

# Incedence of malnutrition among pre-school children in slum area of Berhampur and Ganjam district

SUMITA ACHARYA AND PUSPANJALI SAMANTRAY

Malnutrition is largely a silent and invisible emergency; affecting children in urban slum areas. It is largely the by-product of poverty ignorance, insufficient education, lack of knowledge regarding the nutritive value of foods, inadequate sanitary environment, large family size, etc. The study was conducted by selecting only 83 families randomly having 100 children for survey. Information regarding socio-economic aspects, food habit and dietary pattern, nutrient intake and health aspects of children was collected to assess the nutritional status of the children. The incidence of acute malnutrition is definitely high among pre-school children is distinctly observed. In this slum area the intake of calorie is more whereas rice is the main source of food for them. But protein, fat, vitamin C and vitamin A intake is very less as compared to the normal diet table. So the children are suffering from protein calorie malnutrition with some deficiency diseases. Lack of knowledge of the mother about dietary requirements and the nutritive value of different foods is the main contributory cause for the widespread occurrence of malnutrition among pre-school children. The health education is a major means today for achieving changes in health practices and the recognition of health needs.

**Key Words :** Slum, Malnutrition, Nutritional Status, Pre-school, Knowledge

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## INTRODUCTION

According WHO (2011), about 178 million children under five years worldwide are too short for their age group; while 115 million are underweight. The same report showed that stunting rate among children is higher in Africa and Asia than elsewhere. One third of Indian's urban populations live in slums of the cities. Malnutrition among urban poor children is worse than in rural areas. Children living in the urban slums are exposed to risks of infectious diseases, malnutrition and possibly impaired

cognitive development. Prevalence of malnutrition was higher as compared to NFHS 2005-06 report of urban areas of Gujarat in which more than one-third (36%) of children under five years of age were stunted, 16 per cent were wasted, and 30 per cent children were underweight. In other study carried out by Mittal *et al.* (2007) in urban slums of Tripura, Patiala out of 482 children aged 1-5 year who participated in the study, 185 (38.38%) had low weight for age (underweight) whereas 222 (46.06%) had low height for age. In the absence of extended family support which rural environment often provides, the urban slum children are considered as vulnerable "group" or "at risk group". In case of children the risk is connected with growth, development and survival. Protein energy malnutrition is widely prevalent among weaned infants and pre-school children in these areas. The diets consumed by them are lacking in

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proteins, calories, certain vitamins and minerals. Orissa's infant mortality rate is the highest in India we still have 47 per cent of our children under three undernourished (NFHS-II). More than half of the children were underweight, 59 per cent stunted and 20 per cent wasted (Department of women and child development, U.P., 1999). This situation of under five children in urban slums are worst than others as they are the first victims to suffer. The present study was carried out to find out the remedial measures to eradicate the malnutrition in the slum areas of Berhampur city in Ganjam district of Odisha.

## METHODOLOGY

A study was conducted in Khodasingi, Berhampur city; a slum area of Ganjam district in Orissa to find out the degree of malnutrition on the basic. The variables like income, occupation of the family size of the family, education of both mother and father were taken into consideration for better scope of the children. Data obtained from the interview methods or schedules were consolidated and tabulated. The mean and standard deviation values were calculated for each group in respect of the parameters used for elicitation information/data on research topic. For calculating nutrient intake, the daily consumption of child was found out for three consecutive days. The collected information of the food consumed is then checked with the Recommended Dietary Allowances (RDA by ICMR, 1990). It gives an estimate of the amount and frequency of the various nutrients consumed by the individual. A schedule with different clinical signs was prepared and various clinical signs were observed by the naked eyes for the deficiency, signs, if any, for all the children and women of the slum families. To be more accurate and precise in the observation, the help of medical personnel was also taken.

## OBSERVATIONS AND ASSESSMENT

The study was conducted by selecting only 83

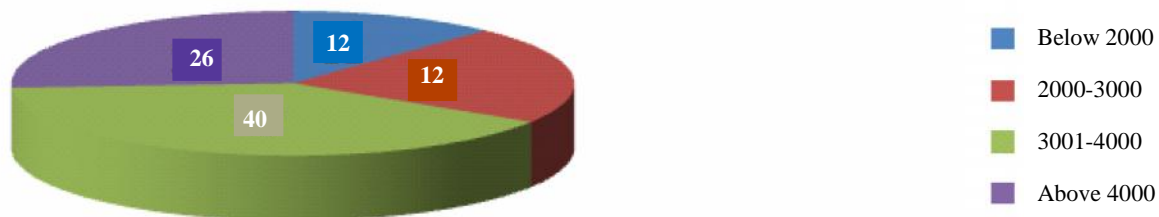


Fig. 1 : Income status of the families

families randomly having 100 children for survey. Out of this slum population 46 boys and 44 girls were considered. Most of the respondents belong to nuclear families (66%), 58 per cent of the people are living in rented house because most of them migrated from village for better living. Sanitation and drainage system is not in well condition. 67 per cent of the families are landless and 21 per cent of the families are landless but cultivating as tenants and very less families are landholders because of poverty. Due to illiteracy, lack of availability of job, etc. the earning amount also not sufficient to maintain a family. The major cause of malnutrition is also large family size. The present investigation reported that parents give more importance to the health of boys than that of the girls due to some superstitions.

