population of India has increased from a billion people by 16 million annually escalating the severity of malnourishment and poverty. The environment is affected by pollution of the air, water and land causing problems with food growth, sanitation and illnesses spread through the air and water. A deficiency in the amount of food leaves millions starving, many of whom are children, unable to change their situation. Lack of education is a serious predicament resulting in malnourishment because many are illiterate and unknowledgeable about nutrition, family planning, breast-feeding and parenting. Gender inequality places women, the primary care givers of their children, at a lower social status then men causes them to suffer more because they are last to eat and considered less important continuing the cycle of poverty and malnourishment. Availability of medical care and immunizations are limited to children diminishing their health. All these factors contribute to the devastating amount of malnourished children in India and assistance from the government and international organizations is crucial if this dilemma is to be improved. This paper will focus on the extent of childhood malnourishment in India and what can be done to create sustainable solutions. Malnutrition is more than just hunger or a lack of food. It is a serious and often life-threatening medical condition caused by a diet lacking in essential I calories, proteins, fats, vitamins and minerals.

The malnourished of India are locate4d in urban, but more so in rural, areas where income and food variety is lower. According to the National Family Health Survey of India, 55%

of children live in rural areas. The situation is particularly grave in states like Bihar, Uttar Pradesh, Madhya Pradesh and Rajasthan. 29% of the Indian population is below the poverty line, 70% of which live in rural areas. Nearly 30% of newborns have low birth weights and it is proven that females with little to no education more commonly raise malnourishment than smaller families due to competition for food and medical care. Those who adopt delayed complementary feeding are also at risk of malnutrition. Obesity is not very common but does exist in India. It is said the 2% of the population is overweight, which is low compared to staggering numbers of more than 50% in North America. Obesity is less common due to the fact that the population is generally too poor to afford enough food to over indulge and that a majority of the nation is vegetarian and does not eat a lot of meat and fast food which contains high amounts of fat, sugar, and salt. Children are active walking everywhere and completing chores by hand due to lack of vehicles and technology and work at young ages to bring in an income to help support the family. In other nations such as America, children have easy access to transportation, computers and televisions and therefore exercise les.

To define Malnutrition is more than just hunger or a lack of food. It is a serious and often life-threatening medical condition caused by a diet lacking in essential calories, proteins, fats, Vitamins and minerals.

Babies and young children are particularly vulnerable to the disease if their mothers are unable to introduce sufficient food into their4 child's diet whilst weaning them off breast milk. This time between the age of six months and two years

is one of rapid growth, when a diet, lacking in essential nutrients can have a serious and profound impact on a child's long term health and development.

Consequences of Malnutrition

Children suffering from malnutrition have an extremely compromised immune system and are 10 times more likely to die of treatable illnesses like chest infections or diarrhea. If malnutrition is left untreated, a child's physical growth and mental development can become permanently impaired, and in severe cases they can lose their lives.

The effective and ongoing treatment of severe and acute malnutrition requires a trained medical response that relies on rapid access to resources and trained staff. Medicines Sans Frontiers is one of the few organizations that is able to treat severe acute malnutrition, and we need your help in order for these programs to continue

1. Malnutrition and the Picture of Odisha

Odisha has improved the nutritional status of children the last decade. A total of 40 percent of children under three and 40.7 percent of children under five are underweight in Odisha, compared with 40.4 and 42.5 percent in India as a whole (National Family Health Survey 3, NFHS-3). While malnutrition in India fell by only 2.3% from 1998-9, Odisha saw a ten point reduction. There was also a reduction in the infant mortality rate (IMR) from 81 to 64.7 per 1,000 live births. His suggests that certain things have 'worked' to improve child nutrition, despite the persistently high incidence of poverty in the state where about half of the population lives below the national poverty line. According to NFHS-3

data, Odisha has India's highest weighing efficiency of children below six years (56.1% as compared with the average of 18.2%). NFHS-3 also shows that a higher proportion of the poorest quintiles and vulnerable groups (Scheduled Castes and Scheduled Tribes than the better off received supplementary food through the Integrated Child Development Service (ICDS). Indicator4s that support improvement in nutritional status like initiation of breast-feeding within 1 hour of birth, pre-lacteal feeding and exclusive breast feeding are better in Odisha than elsewhere in India . The timely introduction of complementary feeding (age 6-8 months) is also higher at 66 percent compared with 53% for the rest of India. The positive improvement from NFHS-2 to N

FHS-3 is confirmed by the District Level Household Surveys (DLHS)-2 and DLHS-3 conducted as part of the Reproductive and Child Health Programme (Table-1). The ICDS Management Information System (MIS) also reveals a positive trend in malnutrition reduction during this period. Despite this progress malnutrition prevalence remains unacceptably high and anaemia among children (6-35 m has shown only marginal reduction and stands at 74.2%. In these circumstances of continual challenges in spite of progress made, the Department decided to conduct a study to inform the development of an evidence-based nutrition plan. The purpose was to understand the factors contributing to this success and to identify persistent gaps that still need to be addressed to accelerate the reduction in malnutrition. A number of studies have highlighted the problems in delivery of nutrition and health services. It was decided to develop an integrated, evidence-based operation plan to address

child malnutrition in Odisha, particularly for the most vulnerable sections. The study has three aspects; a desk review of global and context specific evidence on malnutrition interventions; secondary data analysis of the current ICDS scheme; and a field study in selected districts of Odisha. These informed the preparation of the State's nutrition plan.

Table -1 : Nutrition input Indicators, Odisha (%)

2. Major determinants of persistent under nutrition in Odisha Despite recent economic growth, Odisha is one of the poorest states in India. As **Table 2 Shows,** the poverty ratio in the Southern region is highest followed by the northern and coastal regions. The poverty ratio among the Scheduled Tribes (ST) is high across all regions in the state followed by Scheduled Castes (SC).

Table – 2 : Regional poverty ratio(%) by caste/ethnic groups for rural Odisha, 2004 – 05

Region	SC	ST	OBC	Others	All
Southern	82.8	67.2	64.7	44.1	72.7
Northern	72.8	64.4	48.6	33.9	59.1
Coastal	67.7	32.8	24.4	19.0	27.4
Rural Odisha	75.8	49.9	37.1	23.5	46.9
Rural India	44.7	37.1	25.8	17.5	28.1

Source – Calculated from unit level data, NSS 61st round, 2004 -05, based on URP OBC, other backward classes.

The NFHS 2005 – 06 data indicate that there is a significant disparity in neonatal, post-neonatal, infant and under –five mortality rates by different caste, wealth and education groups. The lowest and second lowest groups in the wealth quintile experience the highest mortality. The Infant mortality and five mortality rates for children born of mothers with no education are about 85.3% and 122.5%, respectively (male literacy in Odisha in 2001 Census i9s 75.96% but only 50.51 percent of females (SC-40% and ST 24%) are literate as against State Literacy Rate of 63.08% southern districts like Koraput had only 35.72% literate, Malkangiri 30.53 percent, Nawarangpur 33.93%.

Malaria, measles, respiratory infections and diarrhea are common infections to which poorer, malnourished infants and child children are especially vulnerable. Repeat infections also worsen their nutritional status. According to the Odisha Vision 2010 documents, malaria is the state's main public health problem. Odisha contributes 23 of India's total malaria cases, and 50% of its malaria deaths. Despite biannual; campaigns, only 29.5% of children between 12 and 35 months received one dose of Vitamin A in the last sis months. NFHS – 3 data shows that only about 40% of households use iodised salt (>15ppm iodine) – a marginal increase from NFHS – 2 (35 percent). Overall, 11.7 percent children under 5 had diarrhea in the two weeks prior to the NFHS Survey. Use of ORS was poor in households where children suffered from diarrhea. Only 9.4 percent of households gave more liquids and 39 percent gave less liquid to children with diarrhea. Four out of every five households (80.2%) in Odisha do not have sanitation (NFHS-3); 21.5% of households do not use improved sources of drinking water

and only 18.3 percent treat their water. Anaemia is a major health problem in Odisha especially among women and children. Almost two-thirds (65 percent) of children aged 6-59 months are anaemic; 34.5 percent of them are moderate and 1.6 percent suffer from severe anaemia. Anaemia among children aged 6-35 months is slightly higher in NFHS-3 than in NFHS-2 seven years ago. The prevalence of anaemia among 'ever married women' remained almost unchanged over this period. Odisha is culturally diverse with 93 castes, 62 tribes and three main religious groups. Traditions, cultures and practices vary across caste/ethnic and religious groups, and some of these variations many have a bearing on food habits. All this diversity poses a challenge for service providers in the state. Irrespective of efforts and strategies to address determinants there remains a huge gap and the multi factorial causes of under nutrition can only be partially ameliorated by any one scheme or department. Despite all this, Odisha has shown a considerable decline in malnutrition.

