

# A study of malnutrition in children in the urban field practice area of MIMSR medical college, Latur (M.S)

Dr Jitendra B. Surwade<sup>1</sup>, Dr Akshay H. Salgar<sup>1</sup>, Dr. Mrs. Sarita B. Mantri<sup>2</sup>

<sup>1</sup> MNR Medical College, Sangareddy, Telangana India  
Email: jitendrapsm@gmail.com

<sup>2</sup> MIMSR Medical College, Latur Maharashtra India

**Abstract** — Children are the first call on agenda of human resources development – not only because young children are the most vulnerable, but because the foundation for lifelong learning and human development is led in these crucial years. Malnutrition is a widespread nutritional disease in the developing countries. Approximately 60 million children are underweight in India. Underweight prevalence is higher in rural areas (50 percent) than in urban areas (38 percent); higher among girls (48.9 percent) than among boys (45.5 percent). The present study was conducted with the objective to study malnutrition in children (0-6yrs) in urban field practice area of MIMSR medical college, Latur. The study was conducted in anganwadi centers in the urban field practice area of MIMSR medical college, Latur (M.S.). The parents were interviewed to get the necessary information. Nutritional assessment was done using anthropometry and clinical examination. The grading of malnutrition was done as per guidelines by Indian academy of pediatrics (IAP). The prevalence of malnutrition in the urban field practice area was 46.46% and grade I malnutrition was most common. Age of the child and socioeconomic class were the common factors associated with the malnutrition.

**Index Terms** — Malnutrition, anganwadi, field practice area

## I. INTRODUCTION

Children are the first call on agenda of human resources development – not only because young children are the most vulnerable, but because the foundation for lifelong learning and human development is led in these crucial years. It is now globally acknowledged that investment in human resources development is a pre-requisite for economic development of any nation. Early childhood (the first six years) constitutes the most crucial period in life, when the foundation are laid for cognitive, social, emotional, physical/motor development and cumulative lifelong learning. Child survival, growth and development, has to be looked at as a holistic approach, as one cannot be achieved without the others. There have to be balanced linkages between education, health and nutrition for proper development of a child.[1]

Each year 27 million children are born in India. Around 10% of them do not survive to 5 years of age. In absolute figures, India contributes to 25% of the over 9.0 million under five deaths occurring worldwide every year. Nearly half of under-five death occurs in neonatal period.[2]

India is home to more than one-third of the world's under-nourished children. PEM has been identified as a major health and nutrition problem in

India as well. It not only leads to childhood mortality and morbidity but also leads to permanent impairment of physical and possibly mental growth of those who survive. [3]

There has been a close association between malnutrition and infections. It is a vicious cycle that perpetuates in the setting of poverty, ignorance and lack of health services. Malnutrition in childhood diminishes the proper development of the immune response mechanism. The cellular immune responses are markedly impaired leading to a higher mortality from the seemingly common infections. Good nutrition is a fundamental requirement for positive health, functional efficiency and productivity. [4]

Approximately 60 million children are underweight in India. Given its impact on health, education and productivity, persistent undernutrition is a major obstacle to human development and economic growth in the country, especially among the poor and the vulnerable, where the prevalence of malnutrition is highest. The progress in reducing the proportion of undernourished children in India over the past decade has been modest and slower than what has been achieved in other countries with comparable socioeconomic indicators. While aggregate levels of undernutrition are shockingly high, the picture is further exacerbated by the significant inequalities across states and socioeconomic groups – girls, rural areas, the poorest and scheduled tribes and castes are the worst affected – and these inequalities appear to be increasing.

## II. AIMS AND OBJECTIVES

To study the prevalence of malnutrition and some associated factors in children in the urban field practice area of MIMSR medical college, Latur (M.S.)

