

# INDIAN STREAMS RESEARCH JOURNAL

## CHILD NUTRITION AS AN INDICATOR OF SOCIOECONOMIC STATUS – A STUDY IN AKOLA CITY



### JAYSHREE TRAYMBAKRAO KATRE

Mobile: +91-8975139089

E-mail: -wbvijay@yahoo.co.in

#### INTRODUCTION:-

The world faces a global challenge due to the obvious and large inequalities in health within and between countries. The root of much of these inequalities can be attributed to social factors. There is evidence that the social determinants of health, such as the living circumstances, income, education, access to health care, employment rank and working conditions shape people health status. Reports attribute that the causes of poor health and inequalities between and within countries to these factors. Among them, income and education are defined as the most influential and powerful determinants of health.

The importance of addressing social determinants of health is recognized and reflected in the focus of public health of developed countries. Likewise, the relationship between socioeconomic status (SES) of people and their health outcome has been

examined extensively. Studies confirm that a vast number of adverse health outcomes such as mortality, self rated health, chronic conditions, disability and so on are attributable to socioeconomic status, usually measured in terms of education and income.

#### **Children Health:**

Children are the most valuable asset of a nation; their welfare and health is the edifice of sound and sustained economic development. An insufficient food intake and ignorance about nutrition coupled with low immunity ensure that the most vulnerable experience very fragile health.

#### **Nutrition and Health:**

Nutrition is a fundamental pillar of human life, health and development across the entire life span. The fundamental WHO goals of 'Health for All' means that people everywhere, throughout their lives, have the opportunity to reach and maintain the highest attainable level of health. This is impossible to attain in the presence of food insecurity and malnutrition problems. Good health is as essential to nutritional wellbeing, as good nutrition is crucial for maintaining healthy growth and development. Besides nutritional and vitamin deficiencies, rural and urban populace in the country also face lack of access to safe drinking water as well as sanitation facilities.

#### **Indicators of Nutritional Status:**

Anthropometric measurements such as height and weight are valuable indicators of nutritional status. Anthropometric measurements reflect the patterns of growth and development.

Anthropometric measurements are assessed for following:

##### **1. Weight-for-age:**

Low weight-for-age index identifies the condition of being underweight, for a specific age. The advantages of this index are that it may reflect present or acute under-nutrition.

##### **2. Height-for-age:**

This index is an indicator of past under-nutrition or chronic malnutrition. It cannot measure short term changes in malnutrition. Deficits in height-for age are signs of stunting.

#### **Malnutrition:**

Malnutrition has been defined as "a pathological state resulting from a relative or absolute deficiency or excess of one or more essential nutrients" According to FAO reports<sup>22</sup>, there are about 460 million people – 15 percent of world's population excluding china – who are malnourished, of which about 300 million live in South Asia where they constitute one third of population. What makes situation more serious is that malnutrition's main victims are children under the age of 15 years.

#### **Child Malnutrition:**

The most neglected form of human deprivation is malnutrition, particularly among preschool children. Malnutrition is associated with more than half of all deaths of children worldwide. Child development problems refer to problems of ill health, malnutrition, or inadequate psychosocial development, intellectual, social and emotional development.



At least three factors are responsible for the rising interest in child development during the past few decades. Firstly, the increasing success of child survival programmes coupled with progress in economic development. Secondly, its failure results in reduced school performance, less productive labor force, and increased welfare and other social expenditures. Thirdly, International research findings give valuable inputs for giving more primacy to child development. Few countries also made major financial commitments to launch and expand child development programmes in the early 1980's. Taking this footstep, India implemented its Integrated Child Development Services (ICDS) and Effective Early Child Development programmes to combine interventions in health, nutrition and early education. The cross-sectoral approach is advocated in this regard partly because this makes sense to parents and children. A child is born without barriers and to achieve its full potential in life an integrated approach in the field of health, nutrition or education is required.

While nutrition and health are two sides of the same coin, nutrition is increasingly being recognized as an important indicator of development at national and international levels. India has progressed dramatically in various fields but its malnutrition level hasn't shown any desired reduction. As a result the effect of malnutrition and poor health indicators like infant mortality rate, under-five mortality rate and maternal mortality rate in India are higher than some of the developing countries of the South East Asia. Under-five years children are nutritionally the most vulnerable and among them more than half of these children are unable to grow to their full physical and mental potential.