3. Elements for an under nutrition reduction strategy :-

The Government of Odisha GoO) is committed to improving the nutritional outcome of women and children through effective service delivery and by increasing demand for services, by the poorest and the most difficult to reach populations. To achieve their goal, the DWCD, implemented a number of innovative approaches with other government departments, developmental partners and NGOs.

ICDS: The Integrated Child Development Services (ICDS) under DWCD implements interventions aimed at reducing

under nutrition. It provides a package (supplementary nutrition, immunization, health check-up, referral services, preschool and nutrition and health education) of services to children below six years and pregnant and nursing mothers in order to improve their nutrition and health. With the universalisation of ICDS, outreach has expended. This is the only programme in the state which has an extension worker, an anganwadi worker (AWW), in each and every village. Starting from one project in 1975-76 ICDS now has 326 projects (314 rural and 12 urban) covering all blocks. There are now 41,697 Anganwadi Centres (AWCs) and 4,819 mini AWCs and the ministry has approved almost 50 percent additional AWCs. Table4 shows that use of ICDS was highest by children and women from ST and SC communities and by the lowest wealth qualities. ICDS has succeeded in reaching those with the worst nutritional indicators.

§ Also under DWCD Mission Shakti, a campaign for empowering women, was launched in 2001 and now has a Self Help Group (SHG) with members across the state who have increased women's participation in various government programmes, including ICDS.

§ Capacity building on IYCF (Integrated and young Child Feeding) and IMNCI (Integrated management of National Childhood illness) has improved and focused the counseling skills of frontline workers on key behaviours such as the early initiation of breast feeding.

▪ KIshori Shakti Yoiana (KSY) and Nutritional Programme for Adolescent Girls (NAPAG) are designed to strengthen the

life cycle approach and enhance the understanding of adolescent girls to acquaint them with different services related to health and nutrition. In partnership with the GoO a number of international agencies also provided technical and operation support to deducing malnutrition in Odisha.

- The Integrated Nutrition and Health Project (INHP) was implemented in 30 percent of state from 1996. The4 Positive Deviance approach which was initiated in 2004 in three projects has now expanded tro 16 percent.
- Programmes implemented in the KBK districts like Western Odisha Rural Livelihood Project (WORLEP) to improved livelihoods an d food security. These have a direct bearing on the nutrition of children and women. National Rural Employment Gurantee Scheme (NREGS) in Odisha also impacts on household food security.
- The Water Sanitation Mission, Reproductive4 and Child Health Programmed, Malaria Control Programme, and the policy of 33 percent reservation of seats for women in the Panchayat Raj are likely to have contribution to the reduction of malnutrition in the state. Key factors for effecti9veness in these programmes include:-
- Intersectoral convergence between departments most specifically with the Department of Health (health check-up, immunization, management of malnutrition, treatment of diarrhea, de-worming and distribution of simple medicines, referral services and verbal autopsy) and Rural Development are key contributing factors.
- Capacity building of AWWs and the AWW reward mechanism has motivated frontline workers.
- Growth monitoring more specifically community based nutrition analysis and prevalence of malnutrition analysis.

- The involvement of community groups like SHGs and mothers' committees has brought a healthy competitive environment of change in the village.

Malnutrition, however, findings from studies carried out by different agencies point to the need to refocus ICDS services on the most important determinants of malnutrition. Involving communities sin implementation and monitoring strengthened the implementation of ICDS in Odisha. The gaps between ICDS policies and implementation have to be addressed. Monitoring and evaluation activities could be strengthened through the establishment of joint review mechanisms at all levels. Through decentralized planning and monitoring the information generated at the district and block levels should be analised and used for decision making. A literature review indicates that all the approaches used to combat malnutrition nationally and internationally include a package of the following interventions :-

Practices at institutional, community and they household levels; like the early initiation of exclusive breastfeeding, timely initiation of complementary nutrition to all households, micomutrient supplementation, measles immunization, iodised salt and fortification of staple foods. Strong behavior change and mobilization components like, counseling of mothers amnd care givers on infant and young child feeding practices.

Capcity building of service providers and community groups – skill upgrading of AWWs and community motivators for effective counseling and behavior change activities, ensuring access to safe drinking water, sanitation and adoption of proper hygiene practices. Emphasis on disease control and prevention activities, education to improve home-based childcare, feeding practices and micronutrient

supplementation, better targeting of vulnerable age groups (children under two and pregnant women), regular growth monitoring , community involvement in planning, implementation and monitoring all strengthened the implementation of ICDS in Odisha. The evidence unequivocally highlights the extremely poor nutritional status of scheduled tribes, and scheduled castes. To address the substantial gaps and to better respond to their needs a two-pronged approach is propose

(1) Improving and strengthening the service delivery with decentralized planning and monitoring being the state wide approach and

(2) Ensuring community participation and integrated behavior change communications in the high burden districts. Establishment of state and district project management units in high burden districts in planned to fast track the implementation of quality services. A web-based MIS is proposed to help inform decisions at local level.

4. Developing the nutrition plan

The comprehensive Odisha Health Sector Plan (OHSP 2007-12) provides an opportunity for the GoO to align itself with the Government of India and various development partners' resources to combine efforts to meet the state's goals and overcome major shortcomings in public and private health provision. The plan aims to achieve equity in health overcomes and focuses on concerns into their programmes, recognizing that

livelihoods are a major determinant of nutrition, there is a need to coordinate with RDD's employment guarantee schemes. Promoting access to sanitation, safe drinking water, and the adoption of positive hygiene practices are also critical.

Monitoring a results-based framework: Results based implementation mechanism aims at an approach to management that integrates strategy, people, resources, processes and measurements to improve decision-making, transparency, and accountability. The focus is on outcomes, implementing performance measurement and learning. The Nutrition Plan is expected to produce results in the entire state with measurable change in 15 high burden districts for the reduction of moderate and severe malnutrition in children under two years, reduction in the proportion of newborns with a birth weight under 2.5 kg, and reduction in nutritional anaemia in women and children.

5. Conclusions

While undernutrition in Odisha has decreased substantially over the past five years, it remains at high levels. Importantly, the burden is very unevenly spread with the ST and SC groups remaining the worst off despite the highest usage rates of ICDS. We conducted some additional analysis to help guide the new nutrition action plan for Odiisha. The focus is on improving ICDS and on improving convergence with other Departments by strengthening supply and demand for undernutrition services through a combination of strengthening existing structures and activities accelerate the pace of malnutrition reduction.. The Four-Year Plan has the aim of reducing malnutrition by 3.5 per cent annually. As the article has shown, there are many unresolved puzzles about why undernutrition has declined. To understand how future public policy has contributed to future changes in undernutrition, there is a clear need for stronger impact analysis.

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CAUSES AND CONSEQUENCES OFMALNUTRITION

Narendra Kumar Sahoo

When one is devoid of most needed food substances that build human cells and provided energy it is said that he is suffering from malnutrition. Cases of malnutrition are mostly found in infants and women. It doesn't mean that the male members are not vulnerable to it.

Poverty breeds malnutrition. India is a country where largest no of poor people of the world live. According to the U>N>O> Report 45% of Indian population live below poverty line though Indian Statistical Survey says 29.3% of Indian population live below poverty line. Their income is too low to meet the minimum requirements of life like food, water, clothing and shelter etc. It is natural that the consumption level of those who live in absolute poverty is low. 2400 calories intake in rural area and 2100 calories intake in urban area are the indicators of poverty line. All it means that 29.3% of our population do not get it from the food they eat. It is natural therefore they are suseptable to malnutrition.

In rural economy like India 76 % of people live in rural area. They mainly depend on agriculture. But most of the land is rain-fed. When nature becomes foe and monsoon fails agricultural productivity falls. With fall of productivity rural income and per capita consumption falls.

We see the bleak picture of disguised unemployment and under employment in agriculture because there is no alternative work to absorbe the surplus manpower. This breeds poverty and in turn breeds malnutrition.

Nearly 69% of Indian population depends on agriculture. To drive their livelihood they sell their agricultural product. Besides most of the agricultural products are wasted.

