A review of occurrences of malnutrition in children in India with reference to a study of health status in children in the localities of Jadavpur, Kolkata

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Abstract:

Malnutrition in young children is a major concerning issue globally. India has the highest number of children suffering from undernourishment and anaemia. As malnourishment leads to increasing morbidity and mortality rate, it also leads to poor or delayed cognitive and physical development in growing children. Malnutrition is a complex, multifactorial issue. It results from a number of different biological, behavioral and socio-economic factors. The social determinants of health (SDHs) are the predominant challenges to address this issue. In this regard a small locality based study was conducted to survey the health status among young children in Jadavpur, Kolkata. This project aims to find out the health status of children related to the nutrition level & also to study the various epidemiological factors related to the malnutrition for children with their different socio-economic background. Result of this study shows that 8.11% children were obese whereas 3.63% children are undernourished. Analysis of data from this study revealed that a faulty food habit is one of the important causative factors followed by poverty level for poor health status in terms of malnutrition among children.

Key words: Malnutrition, Children, SDHs, Health status, Study

INTRODUCTION:

Malnutrition in young children is a major concerning issue globally. According to UNICEF, severe malnutrition in children under the age of five years, may lead to death of around eight million children in fifteen countries. Though, India is not included among these fifteen countries, India has the highest number of children suffering from undernourishment and anaemia. As malnourishment leads to increasing morbidity and mortality rate, it also leads to poor or delayed cognitive and physical development in growing children. In India, although the occurrences of stunting, wasting and low birth weight have reduced than before, yet it is far the global nutrition targets set by WHO for 2025(1). India with a population of 1.37 billion stands at the second position as the most populous country in the world after China. India comprises almost 13.1 per cent of child population aged 0-6 years. Children of today are tomorrow's citizens; hence it is very necessary to provide better health care facilities to them. According to UNICEF and WHO, disparities in child malnutrition status continue to persist across the globe and also in India.

Malnutrition is a complex, multifactorial issue. It results from a number of different biological, behavioral and socio-economic factors. The social determinants of health (SDHs) are the predominant challenges to address this issue. At family level, poor dietary intake, lack of diversity of food, inadequate intake of food for both mother and child plays major role. Over nutrition is also observed in economically well off families. That is, under-nutrition and over-nutrition are both major contributing factors to cause malnutrition in young children. Studies have also shown that malnutrition in children is directly associated with maternal education, environmental hygiene and cleanliness, gender discrimination in the household and access to health care. Female children in the family are often neglected due to gender bias where male offsprings are preferred and given care compared to the female offsprings. Many children are exposed to infections, parasites, and/or environmental toxicants and are more prone to suffer from malnutrition, especially wasting, which is characterized by a low weight in reference to their height.

As of 2012 an estimated 162 million children under 5 years of age, or 25%, were stunted due to malnutrition. More than 90% of the world's stunted children live in Africa and Asia, where respectively 36% and 56% of children are affected.(1) Malnutrition is a condition that results from eating a diet in which nutrients are either not enough or are too much such that the diet causes health problems.(2)

It may involve calories, protein, carbohydrates, vitamins or minerals. Lac of enough nutrients is called undernutrition or undernourishment while too much is called overnutrition. Malnutrition is often used to specifically refer to undernutrition where an individual is not getting enough calories, protein, or micronutrients. If undernutrition occurs during pregnancy, or before two years of age, it may result in permanent problems with physical and mental development. [3] Undernourishment is most often due to not enough high-quality food being available to eat. This is often related to high food prices and poverty. A lack of breastfeeding may contribute, as may a number of infectious diseases such as: gastroenteritis, pneumonia, malaria, and measles, which increase nutrient requirements.[4] In some developing countries, overnutrition, in the form of obesity is beginning to present within the same communities as undernutrition .[5] Overnutrition caused by overeating is also a form of malnutrition. Many parts of the world have access to a surplus of non-nutritious food, in addition to increased sedentary lifestyles. Yale psychologist Kelly Brownell calls this a "toxic food environment" where fat and sugar laden foods have taken precedence over healthy nutritious foods. Not only does obesity occur in developed countries, problems are also occurring in developing countries in areas where income is on the rise. Overeating is also a problem in countries where hunger and poverty persist. Overeating leads to many diseases, such as heart disease and diabetes, that may result in death.[6]