The total income of the family represents the economic status of that family. Generally it is observed that high-income families have good nutrition status when it is compared with the lower income group. Shrivastava, (2008) - according to 'National Sample Survey Organisation', twenty per cent people in rural India earn only Rs. 12 a day, of which each person spends just Rs. 7 on food. In Orissa and Chhattisgarh, 44 per cent people suffer from such a devastating situation. From monthly income Fig.1, we found that slum families are very poor. Body mass index (B.M.I.) is as good index to know the current forms of malnutrition in a community.

It was inferred from Table 1 that all boys and girls of 3-5 years children are suffering from severe malnutrition. It is generally happened due to faulty or deficient weaning food, which is introduced at this age, and also the children are starting their pre-school at this age.

The mean daily nutrient intake of 100 sample children of slum area has been assessed. The consumption of food as well as nutrient intake of the samples has been studied and the effect of various socio-economic factors such as income range, family size, etc. on nutrient intake

has been assessed. The result thus obtained has been compared with RDA (ICMR, 1988) of pre-school children of 4-6 year age.

From the Table 2, the incidence of acute malnutrition is definitely high among preschool children is distinctly observed. In this slum area the intake of calorie is more whereas rice is the main source of food for them. But protein, fat, vitamin C and vitamin A intake is very less as compared to the normal diet table. So the children are suffering from protein calorie malnutrition with some deficiency diseases. This study highlights that during pre-school age children are not taking balanced diet, which is mainly responsible for their improper growth and development.

Deficiency is a serious public health concern in most developing countries, which leads to malnutrition syndromes with clinical signs through the essential vitamins and minerals are needed only in minute quantities, usually a few milligrams or even micrograms per day. The clinical symptoms can be varied starting from blindness to mental retardation to reduced resistance to infectious diseases and so on. It is also the simplest and the most practical method of ascertaining the nutritional status of a group of individual.

The full well rounded face known as moon face is often present in Kwashiorkor. This sign is best indication of protein calories malnutrition from the Table 3, it is found that 3 per cent boys and 5 per cent girls were suffering from protein calorie malnutrition. Eye condition

of children is mainly due to Vitamin A deficiency in slum area. Sometimes they may have Bitot's spot and sometimes dry and wrinkle eyes which are just indicator of malnutrition. From the Table 3, we came to know 7 per cent boys and 6 per cent girls have Bitot's spot and 13 per cent boys and 18 per cent girls have dry and wrinkle eyes. Hair is a good indicator of nutritional status because when there is protein deficiency in the body the lusture and colour of the hair is changed. So that the hair is dry, dull, easily pluckable and brittle in nature from the Table 3, it is found that majority of children were suffering from protein deficiency because 35 per cent have dry dull hair, 36 per cent easily pluckable and 7 per cent have brittle hair. Vitamin-B is essential for the utilization of carbohydrate in the body and also essential for the maintenance of good appetite and normal digestion. Deficiency of the Vitamin causes Beri Beri, Cheilosis, angular stomatitis soreness, red and raw fissured tongue. From the Table 3, 4 per cent girls, 2 per cent boys have suffered from Cheilosis and 3 per cent girls, 7 per cent boys have red and raw fissured tongue. This deficiency is generally observed due to poor diet. Skin is the outer layer of the body, which gives protection to the body. Skin is very sensitive part of the body, if there is any types of deficiency or infection it is reflected on the skin. It is found from the Table 3 that 42 per cent girls and 33 per cent boys have dry and scaly skin. Oedema occurs at first in the feet and lower legs and then may involve the hands, the thigh and face. The

**Table 1: Observed body mass index (B.M.I) of children (3-5 year)**

Age group (Month)	Sex	Weight (kg) (Mean)	Height (m) (Mean)	B.M.I.
36-42	Boy	10.6	.834	15.2
	Girl	9.7	.814	14.64
42-48	Boy	11.7	.889	14.80
	Girl	11.3	.889	14.52
48-54	Boy	12.9	.950	14.29
	Girl	13.0	.948	14.46
54-60	Boy	13.6	1.00	13.6
	Girl	13.0	.985	13.39