The fruits and vegetables which the farmer produces in his backyard and field are sold at low price to the middle man due to their short life. They produce the best thing but they con't consume it. A poor man for example sells his cocks eggs, milk and vegetables. They have compulsion. It is seen that some Tribal Communities never milk their cows and never drink milk. Even it they do not sell it to some other. This is a reason for malnutrition.

There are some people of Tribal Communities, who are addicted to wine say Mahuli or Handia. They can forgo food but they can't forego Handia. Their day begins and ends with Handia. They wash their mouth in the morning with Handia or Mahuli wine. To get money for it they sell the valuable things necessary for health like milk, eggs, guavas, papaya etc. This is main reason why their child suffer from malnutrition.

Due to poverty the poor have big sized family. To support it, to earn more money they are always busy in work. They have no leisure. They have no to to see the health and nutrition of family hardly give their wives nutritious food. The women oft keep themselves confined to dirty works. So they and their baby in the womb are vulnerable to diseases and infection. Lack of proper food on one hand and infections and disease on the other give birth to a under weight child.

There is inter generation transfer of malnutrition. A malnourished mother give birth to a malnourished child. A malnourished child becomes a malnourished adult.

After 64 years of independence we have still illiteracy and superstitions. Still 30% of Indian population are illiterate. illeterate people can not understand what malnutrition is and what is't consequences is. Some mothers think child as gift of God. Absence of gap between child birth brings broken health and malnutrition of mother and child.

Malnutrition is measured by under weight. The under weight mother and the infants are vulnerable to diseases and infection. Often they die leading to high mother and infant motality.

The mother can't give birth to a child so both the mother and child die. It robs the family of happiness.

Recommendations :-

Child malnutrition is an indicator of poverty. Absence of malnutrition and low infant mortality may be an index of development. So to check malnutrition :-

(a) Illiteracy should be removed.

(b) Health for all programme should be implemented properly.

(c) Qualitative health services should be provided.

(d) Poverty should be rooted out.

(e) People should be made conscious about gravity of problem.

(f) Govt should provide moral services.

(g) Govt. should emphasize on minimum needs programme.

Annapurna Jojana, Antardoya Johana, Indira Awas Jojana, Mahatma Gandhi Sunischita Rojgar lojana and Mid-Day meal Programme.

(h) Safe drinking water should be provided to all.

(i) Doctor, patient, ratio should be raised.

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CHILD AND MATERNAL NUTRITION IN INDIA

Niranjan Pathi

Child malnutrition in India is called "The Silent Emergency" The proportion o9f under-nutrition among children and women in India is one of the highest in the world. India is committed to halving the existence of underweight children by 2015 as one of the key indicators of progress tow3ards the millennium development Goal(MGD). Inspite of rapid economic growth improvements in childhood nutritional status in India over the last decade is slow. Infant and young child feeding practices continue to be a serious challenge to reducing malnutrition among children. High rates of maternal under-nutrition is measured by low body mass index and anemia adversely affect the health and survival of mothers and new borns.

Nutrition in India

(a) One in every 3 malnourished children in the world live in India.

(b) South Asia has the highest rates and largest number of malnourished children int eh world, with 47% of children in India aged fewer than 5 are severely malnourished.

(c) Malnutrition results not just from limited food intake. It is also caused by lack of aqccess to health services. Poor feeding practices and infection. Malnutrition is perpetuated from one generation to the next. Poorly nourished mothers give birth to babies weighing too little and lacking sufficient nutrition.

(d) One third of the adult women in India are underweight . Due to malnutrition during pregnancy 26% of India infants are born at a dangerously nlow birth weight (less than 2.5Kg) low birth weight babie4s have higher risk of mortality in the neonatal period (first 28 days of life) than normal birth weight babies.

(e) The current probability of a child dying before his first birth day is 9%. It is estimated that at least half of these deaths are related to malnutrition associated with infectious diseases.

(f) Malnutrition can also heave serious long term consequances as it impedes motor, sensory, cognitive and social development. Malnourished children will be less likely to benefit from schooling.

(g) Breast feeding is essential for infants, providing them with a source of baanced nutrition and antibodies against disease. An estimated 37% of children in India under 6 months are exclusively breast fed.

H) Vitamin and mineral deficiencies can also affect childrens survival and development. Iodine deficiency can reduce learning capacity by up to 13%, and increase the risk of death during child birth and in India this is wide spread as less than 50% of all households use iodised salt.

(i) Iron deficiency affects 44% of women in developing countries but in India it is nearly 70%.

(j) Vitamin A deficiency can cause blindness and increase morbidity and mortality among pre-schoolers. Direct nutrition programmes can help alleviate this.

Improving nutrition requires focused local and national action to provide health and nutrition education and services, such as the promotion of exclusive breast feeding with prenatal care and basic maternal and child health services. Micro nutrient supplements and fortified food. Under nutrition jeo paradizes childrens survival, health, growth and development and slows national progress towards development goals. Under nutrition is often an invisible problem. Large scale programmes including the promotion, protection and support of exclusive provision of vitamins and minerals through fortified foods and supplements and community based treatment of severe acute malnutrition could have been successful in our country. Unsafe water, inadequate sanitation and poor hygiene increase the risk of diarrhea and other illnesses that deplete children of vital nutrients and can lead to chronic malnutrition and increase the risk of death.

Improving child and maternal nutrition is not only feasible but also affordable and cost effective. Nutrition interventions among the best investments in development that countries can undertake. In India 48% of children under 5 years old are moderately or severely stunted. Stunting is an important predictor of child development, it is associated with reduced school outcome. Compared to children who are not stunted, stunted children often enroll later. Complete fewer grades and performs less well in school. This poor performance leads to reduced productivity and income earning capacity in adult life.

Malnutrition is a violation of child rights

The convention on the Rights of the child emphasizes children's right to the highest attainable standard of health

and places responsibility on the state to combat malnutrition. It also requires that nutritious food is provided to children and that all segments of society are supported in the use of basic knowledge of child nutrition must be placed on high in national international agenda if this right is to be fulfilled.

Malnutrition greatly impedes countries socio-economic development and potential to r5educe poverty. Many of the millennium Development Goals(MDGs) – particularly MDG-1 (eradicate extreme poverty and hunger) MDG-4 (reduce child mortality) MDG -5 (Improve Maternal Health) will not be reached unless the nutrition of women and children is prioritized in national development programmes and strategies with high magnitude of malnutrition in developing countries, vital opportunities to save millions of lives are being lost and many more children are not growing and thriving to their full potential.

Progress for children lies at the heart of all MDGs. Along with cognitive and physical development proper nutrition contributes significantly to declines in under 5 mortality rates, reduction in disease and poverty, improvement in maternal health and gender equality.

What is to be done

A heightened level of political commitments, significant increases in resources and strong leadership to combat the nutrition emergency. Policies translated into concrete and well coordinated, convergent actions. Information and monitoring systems that focuses on results of nutrition interventions rather than inputs. Communications strategies and interventions that emphasize behavior change4. Targeting children less than 2 years of age for improved

quality, quantity and frequency of infant and young child feeding. Provision of micro nutrient supplement to children and women. A better understanding of the direct and indirect causes of persistant and recurring severe and moderate malnutrition. More evidence3 of the effectiveness of community and facility based rehabilitation for severely and moderately mal nourished children.

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CHILD MALNUTRITION AND THE ROLE OF ICDS

Alaka Manjari Bhuyan

Introduction

Children are the human resderie and assets of a country. A nation's health is gauged through the health of its children. It is therefore, essential that children are allowed to grow in an environment which is suitable to meet their social environmental and educational needs. Development of children has to be priority item in the country's development agenda. Today's child is the future citizen of tomorrow. So for the healthy growth of a child special attention is required to be paid for nutrition.

But now it is observed that most of the children are malnourished specially in rural areas due to so many factors. Malnourished children in general became the malnourished adult w3ith leass capability and there is intergeneration transfer for malnutrition and poverty. Malnutrition is commonly seen in children and the greatest contributors to child mortality. Malnutrition is not always due to starvation but it could also be a result of some intestinal disorder. Celiac disease is one of such disorder which is triggered by a protein called gluten. By far the major reason for malnutrition is starvation. Hunger and malnutrition is closely related. World over there are problems of hunger and poverty which are major factors leading to malnutrition. A person who goes hungry without having food is not only affected by malnutrition but also his growth became stunted.