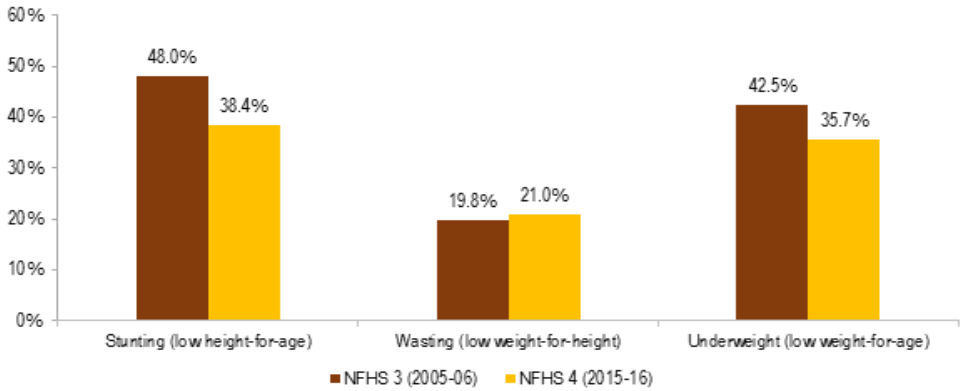
Worldwide in 2016, 41 million, or 6 per cent, of children under age 5 were overweight. Eastern Europe and Central Asia had the highest overweight prevalence in 2016 with 12.8 per cent affected, followed by Middle East and North Africa at 10.7 per cent and North America at 7.8 per cent. The lowest overweight prevalence in 2016 was seen in West and Central Africa, at 3.7 per cent, followed by Eastern and Southern Africa at 4.2 per cent. East Asia and the Pacific had the highest number of overweight children in 2016 with 8.6 million affected, followed by South Asia with an estimated 7.4 million overweight. Overall these two Asian regions account for nearly two out of every five overweight children in the world. Eastern Europe and Central Asia is the only region that has seen a statistically significant increase in number of overweight children between 2000 and 2016. [7]

With one of the highest rates of child malnutrition in the world, India has won notoriety as one of the nutritional basket cases of the world over the past few years. Although India has witnessed significant progress in its battle against child malnutrition over the past decade, the progress has been quite uneven, and child malnutrition rates still remain high in many parts of the country, data from the latest round of the National Family Health Survey (NFHS) shows.[8][11]

The survey of over 6 lakh households conducted in 2015-16 shows that over the past decade, the proportion of underweight children fell nearly 7 percentage points to 36%, while the proportion of stunted children (those with low height-for-age, a measure of chronic undernourishment) declined nearly 10 percentage points to 38%. Despite the progress, these rates are still higher than those of many poorer countries in sub-Saharan Africa. And in some of the worst affected districts such as Purulia in West Bengal and Nandurbar in Maharashtra, every second child is undernourished.[8][9] Such high level of child malnutrition imposes a huge economic cost. Malnutrition accounted for losses worth at least 8% of global gross domestic product (GDP) in the 20th century because of "direct productivity losses, losses via poorer cognition, and losses via reduced schooling", according to medical journal *The Lancet*, which published a special issue on the topic in 2013. The losses are higher for high-burden countries such as India.

India's performance on key malnutrition indicators is poor according to national and international studies. According to UNICEF, India was at the 10th spot among countries with the highest number of underweight children, and at the 17th spot for the highest number of stunted children in the world.[10][11] Malnutrition affects chances of survival for children, increases their susceptibility to illness, reduces their ability to learn, and makes them less productive in later life.[11] It is estimated that malnutrition is a contributing factor in about one-third of all deaths of children under the age of 5 years. Figure 1 looks at the key statistics on malnutrition for children in India.[12]

Figure 1: Malnutrition in children under 5 years (2005-06 and 2015-16)[12]



Sources: National Family Health Survey 3 & 4; PRS.

Modernization has created faulty food habits for malnutrition everywhere. Malnutrition causes more than five million children deaths per year which makes around 9% of the global mortality. [13]World Health Organization (WHO) has predicted that by 2020, malnutrition will be the fifth leading cause of death with 15.6% of all deaths; obesity will be in the 12th position with 35.2% of total deaths worldwide.[14]

Causes of malnutrition are multidimensional and children are more susceptible than others. There is growing awareness that malnutrition among children caused by poverty and faulty food habits is a global phenomenon & is a serious issue in developing countries like India. The prevalence of malnutrition in India ranges from 6 to 60% with considerable variation across the states in different settings.[15] Malnourished children experience developmental delays, weight-loss and illness as a result of inadequate intake of protein, calories and other nutrients.