#### **Socio-Economic Determinants of Health and Nutrition:**

Keeping the pace of socio-economic and nutritional transition in developing countries, India has also undergone tremendous changes for the last decade but under-nutrition remains a public health challenge. India is one of the few countries in the world where poor nutritional status among preschool children is detrimental to their health outcome. According to WHO; one in three children in India suffers from stunting and one in every two children from underweight. Nutritional status indicators like wasting, stunting, low birth weight, breast feed availability and vitamin A deficiency are also still high in India compared to the USA and China. The poor health of child prevents him to have required food intake, at the same time reduces the absorption capacity of his body, resulting in loss of nutrients faster than before, thereby setting stage for further decline in his health.

Lack of nutritious food, poor hygiene and sanitary practice in the household, poverty, illiteracy among mothers and lack of health care only aggravate the problem. Since in rural India these attributes are wide spread, the process of recovering from poor nutritional status in latter life is more difficult for these children. Since children are the most valuable asset of a nation, their welfare and health is the edifice of sound and sustained economic development.

#### **Need of the Study:**

The survival of Indian child is a matter of concern because they are far behind in availing health care, nutrition and education facilities. Besides endemic diseases and government's limited public health spending, malnutrition also contributes to infant, child and maternal mortality. The infant mortality rate has shown a marginal decline and is presently at 58 per thousand live births. This degrading scenario can be removed if efforts are focused on eradicating malnutrition. Almost 46 percent of all children under three are underweight

and almost 80 percent of children in the age group of 6-35 months are anaemic. As many as 57 out of 1000 children die before they reach the age of one year (Planning Commission, 2007). Article 47 of the Constitution of India states that, “the state shall regard raising the level of nutrition and standard of living of its people and improvement in public health among its primary duties”.

India which stands 66th out of 88 developing countries in the Global hunger index 2008 (GHI) reveals its lackluster performance at eradicating hunger. The GHI was developed by IFPRI (2006) and Wiseman et al (2006), as a means of capturing three interlinked dimensions of hunger- inadequate consumption, child malnutrition and child mortality. Hunger is most directly manifested in inadequate food intake and lack of a proper diet especially in combination with low birth weight and high rates of infections which result in stunted and underweight children. According to GHI 2008, not a single state in India falls in the ‘low hunger’ or ‘moderate hunger’ categories. Instead, most states fall in the ‘alarming’ category with one state - Madhya Pradesh - falling in the ‘extremely alarming’ category. Four states – Punjab, Kerala, Andhra Pradesh and Assam fall in the ‘serious’ category. It reveals that for the majority of states child underweight is responsible for the largest variability between states.

#### **Objectives of the Study:**

- To study the impact of socio-economic status on acute malnutrition of boys and girls.
- To study the impact of socio economic status on chronic malnutrition of boys and girls.

#### **Hypotheses for the Study:**

- There is no significant impact of socio-economic status on weight for age i.e. indicator of acute malnutrition of boys and girls.
- There is no significant impact of socio-economic status on height for age i.e. indicator of chronic malnutrition of boys and girls.

#### **Scope and Delimitations:**

- The study is planned to cover the socio-economic status of boys and girls belonging to various socio-economic status.
- The study is widened enough to cover acute and chronic malnutrition.
- The study is delimited to Akola city only.
- The study is delimited the children under the age of five years.

#### **Review of Literature:**

Woldemariam Girma and Timotiows Genebo studied Determinants of Nutritional Status of Women and Children in Ethiopia. In this study, the indicator used to assess chronic energy deficiency malnutrition in women is body mass index (BMI), also known as the Quetelet index. This indicator is the most frequently used standardized indicator of thinness (wasting) to assess the progressive loss of body energy in developing countries. It is defined as the weight in kilograms divided by the square of the height in meters ( $\text{kg}/\text{m}^2$ ). This study found evidence that socioeconomic and demographic variables have a significant influence on the odds of CED in women and malnutrition in children. Region of residence, household economic status, woman’s employment status and decision making power over her income, woman’s age and marital status are important determinants of CED among reproductive age women (15-49 years). It was also found that household economic status, education of parents, number of prenatal care visits of the mother (as a proxy for access to health services), child’s age, birth order and preceding birth interval are important determinants



of child stunting.