Child Malnutrition

Children do not became malnourished in a day or two. It is a gradual process and takes place over a period of tim e. If the symptoms of malnutrition can be diagonised at an early stage and treated, then they can be saved from malnutrition. Malnutrition can be diagonised through frequent weight measurement of a child. Average body weight of a child in different stage is given below :-

Average Body Weight

At the time and age of						
Birth	6 months	1 Yr	2 Yrs	3 Yrs	4 Yrs	5 Yr
2.5	7	9	11	13.5	15	17

(All are in Kilos)

If the weight of the child is less than the average weight for age then he/she is considered a weak child. If the child becomes very weak than it can fall prey to disease like Kwashiorkor (swelling) or marasmics.

Symptoms of Kwashiorkor (Swelling)

(a) Swelling in the eyes, face, hands, feet

(b) Distension of abdomen.

© Mental Changes.

(d) Anaemia.

(e) Patches in the skin.

Symptoms of Marasmics

(a) Enlargement of the size of head.

(b) Appearance of wrinkles on the face of the child.

© Anaemia.

(d) Muscles become slack and atrophic.

(e) Shrinkings of arms and legs.

(f) Child become lethargic and irritable.

The Role of ICDS

ICDs that is Integrated Child Development Service Scheme launched on 2nd October 1975 by the Union Ministry of Educationand Social Welfare. Today ICDs scheme represents one of the worlds largest and most unique programmes for early childhood development . ICDs is the foremost symbol of India's commitment to her children – India's response to the challenge of providing pre-school education on one hand and breaking the vicious cycle of malnutrition, thus reducing mortality on the other.

The Objectives of ICDs are :-

(a) To improve the nutritional and health status of children in the age group of 0-6 Years.

(b) To lay the foundation for proper psychological, physical and social development of the child.

© To reduce the incidence of mortality, morbidity, malnutrition and school drop out.

(d) To achieve effective coordination of policy and implementation amongst the various department to promote child development and

(e) To enhance the capability of the mother to look after the normal health and nutritional need of the child through proper nutrition and health education.

The scheme aims at providing integrated services comprising (i) Supplementary nutrition (ii) Immunization

(iii) Health Checkup (iv) referral services (v) non formal pre school education (3 to 6 yrs children only) (vi) nutrition and health.

Supplementary Nutrition

This includes supplementary feeding and growth monitoring and prophylaxis against vitamin A deficiency and control of nutritional anemia. At Anganwadi Centre supplementary food is provided the children below the age of 6 years and pregnant and nourishing mothers. By providing supplementary feeding, the Anganwadi attempts to bridge the caloric gap between the national recommended and average intake of children and women in low income and disadvantag3ed community. Supplementary Nutrition Norms is given below:-

Supplementary Nutrition Norms

Category	Pre-revised		Revised	
	Calories(K)	Protein(g)	Calories(K)	Protein(g)
Children 6-72 Months)	300	8-10	500	12 – 15
Severely mal-Nourished Children(6-72 months)	600	20	800	20 – 25
Pregnant women Nourishing Mother	500	15-20	600	18 – 20

Growth monitoring is also an important activity that is undertaken. Children below the age of three years of age are weighed once a month and children 3 – 6 years of age are weighed quarterly. Weight for age growth cards are maintained for all children below six years. This helps to

detect growth flatering and helps in assessing nutritional status.

Immunization

Immunization of pregnant women and infants protects children from six vaccine preventable diseases i.e. poliomyelitis, diphtheria, pertusis, tetanus, tuberculosis and measles. These are major preventable causes of child mortality, disability, morbidity and related malnutrition.

Health Checkups

This includes health care of children less than six years Of age, antenatal care of expectant mothers and postnatal care of nourishsing mothers. The various health services provided for children by Anganwadi Workers and PHC staff include regular health che3ck ups, recording of weight, immunization, management of malnutrition, treatment of diarrhea etc.

Referral Services

During health check-ups and growth monitoring sick or malnourished children, in need of prompt medical attention are referred to the Primary Health Centre or its sub-centre. The AWW enlist all such cases in a special register and refers them to the medical officer of the PHC.

Non-formal pre school Education

The Non formal pre school education (NPE) component of the ICDs may well be considered backbone of the ICDS programme, since all its services essentially converge at the Anganwadi – a village court yard. PSE as envisaged in the ICDs , focus on total development of the child , in the age upto six years. Its programme for the three to six years old children in the anganwadi is directed towards providing and ensuring a

natural, joyful and stimulating environment, with emphasis on necessary inputs for optimal growth and deveopment.

Nutritional and Health Education

Nutrition and Health Education is a key element of the work of the anganwadi workers. This form part of BBC (Behaviour Change Communication) strategy. This has long term goal of capacity building of women – especially in the age group of 15 – 45 years, so that they can look after their own health, nutrition and development needs as well as that of their children and families. The method of carrying out the message of nutrition and Health education includes use of mass medias and other forms of publicity, specially campaigns and home visit by anganwadi workers, especially organized short courses in the villages, demonstaration of cooking and feeding and utilization of health and nutrition education programme of the different union ministers.

Plans to reduce mal-nutrition among children

The ICDs scheme will aim at to reduce malnutrition among children by adopting the following steps

(a) In order to reduce malnutrition among children 0-6 years, children are weighed every month in a regular manner. However focus is made more on 0 – 3 years age group children.

(b) Under referral service a referral day is sbeing observed in the name of Pustikar Divas at the PHC/CHC on 15th of every month on fixed day basis as a joint venture of Health & Family Welfare Development and WCD Department. On this day severly malnourished children and children with growth flattering are referred to PHC/CHC for examination.

© Positive Deviance Approach is an innovative approach is implemented to improve the early childhood care practices

which intum contribute to improve the nutritional status of the child in the age group of 0 – 3 Years. Under this scheme nutritional counseling and child care sessions for 12 days in a month are conducted at AWC where father/mothers or care givers of malnourished children learn PD practices through participatory learnings.

(d) The health check up should be done every month through fixed health day at AWCs. The supervisor and ANM would monitor the session on health and nutrition issues both for the mother and children.

(e) Regular growth monitoring is a tool for preventing malnutrition and for early detection of growth faltering. All AWC will be provided a baby weighing scale and growth charts.

(f) The ICDS programme should aim ad improving mothers feeding and carring behavior with emphasis on infant and young child feeding and maternal nutrition during pregnancy and lactation. Breast feeding is the best nutrition for the new born.

(g) Recently the state govt of Odisha launched Mamata Scheme (Women & Child Development Dept) to prevent malnutrition. It gives financial assistance to the poor pregnant women for antenatal and postnatal care. This scheme is worked out through ICDS.

Malnutrition kills 5 million children every year i.e one child every six seconds. So it is an acute problem for all and special attention should be given by the Govt as well as communities.

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MALNUTRITION :

A CONCERN OF THE DAY

Dr. Annapurna Dhal

According to the 1991 census of India, it has around 150 million children, constituting 17.5% of India's population, who are below the age of 6 years. The World Bank estimates that India is ranked 2nd in the world of the number of children suffering from malnutrition, after Bangladesh (in 1998), where 47% of the children exhibit a degree of 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 consequences for mobility, mortality, productivity and economic growth. The UN estimates that 2.1 million Indian children die before reaching the age of 5 every year – four every minute – mostly from preventable illnesses such as diarrhoea, typhoid, malaria, measles and pneumonia. Every day, 1,000 Indian children die because of diarrhoea alone.

The 2011 Global Hunger Index (GHI) Report ranked India 15th, amongst leading countries with hunger situation. It also places India amongst the three countries where the GHI between 1996 and 2011 went up from 22.9 to 23.7, while 78 out of the 81 developing countries studied, including Pakistan, Nepal, Bangladesh, Vietnam, Kenya, Nigeria, Myanmar, Uganda, Zimbabwe and Malawi, succeeded in improving hunger condition.

According to Medilexicon's medical dictionary:

- **Malnutrition** is *"Faulty nutrition resulting from malabsorption, poor diet, or overeating."*

- **Under nutrition** is *"A form of malnutrition resulting from a reduced supply of food or from inability to digest, assimilate, and use the necessary nutrients."*

Malnutrition is a broad term which refers to both **under nutrition** (sub nutrition) and **over nutrition**. Individuals are malnourished, or suffer from under nutrition if their diet does not provide them with adequate calories and protein for maintenance and growth, or they cannot fully utilize the food they eat due to illness. Malnutrition can also be defined as the insufficient, excessive or imbalanced consumption of nutrients. Several different nutrition disorders may develop, depending on which nutrients are lacking or consumed in excess. According to the World Health Organization (WHO), malnutrition is the greatest single threat to global public health. **Sub nutrition** occurs when an individual does not consume enough food. It may exist if the person has a poor diet that gives them the wrong balance of basic food groups.