## III. MATERIALS AND METHOD

The present cross sectional study was conducted in the urban field practice area of MIMSR medical college, Latur. For the purpose of study total six anganwadis were selected randomly from the field practice area and total 254 children were examined in the study. The selected anganwadis were visited for data collection after taking permission from appropriate authority. The parents of children from selected anganwadis were called on a scheduled day to anganwadis for interview. Information was collected from the parents of the child beneficiary of the anganwadi with a pre-tested and pre-structured proforma which includes basic information (Age, Sex,

Religion, Address, Socioeconomic status, etc.) and the proforma also includes information about supplementary nutrition status provided in anganwadi and immunization status, etc.) Specific detailed criteria were utilized to assess and quantitate various qualitative and quantitative aspects of utilization of study. The history of present illness or illness in last one month (if any) was asked. Complete physical examination of the child was done including systemic examination i.e. cardiac, respiratory, central nervous system and per abdomen examination. Anthropometry including weight in kg by Salter's weight scale, height, mid arm circumference, head circumference and chest circumference in cm was recorded with the help of measuring tape. After examination treatment was given whenever required. Children requiring referral service were referred to nearest primary health center or medical college hospital for further management. Weight for age was taken as criterion for malnutrition as per Indian Academy of Pediatrics (I.A.P.) classification. Immunization coverage of the children was assessed from immunization cards of children and scrutiny of records.

**IV. RESULTS**

**Table no.1: Age and sex distribution of children**

Variable		No. of children (%)
AGE(in years)	≤ 1 yr	13 (5.12%)
	>1yr to 3yr	93 (36.61%)
	>3yr to 6 yr	148 (58.27%)
SEX	Male	142 (55.91%)
	Female	112 (44.09 %)
Total		<b>254 (100%)</b>

It was observed that majority (58.27%) of children in the study were between 3 to 6 years old. The proportion male children were 55.91%.

**Table no.2: Nutritional status of children.**

Nutritional status		No. of children (%)
Normal		136 (53.54%)
Malnourished	GR I	82 (32.28%)
	GR II	28 (11.03%)
	GR III & GR IV	8 (03.15%)
Total		254 (100%)

The prevalence of malnutrition was 46.46%. It was observed that majority (32.28%) of the malnourished children were of grade I malnutrition, followed by grade II (11.03%).

**Table no.3: Sociodemographic Factors associated with malnutrition.**

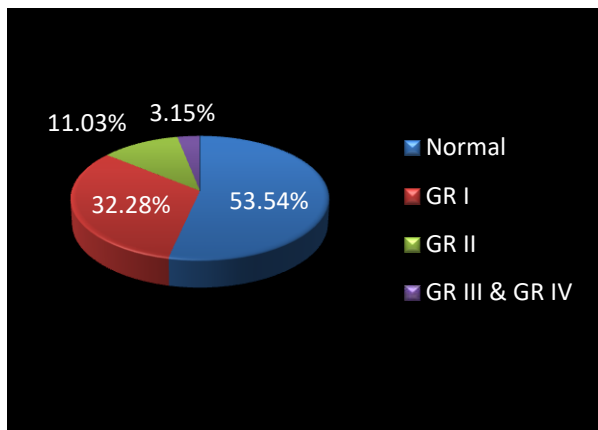
Variable		Malnourished (n=118)	Normal (n=136)	P value
Age	< 1 yr	6 (5.08%)	7 (5.15%)	0.001*
	1 to 2 yrs	13 (11.02%)	24 (17.65%)	
	2 to 3 yrs	33 (27.97%)	23 (16.91%)	

	3 to 4 yrs	24 (20.34%)	40 (29.41%)	
	4 to 5 yrs	16 (13.56%)	32 (23.53%)	
	5 to 6 yrs	26 (22.03%)	10 (7.35%)	
Sex	Male	64 (54.24%)	78 (57.35%)	0.617
	Female	54 (45.76%)	58 (42.65%)	
Education of mother	Illiterate	13 (11.02%)	9 (6.62%)	0.380
	Middle school	87 (73.73%)	109 (80.15%)	
	High school & Above	18 (15.25%)	18 (13.24%)	
Type of family	Nuclear	77 (65.25%)	77 (56.62%)	0.179
	Joint	4 (3.39%)	11 (8.09%)	
	Three generation	37 (31.36%)	48 (35.29%)	
Socio economic status	I	0 (0.00%)	6 (4.41%)	0.021*
	II	22 (18.64%)	24 (17.65%)	
	III	45 (38.14%)	67 (49.26%)	
	IV	50 (42.37%)	37 (27.21%)	
	V	1 (0.85%)	2 (1.47%)	
Immunization status	Complete	108 (91.53%)	123 (90.44%)	0.763
	Incomplete	10 (8.47%)	13 (9.56%)	

\* Statistically significant

It was observed that majority of the malnourished children were more than three years of age. It was seen that as age increases the prevalence of malnutrition was increasing. The proportion of malnourished and normal male children was 54.24% and 57.35% respectively and the difference was statistically insignificant. The education of mother and type of family were not affecting the nutritional status of children.