The scale and the gender dimension of nutrition in India shows that while there is economic growth of nearly 10 per cent annually, rates of child undernutrition remain very high. According to NFHS-3, 48 % of children under the age of five are stunted due to chronic undernutrition, with 70 % being anemic. The nutrition situation of children is largely due to the situation of women. NFHS-3 indicates that 36 % of Indian women are chronically undernourished and 55 % are anemic. A recent study in Andhra Pradesh shows that women with higher autonomy (both financial and physical, for example – the freedom to go to the market) are less likely to have stunted children.[16]

STUDY OF CHILD HEALTH STATUS IN SOME AREAS:

As a part of the society, college plays an important role in Public health and Community development. So, the Department of Physiology, Vijaygarh Jyotish Ray College has conducted a population survey to know the child health status with special reference to their malnutrition status on the common people surrounding the college.

OBJECTIVES:

This project aims to find out the health status of children related to the nutrition level & also to study the various epidemiological factors related to the malnutrition for children with their different socio-economic background.

METHODOLOGY:

It was a multicentre study that was conducted in different localities of Jadavpur and surrounding areas. These areas are advanced in terms of modern amenities like telecommunication, electricity, schools, and transport facilities. Health care system is also well developed.

A detailed questionnaire was prepared to collect demographic information of each households & information related to nutritional status of the child.

A systemic random sampling technique was used to select samples from each five areas (including one primary school). Total numbers of 100 households were under this study in the municipality area of Jadavpur, Kolkata.

RESULTS:

Total population of 110 children (out of total number of 100 households) was interviewed as only children were taken as subject during the study period. The age group of children was 3 – 10 years under this survey. Among the total population of 110 children 57 were male and 53 were female.

Table No. 1: Prevalence of malnutrition in the survey population (n= 110)

Types of Malnutrition	Total Number	%
OBESITY	09	8.11
UNDERNOURISHED	04	3.63

Table No. 2: Potential risk factors associated with Child Health Status (Malnutrition)

Factors
1.Mother's education level
2.Family Income/Poverty
3.Faulty Food Habits in family
4. Mother's age of pregnancy
5.Consumption of fast food
6. Lack of proper food knowledge of mother/Lack of nutritional Awareness
7. Misconceptions about Different foods
8. Family History of Diseases
9. Pollution of Kolkata
10. Time gap between food intake