According to the Food and Agriculture Organization (FAO), the number of people globally who were malnourished stood at 923 million in 2007, an increase of over 80 million since the 1990-92 base periods. The World Health Organization (WHO) says that malnutrition is by far the largest contributor to child mortality globally, currently present in half of all cases. Underweight births and inter-uterine growth restrictions are responsible for about 2.2 million child deaths annually in the world. Deficiencies in vitamin A or Zinc cause 1 million deaths each year. WHO

adds that malnutrition during childhood usually results in worse health and lower educational achievements during adulthood. Malnourished children tend to become adults who have smaller babies. Globally, as well as in developed, industrialized countries, the following groups of people are at highest risk of malnutrition (sub nutrition):

- Elderly people, especially those who are hospitalized or in long-term institutional care Individuals who are socially isolated
- People on low incomes (poor people)
- People with chronic eating disorders, such as bulimia or anorexia nervosa
- People convalescing after a serious illness or condition

What are the signs and symptoms of malnutrition?

A symptom is something the patient feels and reports, while a sign is something other people, such as the doctor detect. For example, pain may be a symptom while a rash may be a sign. Signs and symptoms of malnutrition (sub nutrition) include:

- Loss of fat (adipose tissue)
- Breathing difficulties, a higher risk of respiratory failure
- Depression
- Higher risk of complications after surgery
- Higher risk of hypothermia - abnormally low body temperature
- Total number of some types of white blood cells falls; so, the immune system is weakened, increasing the risk of infections.

- Higher susceptibility to feeling cold
- Longer healing times for wounds
- Longer recover times from infections
- Longer recovery from illnesses
- Lower sex drive
- Problems with fertility
- Reduced muscle mass
- Reduced tissue mass
- Tiredness, fatigue, or apathy
- Irritability In more severe cases
- Skin may become thin, dry, inelastic, pale, and cold
- Eventually, as fat in the face is lost, the cheeks look hollow and the eyes sunken
- Hair becomes dry and sparse, falling out easily
- Sometimes, severe malnutrition may lead to unresponsiveness (stupor)
- If calorie deficiency continues for long enough, there may be heart, liver and respiratory failure
- Total starvation is said to be fatal within 8 to 12 weeks (no calorie consumption at all)

Children - children who are severely malnourished typically experience slow behavioral development, even mental retardation may occur. Even when treated, under nutrition may have long-term effects in children, with impairments in mental function and digestive problems persisting; in some cases for the rest of their life. Adults, whose severe undernourishment started during adulthood, usually make a full recovery when treated.

What are the causes of malnutrition?

Malnutrition, the result of a lack of essential nutrients, resulting in poorer health, may be caused by a number of conditions or circumstances. In many developing countries long-term (chronic) malnutrition is widespread - simply because people do not have enough food to eat. In more wealthy industrialized nations malnutrition is usually caused by:

- **Poor diet** - If a person does not eat enough food, or if what they eat does not provide them with the nutrients they require for good health, they suffer from malnutrition. Poor diet may be caused by one of several different factors. If the patient develops dysphagia (swallowing difficulties) because of an illness, or when recovering from an illness, they may not be able to consume enough of the right nutrients.

- **Mental health problems** - Some patients with mental health conditions, such as depression, may develop eating habits which lead to malnutrition. Patients with anorexia nervosa or bulimia may develop malnutrition because they are ingesting too little food.

- **Mobility problems** - People with mobility problems may suffer from malnutrition, simply because they either cannot get out enough to buy foods, or find preparing them too arduous.

- **Digestive disorders and stomach conditions** - Some people may eat properly, but their bodies cannot absorb the nutrients they need for good health. Examples include patients with Crohn's disease or ulcerative colitis. Such patients may need to have part of the small intestine removed. Individuals who suffer from Celiac disease have a genetic disorder that makes them intolerant to gluten. Patients with Celiac disease have a higher risk of damage

to the lining of their intestines, resulting in poorer food absorption. Patients who experience serious bouts of diarrhea and/or vomiting may lose vital nutrients and are at higher risk of suffering from malnutrition.

- **Alcoholism** - Alcoholism is a chronic (long-term) disease. Individuals who suffer from alcoholism can develop gastritis, or pancreas damage. These problems also seriously undermine the body's ability to digest food, absorb certain vitamins, and produce hormones which regulate metabolism. Alcohol contains calories, reducing the patient's feeling of hunger, so he/she consequently may not eat enough proper food to supply the body with essential nutrients.

In poorer, developing nations malnutrition is commonly caused by:

- **Food shortages** - in poorer developing nations food shortages are mainly caused by a lack of technology needed for higher yields found in modern agriculture, such as nitrogen fertilizers, pesticides and irrigation. Food shortages are a significant cause of malnutrition in many parts of the world.
- **Food prices and food distribution** - it is ironic that approximately 80% of malnourished children live in developing nations that actually produce food surpluses (Food and Agriculture Organization). Some leading economists say that famine is closely linked to high food prices and problems with food distribution.
- **Lack of breastfeeding** - experts say that lack of breastfeeding, especially in the developing world, leads to malnutrition in infants and children. In some parts of the world mothers still believe that bottle feeding is better for the child.

Another reason for lack of breastfeeding, mainly in the developing world, is that mothers abandon it because they do not know how to get their baby to latch on properly, or suffer pain and discomfort.

Identifying malnutrition

Malnutrition can be identified into two constituents, protein-energy malnutrition and micronutrient deficiencies, where protein-energy malnutrition is clearly observed in India and other developing countries. There are different methods of identifying malnutrition; physical findings generally help in the diagnosis of advanced malnutrition. In identifying it early in the development malnutrition, it is of advantage to allowing early rehabilitation. One of the classifications of protein-energy malnutrition is done by Gomez, which uses anthropometric indices.

Degrees of malnutrition

Gomez classification of PEM:

Degree of PEM % of desired body wt. for age and sex

- Grade I. Severe Malnutrition (90%-100%)
- Grade II. Moderate Malnutrition (75%-89%)
- Grade III. Mild Malnutrition (<60%)

Protein-energy malnutrition can also be classified as marasmus, kwashiorkor, or a combination of both. In marasmus conditions are characterized by extreme wasting of the muscles and a daunt expression; where kwashiorkor is identified as swelling of the extremities and belly, which is deceiving to their actual nutritional status.

Nutritional trends of various demographic groups

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

❖ **Gender** - Women tend to be at higher risk of both under and over-nutrition than men. Nearly 50% of females aged 15 – 19 face under-nutrition, with a very low percentage of over-nutrition, however this trend reverses with age. As women get older, they are more at risk for over-nutrition and less for under-nutrition. Women are also at higher risk of developing anemia than men.

❖ **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.

❖ **Region** - Under-nutrition is more prevalent in rural areas, again mainly due to low socio-economic status. Anemia 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 anemia. 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, anemia is found in over 70% of individuals in the states of Bihar, Chhattisgarh, Madhya Pradesh, Andhra Pradesh, Uttar Pradesh, Karnataka, Haryana, and Jharkhand. Less than 50% of individuals in Goa, Manipur, Mizoram, and Kerala have anemia. Punjab, Kerala, and Delhi also face the highest rate of overweight and obese individuals.

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

❖ **Caste** - Those belonging to scheduled castes, schedules tribes, or other backward castes are also at increased risk of malnutrition. In particular, children of scheduled tribes have the poorest nutritional status and the highest wasting.

The crisis of childhood poverty

❖ Over 600 million children world-wide live in absolute poverty - an estimated 1 in 4. In many countries, rates are much higher with over 60 percent of children living in households with incomes below international poverty line. Over 10 million children under five still die every year from preventable diseases - the vast majority of them in developing countries. As one of the most powerless groups in society, children often bear the physical and emotional costs of poverty.

❖ Poverty denies opportunities to people of all ages. Lost opportunities in childhood cannot always be regained later - childhood is a one-off window of opportunity and development. Poverty experienced by children, even over short periods, can affect the rest of their lives. Malnutrition

in early childhood, for example, can lead to life-long learning difficulties and poor health.

❖ Today's poor children are all too often tomorrow's poor parents. Poverty can be passed on from generation to generation affecting the long-term health, well being and productivity of families and of society as a whole. Tackling childhood poverty is therefore critical for eradicating poverty and injustice world-wide.