It was observed that majority of the malnourished were belonging to class IV of socioeconomic class. The difference observed in the socioeconomic class and nutritional grade of children was statistically significant. The immunization status in malnourished and normal children was nearly equal.



**Figure 1. Prevalence of various grades of malnutrition.**

**Table no.4: Morbidity pattern in the study children**

Morbidity#	No. of children	percentage
Malnutrition	118	46.46%
ARI	25	9.84%
Diarrhea	12	4.72%
Pallor	22	8.66%
Dental caries	41	16.14%
Vitamin A deficiency	06	2.36%
Vit B complex deficiency	07	2.76%
Worm infestation	01	0.39%
Ear discharge	01	0.39%
Skin infection	01	0.39%
PUO	03	1.18%

# Multiple responses were obtained.

Morbidity pattern in children at the time of examination was also recorded. Multiple responses were recorded at the time of examination. Malnutrition was the major morbidity. Majority of malnourished children were suffering from anemia, ARI, diarrhea and dental caries.

**V. DISCUSSION**

The present study was conducted to study the prevalence of malnutrition and some associated factors in children in the urban field practice area of MIMSR medical college, Latur. The prevalence of malnutrition in study area was 46.46% which was comparable to prevalence reported by Shubhada S. Avachat et al (50.46%)[5]. This percentage was less than the percentage of malnourished children reported by Bhatia V et al[6] (65.87%), S. P. Mitra et al[7] (61.11%), Anita Khokhar et al[8] (60.7%) and K.D.Bhalani et al[9] (62.9%).

It was observed that majority of malnourished children (32.28%) were from grade I malnutrition. Similar findings were also reported by S. P. Mitra et al<sup>7</sup> (37.6%) and Umesh Kapil et al[10] (35.2%).

The percentage of grade I malnourished children in study area was more than reported by A Mittal et al[11] (26.76%) and Arshad Farooq et al[12] (24.14%). Though the percentage was more for grade I malnutrition there was decrease in grade II malnutrition.

It was observed that majority (55.93%) of the malnourished children were more than three years of age. The proportion malnutrition was observed to be increasing as age was increasing. Similar trend was also reported by K.D.Bhalani et al.[13] Deterioration of nutritional status with increasing age was may be because of poor weaning practices. During weaning process child is exposed to deleterious synergistic action of malnutrition and infection. Once the child become malnourished due to weakened immune system, child become prone to infection and may fall in vicious cycle of malnutrition and infection, which increases with age.

Sexwise proportion of malnourished and normal children was nearly similar in the present study. The percentage of male malnourished children (54.24%) was more than female malnourished children (45.76%). Similar scenario was reported by Bhatia V et al[6] where more male children (65.87%) were malnourished than female children (58.9%).

The morbidity pattern observed at the time of examination during the study. Multiple responses were recorded at the time of examination. Malnutrition was one of the major causes of morbidity in the study area. Following malnutrition it was observed that dental caries, acute respiratory infection and diarrhea were common causes of morbidity in children in the study area.

Benjamin and Zachariah[14] also observed a highly significant inverse relationship between higher maternal education and childhood malnutrition. But in the present study the difference between maternal education status and malnutrition was not statistically significant. Because that study was conducted in the urban field practice area which was the slum area and majority of the women were illiterate or had educational qualification upto middle school. The difference between socioeconomic class and the malnutrition was also significant. Thus we could state that as socioeconomic class improves the province of malnutrition decreases.

**VI. CONCLUSION**

The prevalence of malnutrition in the urban field practice area was 46.46% and grade I malnutrition was most common. Age of the child and socioeconomic class were the common factors associated with the malnutrition.

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