Fig No.2: Economic Status of survey Family

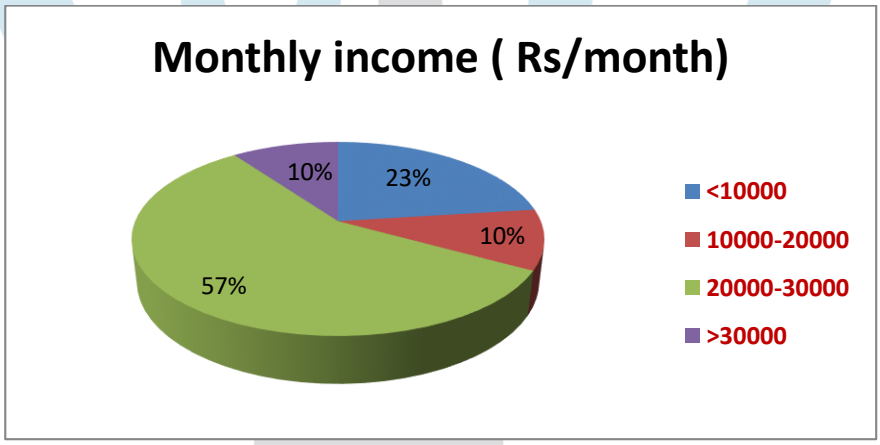


Fig No.3: Occupation of mother of survey Family

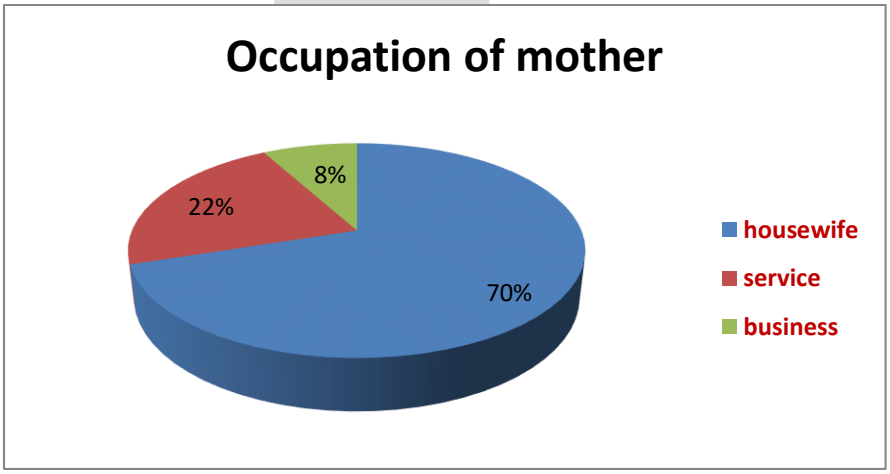


Fig No.3: Education level of mother of survey Family

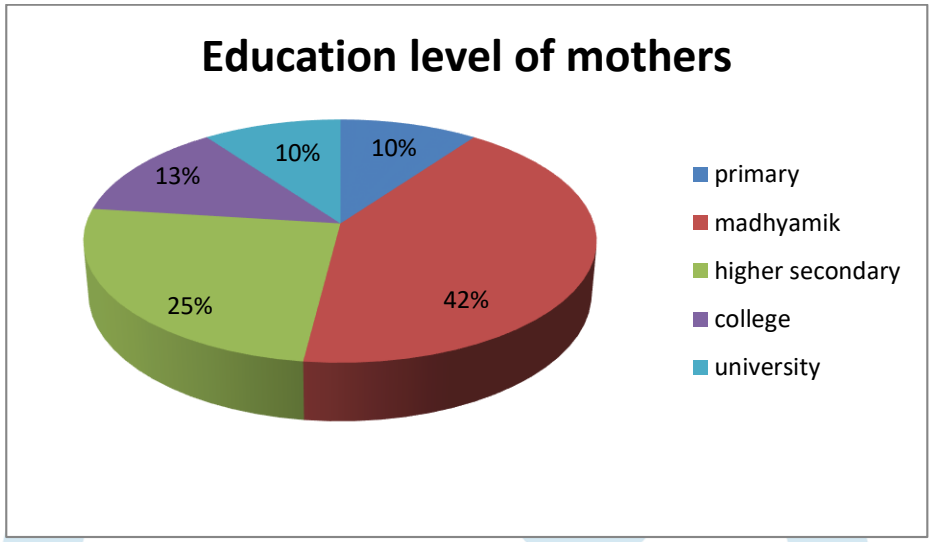
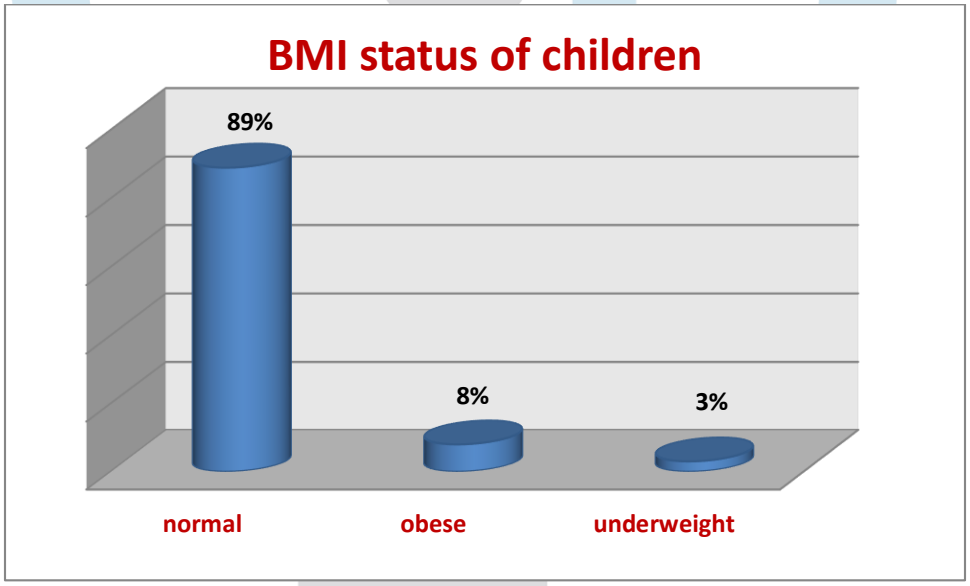


Fig. No.4: Distribution of malnutrition among children caused by faulty food habits



Result of this study shows that 8.11% children were obese whereas 3.63% children are undernourished. **(**From the table no. 1).