❖ The international community has committed itself to meeting the Millennium Development Goals by 2015. This includes halving poverty rates, cutting by two-thirds the deaths of children under five and ensuring that all children in the world complete at least primary education. Already progress is slower than is needed - only substantial investment in children now will enable this vital reduction in different forms of childhood poverty to be achieved.

Malnutrition and Poverty

In search for an alternative poverty indicator, this section of the paper reviews the relevancy of using child malnutrition as poverty indicator. Child malnutrition as poverty indicator is conceptually appealing. Increasing health is seen as a dimension of poverty in its own right and child health is known to have important long-term effects on productivity during adulthood. As children are the future of every country, their situation is always of concern to policy makers, their parents and the general public. Ensuring children's health is a universally supported goal of development.

Malnutrition has long been recognized as a consequence of poverty. It is widely accepted that higher rates of malnutrition will be found in areas with chronic

widespread poverty (ADB, 2001). Malnutrition is the result of marginal dietary intake compounded by infection. In turn, marginal dietary intake is caused by household food insecurity, lack of clean water, lack of knowledge on good sanitation, and lack of alternative sources of income. It is also compounded by, inadequate care, gender inequality, poor health services, and poor environment. While income is not the sum of total of people's lives, health status as reflects by level of malnutrition is.

Because having good health condition is important precondition for escaping poverty and because improved health and sanitation contribute to growth, investment in people's health and nutrition status is fundamental to improving a country's general welfare, promoting economic growth, and reducing poverty (World Bank, 1993). Meeting primary health care needs and the nutritional requirements of children are fundamental to the achievement of sustainable development. In the United Kingdom and a number of Western European countries about half their economic growth achieved between 1790 and 1980 has been attributed to better nutrition and improved health and sanitation conditions (Fugel, 1994)

Malnutrition in childhood is known to have important long-term effects on the work capacity and intellectual performance of adults. Health consequences of inadequate nutrition are enormous. It was estimated that nearly 30% of infants, children, adolescents, adults and elderly in the developing world are suffering from one or more of the multiple forms of malnutrition, 49% of the 10 million deaths among children less than 5 years old each year in the developing world are associated with malnutrition, another 51% of them associated with infections and other causes

(WHO, 1999). Recent studies have also pointed out those women who were malnourished as children are more likely to give birth to low birth-weight children and thus there is an intergenerational effect of child malnutrition.

A practical advantage of using child malnutrition as a poverty indicator over income level is that this measure does not have to be adjusted for inflation and would not be constrained by any inadequacy of price data. Measures of child nutritional status can help capture aspects of welfare, such as distribution within the household which are not adequately reflected in other indicators. Child malnutrition standards are applicable across cultures and ethnicities.

Studies show that the relationship between child nutritional status and poverty is strong at the lower end of the income range. Increasing GNP per capita from $300 to $600 is associated with a decline in the prevalence of underweight children from about 34% to 17% or a reduction of about 50% (U.N. ACC/SCN, 1992). The data assessment of GNP per capita and the prevalence of underweight preschool children from the World Development Report as shows that the countries with the lowest ranking of GNP per capita are more likely to have higher prevalence of underweight children.

An IFPRI Study in 2000 drawn from the experience of 63 developing countries over this 25- year period on determinants of child malnutrition across different regions found four strong determinants to child malnutrition. The four, ranked by their strength of impact, are women's education, national food availability, women's status relative to men's, and health environment quality (Smith and Haddad, 2000). The findings of this study support the fact that child malnutrition as a poverty indicator is a comprehensive

indicator which is reflective and indicative of other desirable outcomes of development i.e. improvement in gender empowerment, intra-household distribution and equality, and health environment quality.

With all of the above consideration, child malnutrition appears as a highly conceptually relevant candidate for a poverty indicator. The following sections further evaluate other qualifications of child malnutrition as a poverty indicator.

Programs to face the causes of malnutrition in India

The Government of India has launched several programs to converge the growing rate of undernutrion children. They include ICDS, NCF, National Health Mission.

❖ **Mid-day meal scheme in Indian schools**

The Akshaya Patra Foundation runs the world's largest NGO-run midday meal programme serving freshly cooked meals to over 1.2 million hungry school children in government and government-aided schools in India. This programme is conducted with part subsidies from the Government and partly with donations from individuals and corporate. The meals served by Akshaya Patra comply with the nutritional norms given by the government of India and aims to eradicate malnutrition among children in India.

❖ **Integrated child development scheme**

The Government of India has started a program called Integrated Child Development Services (ICDS) in the year 1975. ICDS has been instrumental in improving the health of mothers and children under age 6 by providing health and nutrition education, health services, supplementary food, and pre-school education. The ICDS national development program is one of the largest in the world. It reaches more

than 34 million children aged 0–6 years and 7 million pregnant and lactating mothers. Other programs impacting on under-nutrition include the National Mid-day Meal Scheme, the National Rural Health Mission, and the Public Distribution System (PDS). The challenge for all these programs and schemes is how to increase efficiency, impact and coverage.

❖ National Children's Fund

The National Children's Fund was created during the International Year of the Child in 1979 under the Charitable Endowment Fund Act, 1890. This Fund Provides support to the voluntary organizations those work for the welfare of children.

❖ National Plan of Action for Children

India is a signatory to the 27 survival and development goals lay down by the World Summit on children 1990. In order to implement these goals, the Department of Women & Child Development has formulated a National Plan of Action on Children. Each concerned Central Ministries/Departments, State Governments/U.Ts. and Voluntary Organizations dealing with women and children have been asked to take up appropriate measures to implement the Action Plan. These goals have been integrated into National Development Plans. A Monitoring Committee under the Chairpersonship of Secretary (Women & Child Development) reviews the achievement of goals set in the National Plan of Action. All concerned Central Ministries/Departments are represented on the Committee. 15 State Governments have prepared State Plan of Action on the lines of National Plan of Action specifying targets for 1995 as well as for 2000 and spelling out strategies for holistic child development.

❖ United Nations Children's Fund

Department of Women and Child Development is the nodal department for UNICEF. India is associated with UNICEF since 1949 and is now in the fifth decade of cooperation for assisting most disadvantaged children and their mothers. Traditionally, UNICEF has been supporting India in a number of sectors like child development, women's development, urban basic services, support for community based convergent services, health, education, nutrition, water & sanitation, childhood disability, children in especially difficult circumstances, information and communication, planning and programme support. India is presently a member on the UNICEF Executive Board till 31 December 1997. The board has 3 regular sessions and one annual session in a year. Strategies and other important matters relating to UNICEF are discussed in those meetings. A meeting of Government of India and UNICEF officials was concurred on 12 November 1997 to finalize the strategy and areas for programme of cooperation for the next Master Plan of operations 1999–2002 which is to synchronize with the Ninth Plan of Government of India.

❖ National Rural Health Mission

The National Rural Health Mission of India was created from the years 2005–2012, and its goal is to "improve the availability of and access to quality health care by people, especially for those residing in rural areas, the poor, women, and children." The subset of goals under this mission is:

- Reduce infant mortality rate (IMR) and maternal mortality ratio (MMR)
- Provide universal access to public health services

- Prevent and control both communicable and non-communicable diseases, including locally endemic diseases
- Provide access to integrated comprehensive primary healthcare
- Create population stabilisation, as well as gender and demographic balance
- Revitalize local health traditions and mainstream AYUSH
- Finally, to promote healthy life styles

❖ The mission has set up strategies and action plan to meet all of its goals.

Research and policy to make a difference

The Childhood Poverty Research and Policy Centre is a collaborative research and policy programme which involves Save the Children, the Chronic Poverty Research Centre (CPRC) and partners in China, India, Kyrgyzstan and Mongolia. Running from 2001 to 2005, it aims to contribute to global poverty reduction efforts by:

❖ Deepening understanding of the main causes of childhood poverty and poverty cycles, and increasing knowledge of effective strategies to tackle them in different contexts

❖ Examining economic and social factors at different levels - international, national and local - which contribute to poverty in childhood

❖ Informing effective policy to end childhood poverty, communicating research findings to policy makers, practitioners and advocates

❖ Raising the profile of childhood poverty issues and increasing commitment to tackling them through anti-poverty policy and action.