Abbas Bhuiya, Bogdan Woityniak, Stan D'Souza, and Susan Zimicki studied Socio-economic determinants of child nutritional status: boys versus girls in Bangladesh they found that child nutritional status is determined by a variety of complex factors of which adequate food intake and proper health care. The study suggests that the sex of the children should be considered as an important factor in studying the socio-economic determinants of nutrition (and perhaps even mortality) in a society like rural Bangladesh. The relationship between household SES, including mother's education, and child nutrition and mortality may vary between boys and girls.

### Methodology of Research:

The measures used to assess socio-economic status and anthropometry were a survey administered in the mixed population of Akola city conducted by the author. Data were collected by the author during the winter months of 2014. Parental consent was taken for study participation. Simple random sampling method was used to select the samples. One hundred invited families and children participated in the study. Self constructed Socio economic status scale was used to assess the socio-economic status of the families residing in Akola city. Anthropometric measurements like weight for height is assessed for acute nutritional status and height for age were assessed for chronic nutritional status. The anthropometric measurements of the children belonging to these families whose SES has been assessed were conducted. Formula of one child from one family was followed. 50 male children and 50 female children were selected for the study to assess the gender differences in the impact of SES on nutritional status.

### Result and Discussion:

**Hypothesis No. 1: There is no significant impact of socio-economic status on weight for age i.e. indicator of acute malnutrition of boys and girls.**

Table No. 1.1

Sr. No.	Variable	Height								
		All Children			Girls			Boys		
		N	Mean	SD	N	Mean	SD	N	Mean	SD
1	Upper Class	8	102	1.85	4	100.75	0.96	4	103.25	1.71
2	Upper Middle Class	18	98.33	4.6	9	96.56	4.36	9	100.11	4.34
3	Middle Class	44	94.48	5.59	22	93.09	5.71	22	95.86	5.22
4	Lower Middle Class	16	87.75	6.26	8	86.63	5.71	8	88.88	6.96
5	Lower Class	14	76.29	3.71	7	74.86	3.39	7	77.71	3.68

Figure 1

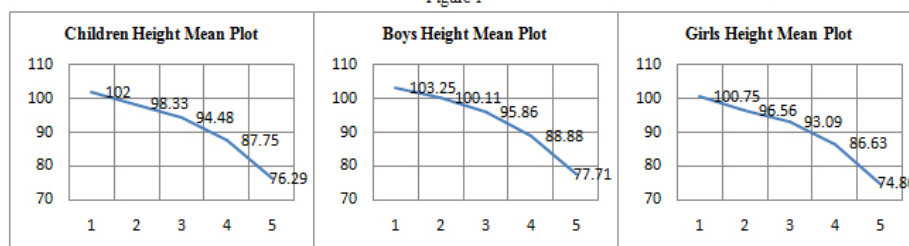


Table No. 1.2

Variable	SV	Sum of Squares	df	Mean Square	F
All Children Height	Between Groups	5535.92	4	1383.98	52.74**
	Within Groups	2492.83	95	26.24	
	Total	8028.75	99		
All Girls Height	Between Groups	2728.1	4	682.02	26.98**
	Within Groups	1137.52	45	25.28	
	Total	3865.62	49		
All Boys Height	Between Groups	2811.79	4	702.95	27.45**
	Within Groups	1152.53	45	25.61	
	Total	3964.32	49		

It is clearly indicated from the above tables that the mean height for age of children belonging to upper class socio-economic status is highest as we move downward in socio-economic status the mean of height decreases. The mean height of children belonging to lower class socio-economic status is lowest. The F value calculated for mean height of children belonging to various socio-economic statuses is significant at 0.01 level of significance, hence we can say that the variation in mean height of children belonging to various socio-economic statuses is significant.

Similar Pattern of distribution is observed in case of girl's height for age under the age of 5 in Akola city. The F value calculated for girl's height for age is also significant.

Similar Pattern of distribution is observed in case of boy's height for age under the age of 5 in Akola city. The F value calculated for boy's height for age is also significant.

Therefore Hypothesis No. 1 is rejected.

From the above discussion we can conclude that the mean height for age of all children, girls and boys significantly decreases from higher socio-economic status to lower socio-economic status. Hence it is clear that socio-economic status has a significant impact on height for age of children under 5 in Akola city.