It was seen that modern lifestyle and faulty food habits was the most causative factor for creating malnutrition (both for obesity and also under nutrition) among children.

The leading causative mechanism of malnutrition was faulty food habits and consumption of fast foods by child. Modern lifestyles replace the traditional food habits from a family.

One striking finding of this study is the high pollution (especially air pollution) rate that causes more intake of antibiotic or allergic medicine followed by poor intestinal functions. As a result of that causes also poor nutrition intake by body itself. Nutrient deficiencies and gastrointestinal infections commonly co-occur in children. A child may contract an infection due in part to poor nutritional status. In turn, a gastrointestinal infection places the child at even greater risk for nutrient deficiencies because nutrients are unable to be absorbed properly. Consequently, nutrient deficiency combined with infection can cause growth retardation.

Occurrence of gender inequality & practice of patriarchy did not appear prominently in our study.

The analysis **(fig. no.1, 2, 3)** reveals that the malnutrition due to poverty was prevalent among lower income family with low education level of mother.

The majorities of victims of malnutrition (obesity) were the male child (64 %) & in the ages ranges from 5 to 10 years due to fast food consumption.

CONCLUSION:

Analysis of data from this study revealed that a faulty food habit is one of the important causative factors followed by poverty level for poor health status in terms of malnutrition among children. Despite the limitations of reporting bias, the findings highlight the complex and often contradictory nature of the relationships among factors at different levels.

Obesity was very much prevalent irrespective of caste, education & income differentials in the country. It is also true in our observation also.

This study revealed that overcoming the poor nutritional knowledge and lack of proper food guide of mother is essential.

Promotion of proper food guide in family and education to mother for improvement of child health can prevent the major socio-economic loss to the family and community at large.

REFERENCES:

1. United Nations Children's Fund, World Health Organization, The World Bank. UNICEFWHO- World Bank Joint Child Malnutrition Estimates.(http://data.unicef.org/resources/2013/webapps/nutrition
2. *Facts for life (PDF) (4th ed.). New York: United Nations Children's Fund. 2010. pp. 61 and 75. ISBN 978-92-806-4466-1.*
3. Young E.M. (2012). Food and Development. Abingdon, Oxon: Routledge. Pp. 36-38. ISBN 9781135999414.
4. *"Maternal, newborn, child and adolescent health". WHO. Retrieved July 4,2014.*
5. "Progress For Children: A Report Card On Nutrition"(PDF). UNICEF.
6. *Gardner, Gary; Halweil, Brian (2000). "Escaping Hunger, Escaping Excess". World Watch. **13** (4): 24.*
7. Malnutrition - UNICEF DATA **(**https://data.unicef.org/topic/nutrition/malnutrition/)
8. UNICEF/WHO/World Bank Joint Child Malnutrition Estimates, 2017 edition.
9. http://www.livemint.com/Politics/MAbkHJ0jYZ1hu9G0obNXiK/What-explains-Indias-high-child-malnutrition-rates.html
10. Rapid Survey on Children (2013-2014) Ministry of women and child development. Government of India.
11. Nutrition in India, Ministry of Health and Family Welfare, 2005-06, http://rchiips.org/nfhs/nutrition_report_for_website_18sep09.pdf
12. Helping India Combat Persistently High Rates of Malnutrition, The World Bank, May 13, 2013, http://www.worldbank.org/en/news/feature/2013/05/13/helping-india-combat-persistently-high-rates-of-malnutrition
13. Adam Wagstaff; Naoke Watanabe (November 1999). "Socioeconomic Inequalities in Child Malnutrition in the Developing World". *World Bank Policy Research Working Paper No. 2434*. And WHO (2014) World health statistics. Global health observatory data.
14. *UNICEF. "Introduction to Nutrition". UNICEF., March 3, 2014.*
15. Sachdev, H. P. S.; Shekar, M.; Maternal Child Undernutrition Study Group (2008). "What works? *The Lancet*. **371** (9610): 417–440, 2008.
16. Child Undernutrition in India: A Gender Issue. http://unicef.in/Story/108/Child-Undernutrition-in-India-A-Gender-Issue