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RURAL POVERTY AND UNDERNUTRITION

Srinath Samal

India's life expectancy has more than doubled and infant mortality halved in the last fifty years. The extent of progress on economic fronts and political scenario has been enormous. India is knocking the door for a permanent position in the United Nations and is one of the few atomic power countries. However, paradoxically, we have the highest number of malnourished people in India and our child malnutrition rate is unacceptably high. With one sixth of the global population residing in India, one third of about two billon people suffering from vitamin and micronutrient deficit are in India. (Kotecha, P V. 2008)

Malnutrition among children is one of the biggest challenges in the present world. It is not easy to think of any social problem in the contemporary world that deserves greater attention than this chronic and widespread problem.

Undernutrition is responsible for much of the sufferings of the people of the world. Children, being the most vulnerable group in the society, are the worst sufferer of it. Undernutrition in children is one of the reasons behind the high child mortality rate and is also highly detrimental for the future for those who survive (Pelletier, 1994). Experts reiterate that child malnutrition is not only responsible for 22% of India's disease burden and for 50% of its 2.3 million child death but it is also a serious economic hazard. In India, chronic hunger and undernutrition is the worse tribulation of poverty that still plagues millions of households and the plight

of children is of special concern. According to the UNDP Human Development Report 2008, India has the highest proportion of undernourished children in the world, along with Bangladesh, Ethiopia and Nepal. In fact in terms of the general situation of children, even Bangladesh now seems to be doing better than India. According to NFHS-III, 46% of India's under three kids are underweight, 38% are stunted, 19% severely malnourished and 80% are anemic. More than 6000 Indian children below 5 years die everyday due to malnourishment or lack of basic micro nutrients like vitamin A, iron, iodine, zinc or folic acid. Overall, India hosts 57 million or more than a third of the world's 146 million under nourished children.

Poverty in India is mainly a rural phenomenon. The number of rural poor is much higher than that of the urban poor. In addition, the rural poverty ratio is also higher than its urban counterpart. Recently in some States the urban poverty is found to exceed the rural poverty, but a major part of it is due to the migration of rural poor to the urban area. Child undernutrition in the rural area is higher than the same in the urban area. According to NFHS-III, the percentages of underweight, stunted and wasted children in India are 49.0, 40.7 and 19.8. The figures for the urban area are: 36.4, 31.1 and 16.9.

Poverty or deprivation manifested in the form of hunger, poor dwelling etc. impair the nutritional status of children. Undernutrition is not only a consequence of poverty but also a cause. It also increases susceptibility to disease among adults, which in turn worsens their nutritional status. Malnourished adults are less able to work and therefore earn less, which results in the less consumption (including food)

by the family members and their undernutrition. If a woman is malnourished during pregnancy, or a child is malnourished during the first two years of life, the child's physical and mental growth may be slowed. This can not be made up when the child is older – it will affect the child for the rest of his or her life. Undernutrition slows economic growth and perpetuates poverty through three routes % direct losses in productivity from poor physical status; indirect losses from poor cognitive function and deficits in schooling; and losses owing to increased health care costs.

TERMS USED TO DESCRIBE DIFFERENT LEVELS OF MALNUTRITION

1. Underweight: where the weight of the child is less than the normal range of weight for the particular age .In this case the child appears to be normal .
2. Stunting: where the height the child is less than the normal range of height for that particular age, the child looks short but not thin.
3. Wasting: where the weight of the child is less than the normal range of weight for that particular height, the child looks very thin.
4. Marasmus: It has been commonly used to describe a child who is stunted as well as wasted .
5. Kwashiorkor: It is used to describe any malnourished child(any of the above categories) having oedema or the collection of fluid under skin which 'pits' or pressures(usually on the feet, hands and face).The presence of oedema means the child is seriously ill.

SCENERIO

Great strides have been made in reducing child under nutrition over the past few decades. The prevalence of underweight in children under five in the developing countries was 37.4 percent in1980.By 2000 this had dropped to 26.7 percent(ACC/SCN2000).Nevertheless 150 million children in the developing world remain underweight and 182 million remain stunted(low weight for age) .At current trends it is clear that the goal of halving the prevalence of underweight children between 1990 and 2015 —one of the millennium Development goal(MDG) indicator targets for poverty and hunger will not be met (ACC/SCN 2000).Table -1 delineated below highlights the nutrition status of world children.

According to the latest UNDP human development report 2005, India has the highest proportion of undernourished children in the world, along with Bangladesh, Ethiopia and Nepal. Infact in terms of the general situation of children, even Bangladesh now seems to be doing better than India.

The recently released National Family Health Survey (NFHS-3) highlights some sobering facts on this front.

Table-4: Nutritional status of Indian children-2005-06 (in %)

	NFHS-3(2005-06)		
	Urban	Rural	All India
Children under 3 years who are			
Stunted	31	41	38
Wasted	17	20	19
underweight	36	49	46

Note : figures are rounded Source : NFHS-3 fact sheet

According to the survey conducted between December 2005 and August 2006, a whooping 46% of India's under three kids are under weight,38% are stunted,19%severely malnourished,80% anemic, while infant mortality hovers at 67 per 1000. More than 6000 Indian children below 5 years die everyday due to malnourishment or lack of basic micro nutrients like vitamin A, iron, iodine, zinc or folic acid. Overall, India hosts 57 million or more than a third of the world's 146 million under nourished children.

Shockingly even Sub-Saharan Africa has a better record child malnourishment at 30% while China records 8% and Pakistan 37%.A massive440 million people languish at the bottom of economic pyramid in India and about 500,000 are born deformed each year due to vitamin /mineral deficiencies.

Table -1:The worlds'worst child malnutrition values

	Percent of under five (1995-2000) suffering from		
	Underwt. (moderate&severe)	wasting	stunting
Sub-Saharan Africa	31	10	37
West Asia&NorthAfrica	17	8	24
South Asia	49	17	48
East Asia&Pacific	19	6	24
Latin America &Carribean	9	2	17
Developing countries	29	10	33
Least developed countries	40	12	45
World	28	10	32

Source: EPW,March 11,2006

It is unfortunate that even though children form a substantive third of india's total population of over 1 billion plus, their current share in the union budget is a piffling 4.86%.Even out of this nearly 70% is marked for education while health manages a modest 11.43%.Small wonder ,malnourishment, illiteracy, foeticide and child labour are rampant across India.

A Chennai based development scientist Dr.Sree Sridharan says['Despite a spurt in India's GDP from 3.6%in 1970 to 9% in 2006, proportionate spending on children has gone up only marginally from 2.11% in 2002 to 4.86%.

The levels of undernourishment vary widely across Indian states. Table -5 presents data on the proportion of stunting, wasting, and underweight among children below three years across Indian states.

Table 5: Malnutrition among Indian Children below Three Years *(Per cent)*

	Stunted	Wasted	Underweight
	NFHS-3 2005-06		
1 Punjab	28	09	27
2 Kerala	21	16	29
3 Jammu and Kashmir	28	15	29
4 Tamil Nadu	2 5	2 2	3 3
5 Himachal Pradesh	27	19	36
6 Andhra Pradesh	34	13	37
7 Uttaranchal	32	16	38
8 Maharashtra	38	15	40
9 Assam	35	13	40
10 Karnataka	38	18	41

	Stunted	Wasted	Underweight
	NFHS-3 2005-06		
11 Haryana	36	17	42
12 West Bengal	33	19	44
13 Orissa	38	19	44
14 Rajasthan	34	20	44
15 Uttar Pradesh	46	14	47
16 Gujarat	42	17	47
17 Chhattisgarh	45	18	52
18 Bihar	42	28	58
19 J harkhand	41	31	59
20 M adhya Pradesh	40	33	60
India	38	19	46

States ranked in descending order of underweight children. Figures have been rounded Source-NFHS_3 Fact sheet

1.5 Vicious circle of poverty and undernutrition

Chronic under nutrition in children is linked to slower cognitive development and serious health impairments later in life that reduce the quality of life and also the economic productivity of people (Scrimshaw-1996). Under nutrition is hence not only a consequence of poverty but also a cause.

Thus we find the vicious circle poverty and malnutrition. Poverty leads to under nutrition and under nutrition by adversely affecting capability reduces future earning and thus makes one poor. Poverty or deprivation manifested in the form of hunger, poor dwelling etc. impair nutritional status of children.

VICIOUS CIRCLE OF POVERTY AND UNDER NUTRITION

Malnutrition also increases susceptibility to disease among adults, which in turn worsens their nutritional status. Malnourished adults are less able to work and therefore earn less, which results in the entire family consuming less food. This vicious cycle of hunger leading to poverty exacerbates the hunger and poverty.