**Hypothesis No. 2: There is no significant impact of socio-economic status on height for age i.e. indicator of chronic malnutrition of boys and girls.**

Table No. 2.1

Sr. No.	Variable	Weight								
		All Children			Girls			Boys		
		N	Mean	SD	N	Mean	SD	N	Mean	SD
1	Upper Class	8	19.5	2.45	4	17.5	1.29	4	21.5	1.29
2	Upper Middle Class	18	16.28	2.16	9	15.44	2.3	9	17.11	1.76
3	Middle Class	44	15.66	2.08	22	15.18	2.22	22	16.14	1.86
4	Lower Middle Class	16	13	1.26	8	12.75	1.49	8	13.25	1.04
5	Lower Class	14	11.57	1.09	7	11.43	0.98	7	11.71	1.25

Figure No. 2

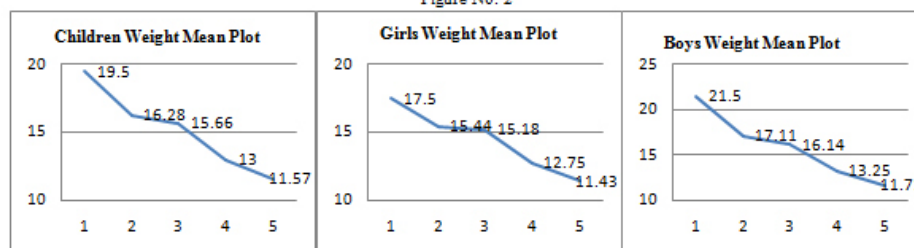


Table No. 2.2

Variable	SV	Sum of Squares	df	Mean Square	F
All Children Weight	Between Groups	438.43	4	109.61	30.01**
	Within Groups	346.93	95	3.65	
	Total	785.36	99		
All Girls Weight	Between Groups	144.79	4	36.2	9.49**
	Within Groups	171.71	45	3.82	
	Total	316.5	49		
All Boys Weight	Between Groups	315.81	4	78.95	29.75**
	Within Groups	119.41	45	2.65	
	Total	435.22	49		

It is clearly indicated from the above tables that the mean weight for age of children belonging to upper class socio-economic status is highest as we move downward in socio-economic status the mean of weight decreases. The mean weight of children belonging to lower class socio-economic status is lowest. The F value calculated for mean weight of children belonging to various socio-economic statuses is significant at 0.01 level of



significance; hence we can say that the variation in mean weight of children belonging to various socio-economic statuses is significant.

Similar Pattern of distribution is observed in case of girl's weight for age under the age of 5 in Akola city. The F value calculated for girl's weight for age is also significant.

Similar Pattern of distribution is observed in case of boy's weight for age under the age of 5 in Akola city. The F value calculated for boy's weight for age is also significant.

Therefore Hypothesis No. 2 is rejected.

From the above discussion we can conclude that the mean weight for age of all children, girls and boys significantly decreases from higher socio-economic status to lower socio-economic status. Hence it is clear that socio-economic status has a significant impact on weight for age of children under 5 in Akola city.

### **Conclusion:**

It is clear from the findings that socio-economic status has a well defined impact on the child nutrition irrespective of the gender differences. The higher socio-economic status better will be the nutritional health of child. This consideration is true in case of both acute nutritional status i.e. weight for age and chronic nutritional status i.e. height for age. Hence we can conclude that weight for age and height can be used as indicator for assessment of socio-economic status.

### **References:**

Abbas Bhuiya, Bogdan Woityniak, Stan D'Souza, and Susan Zimicki Socio-economic determinants of child nutritional status: boys versus girls

<http://archive.unu.edu/unupress/food/8F083e/8F083E01.htm>

Nusrat Begum; A study of Moral values among primary level students with respect to education level of parents; Golden Research Thoughts Vol. III issue I July 2013 (ISSN 2231-5063)

Woldemariam Girma and Timotiows Genebo Determinants of Nutritional Status of Women and Children in Ethiopia

<http://www.un.org/esa/natinfo/indicators/methodologysheets/health/nutritionalstatus.pdf>

### **Web References:**

<http://her.oxfordjournals.org/content/12/3/385.full.pdf+html>

<http://unesdoc.unesco.org/images/0021/002157/215737E.pdf>

<http://www.equityhealthj.com/content/pdf/1475-9276-2-7.pdf>

<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2490974/pdf/bullwho00083-0148.pdf>