**Table 2 : Average percapita daily nutrient intake of children (3-5 year)**

Sr. No.	Nutrient type	Avg. percapita daily nutrient intake (3-4 year)	Avg. percapita daily nutrient intake (4-5 year)
1.	Energy (Kcal/d)	1039	1123
2.	Protein (g/d)	90	11
3.	Fat (g/d)	13	17
4.	Carotene (mg/d)	923	1013
5.	Ascorbic acid (mg/d)	14	19

oedema is mainly due to lowered serum albumin and probably also due to high sodium and low potassium levels in serum. It is a sign of child between 1-6 years suffering from Kwashiorkor from the Table 3, it is found that only 8 per cent boys and 11 per cent girls have the sign of oedema. Some related factors like water supply, housing, environmental, sanitation, bad food habit, unhygienic foods, etc. were also surveyed. Fly and mosquito nuisance are very high in this area. Because of these factors there are some common symptoms seen in children.

**Knowledge about personal hygiene, health and nutrition education:**

Lack of knowledge of the mother about dietary requirements and the nutritive value of different foods is the main contributory cause for the widespread occurrence of malnutrition among pre-school children. A longitudinal study conducted in West Bengal (Pandey, 2007) also found that educated mothers (primary level education) made a significant difference as they ‘took better care’ of their children as reflected in the children’s

nutritional status. The health education is a major means today for achieving changes in health practices and the recognition of health needs. It involves motivation, communication and decision-making.

From the Fig.2, 69 per cent of mother’s regarding personal hygiene, health and nutritional education are not totally aware, 17 per cent of mother’s are partially aware and 14 per cent are fully aware. The slum area mothers are busy in their work. So they have no time to look after their children. They have certain knowledge about personal hygiene but no knowledge about nutrition education.

**Conclusion :**

Pre-school age is the foundation period of the total life. So during this stage utmost care should be taken. In the slum area most of the families are migrants, so they have no land of their own to cultivate. Most of the families are living in rented house. The absence of drainage system in slum area affects the health and hygiene of children. Drinking water is also not sufficient for this area. Most of the families are nuclear family and

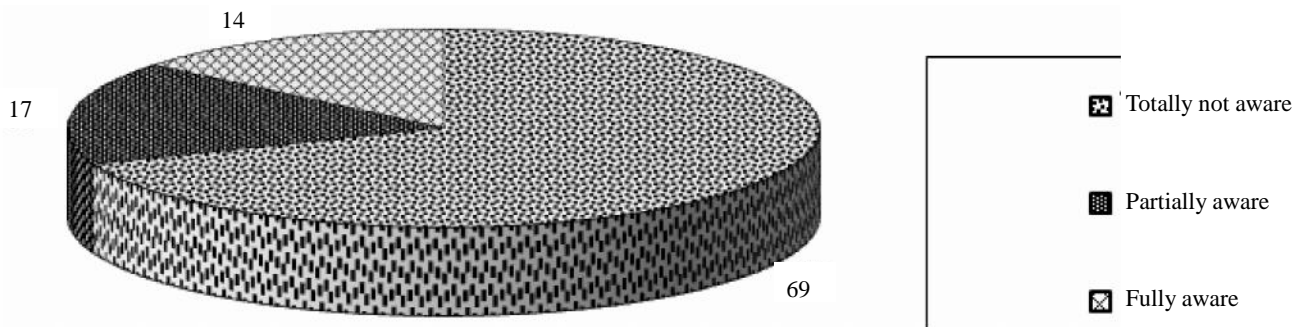


Fig. 2 : Mother’s knowledge about personal hygiene, health, nutrition and education in percentage

Table 3 : Clinical manifestation according to general appearance of children

Signs	No. of children (Percentage)		Total
	Boys	Girls	
Moon face	3	5	8
Bitot’s spot	7	6	13
Dry and wrinkle eyes	13	18	31
Dry and dult hair	8	27	35
Easily pluckable hair	15	21	36
Brittle hair	3	4	7
Red and raw fissured tongue	7	3	10
Chilosis	2	4	6
Dry scaly skin	33	42	75
Odema	8	11	19

both parents are working. So the children are deprived of proper care. In conclusion, analysis attempted in this study brings out important implications, both for prevention and intervention programs to be planned for combating the problem of under nutrition in urban slums.

Since malnutrition is the severe problem in urban slum areas and can be solved only by taking action simultaneously at various levels family, community, national and international levels. All infants of slum should be weighed periodically and their growth charts should be maintained. Growth monitoring is a low-cost technology for reducing infant mortality. Breast feeding should be encouraged to reduce infant mortality rate and also increase, the immunity power of the child. Besides drunkenness, drug abuse, violence is a chronic problem of slum dwellers especially by the men folk who spent almost all their earning on drinking alcohol. Govt. agencies and NGO can take up slums or adopt a particular slum and systematically follow up program of rehabilitation correction.

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