If a woman is malnourished during pregnancy, or if child is malnourished during the first two years of life, the child's physical and mental growth and development may be slowed. This can not be made up when the child is older –it will affect the child for the rest of his or her life.

Under nutrition slows economic growth and perpetuates poverty through three routes —direct losses in productivity from poor physical status, indirect losses from poor cognitive function and deficits in schooling, and losses owing to increased health care costs.

SOCIAL AND ECONOMIC EFFECTS

Whether in their mildest or severe form, the consequences of poor nutrition and health result in a reduction in overall wellbeing and quality of life, and in the levels of development of human potential. Malnutrition can result in productivity and economic losses, as adults afflicted by nutritional and related disorders are unable to work; education losses, as children are too weakened or sickly to attend school or to learn properly; health care cost of caring for those suffering from nutrition-related illness; and costs to society of caring for who are disabled and in some circumstances, their families as well.

Causes of Malnutrition

1. Hunger
2. Natural disaster and war
3. Inadequate care of women and children
4. Unsafe water and poor sanitation
5. Over consumption- taking in many more calories than required is often accompanied by a deficiency in vitamins and minerals.
6. Micronutrient and/or protein deficiency
7. Diarrhea
8. Diseases-Malaria, cold, fever
9. Inadequate dietary intake
10. Insufficient Household food security-poverty
11. Inadequate maternal and child care
12. Insufficient health service sand unhealthy environment
13. Inadequate Education
14. Inadequate time of mother
15. Indifferent attitude of family members for feeding of child
16. Lack of birth spacing
17. Worm infection
18. Non-initiation of complementary feeding in due time
19. Lack of dietary intake and rest during pregnancies
20. Birth of child before 18 years and after 35 years of age of mother

Symptoms of malnutrition

The symptoms of malnutrition vary with the definite malnutrition-related disorder. All the malnutrition symptoms

are noticeable. Though, there are some general symptoms of it. These include-

- Fatigue
- Weight loss
- Dizziness
- Decreased immune response
- Low energy
- Poor immune function (which can hamper the body's ability to fight off infections)
- Swollen and bleeding gums
- Underweight
- Bloated stomach
- Muscle weakness
- Decaying teeth
- Osteoporosis or fragile bones that can break easily
- Dry and scaly skin
- Poor growth
- Slowed reaction times and trouble with paying proper attention
- Problems with organ function

All of these malnutrition signs should be examined properly by the experienced physician as malnutrition needs proper test and treatment.

Case for govt. investment on nutrition

Govt investment on nutrition can yield positive results in many ways.

i. Improved nutrition is central to improved income generation, poverty reduction and more rapid development.

ii. Better nourished individuals constitute the bedrock of a nation that respects and strives for high labour productivity.

iii. Well nourished mothers are more likely to give birth to well nourished children who will attend school earlier ,learn more, postpone dropping-out,mary and have children later, give birth to fewer and healthier

iv. Improved nutrition status from conception to 24 months of age reduces private and public health care expenditures in ways that reverberate throughout life cycle.

v. In a liberalized / globalized world the return from investment on nutrition on nutrition is expected to be higher because better nutrition improves intellectual capacity and increases employment opportunities.

vi. In these ways by reducing malnutrition expenditure required for poverty reduction would be reduced.

vii. Moreover, there is an appreciable impact of under nutrition on productivity so that a failure to invest in combating nutrition reduces potential economic growth.

NEED FOR PUBLIC ACTION

Malnutrition is due to poor/imbalanced diet. Poverty does not allow the household to spend more on diet. Imbalanced diet arises from the poor knowledge of health care. Moreover, in the poor households very often resources are not equitably distributed. Children's share is generally cut in order to raise that of the earning member of the family. This is because the poor household considers it as one form of investment. For the same reason, Female's share is also less. So the pregnant and nursing mothers get inadequate amount. Thus, there is a need for public action to provide supplementary diet to the target population of the poor households. Moreover, there is also the need for the

expansion of education and creation of awareness regarding balanced diet, sanitation, and health care etc. In fact problem of malnutrition needs to be addressed through greater synergy between the centre, state and NGOs. Indeed if India wants to continue with its upward trajectory of economic growth, it can ill-afford to by pass the vital issues of its children's health, survival and happiness.

Recent Development for combating malnutrition

1. VHND- Village Health and Nutrition Day (Mamata Divas
2. Pustikar Divas
3. PDA-Positive Deviance Approach
4. Nutrition operation plan
5. Supplementary Nutrition Programme(SNP) Double Ration for malnourished children
6. Focus on mother and child Protection (MCP) Card and Mother and child Health and Nutrition (MCHN) Kit
7. Referral Service: a) Chief Minister Referral Fund b) Normal Referral Fund
8. Gaon Kalyana Samiti (GKS)Fund
9. Untied Fund of ANM
10. Nutrition Rehabilitation Centre (NRC)
11. Integrated Management of Neonatal and Childhood Illness Programme

CONCLUSION

Tackling children's malnutrition is no child's play. It is a serious problem that needs to be addressed through greater synergy between the centre, state and NGOs. Indeed if India

wants to continue with its upward trajectory of economic growth, it can ill-afford to by pass the vital issues of its children's health, survival and happiness.

Thus it would be vital for public health strategists, policy makers and administrators to act collectively to redeem the promises made to the children of India,so that they get a far better deal and the goal of 'Health for All' does not continue to be elusive and a distant dream.

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NRHM AND REDUCTION OF MALNUTRITION IN ODISHA : AN ABSTRACT

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The objective of this paper is to analyse the progress and achievements of NRHM in 30 districts of Orissa with regard to different components like ASHA, Maternal health, Janani Surakshya Yojana, child health, adolescence health and child health. It also focuses on achievements of NRHM in immunization, sterilization and hospital development. The status of Janani express reveals that highest number of patients were attended in Mayurbhanj District where 56% of population are tribals. The average patient load per one Janani Express is 94 in Baragarh district followed by 90 in Balasore and 83 in Jajpur districts. Under ASHA programme, 40,562 ASHA workers are working under NRHM in Orissa out of which 90 % are provided thematic and induction training but 30 % are provided first aid training. Under Janani surakshya yojana, total beneficiaries are 2,66,865 out of which 2,27,071 instant deliveries are done in rural Orissa and 26,401 in urban Orissa. ASHA workers assisted 1,73,580 instant deliveries in the state. The Gaon Kalyan Samiti(GKS) acts as the unit of planning, monitoring and implementation of various public health initiatives at the village level. In Orissa

43,735 GKS are provided funds for improving health status of rural people.

The paper has focused on functioning ASHA with problems and remedial measures on the basis of survey of ASHA workers in Cuttack District. The ASHA has been a solace to many of their woes as they have been able to get an opportunity to interact frequently on care during pregnancy and newborn care. There has been an overwhelming response of the community in stating that the ASHA was playing a critical role in facilitating the process of registration, administration of TT, consumption of IFA, chemoprophylaxis, colostrums feeding, exclusive breast feeding, immunization etc besides giving routine counseling. The ASHA also played a major role in organizing monthly health days for immunization and other health services. The paper provides many suggestions for improving programmes of NRHM, particularly ASHA in Odisha.

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Technical Session
(2 P.M. to 5 P.M.)

Chair Person: Dr. (Mrs.) Sanjukta Das,
Reader in Economics,
Sambalpur University

Rapporteur Dr.(Mrs.) Kabita Kumari Sahu,
Lect in Economics
North Orissa University

Presentation of Papers : By Delegates

Date 4th February2012

Technical Session-II (10 AM to 1 PM)

Chair Person: Mr. Gangadhar Behera,
Reader in Economics,
Seemanta Mahavidyalaya

Rapporteur: Dr. Tarun Kumar Ojha,
Lect. In Economics
Seemanta Mahavidyalaya

Presentation of Papers : By Delegates

L U N C H B R E A K : 1 Pm TO 2 PM

Valedictory Session
(2 PM to 5 PM)

Chair Person: Prof. Anil Kumar Kar,
Principal,
Seemanta Mahavidyalaya

Chief Guest: Mrs. Sumitra Hembram,
District Social Welfare Officer,Mbj.

Chief Speaker: Mrs. Dipali Otta,
Programme Officer,ICDS Cell,Mbj.

Vote of Thanks: Mr. Pradeep Kumar Paira,
HOD,Economics &
Organizing Secretary