



A CROSS-SECTIONAL STUDY TO ASSESS HEALTH STATUS OF CHILDREN IN URBAN SLUM IN SAGAR CITY

Ragini Shrivastava¹, Abhay Kumar Choudhary², Jagrati Kiran Nagar³, Rituja Kaushal⁴

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Author's Affiliation:

¹Asso Prof, Physiology, BMC Sagar, Sagar (MP); ²Asso Prof, Paediatrics, LNMC&RC, Bhopal (MP);

³Assistant Professor, (Obs & Gynae), BMC Sagar, Sagar (MP);

⁴Assistant Professor, Community, Medicine, LNMC&RC, Bhopal (MP)

Correspondence:

Dr. Ragini shrivastava
raginishrivastava5@gmail.com

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ABSTRACT

Introduction: The future of the society depends on the quality of life of the children. Nutritional problems like protein energy malnutrition (PEM), anemia and vitamin A deficiency continue to plague a large proportion of Indian children. The diets and nutritional status of urban slum children in India is far away from being satisfactory. The major objective of this research is "to assess the health status of children of slum area.

Method: The study comprised of 60 children of age group 1-10 from slum area in Sagar city. Detailed clinical examination, anthropometric measurement and Hemoglobin (Hb) estimation of all the children were done.

Result: All the families were belonging to low socioeconomic group. Most of the children's (53.44%) were partially immunized and 30% were not immunized only 16.7% were completely immunized. Total (50%) of children's were malnourished out of that (13.36%) were had third degree malnutrition. And more than 80% children showed skin and hair changes and other signs of malnutrition. Most common micronutrient deficiency found was anemia.

Conclusion: Malnutrition is still a major public health problem in urban slums.

Keywords: Urban slum, Sagar city, Anemia, Protein energy malnutrition, Low socioeconomic group

INTRODUCTION

Malnutrition continues to plague large proportion of children in India. In the second National Family Health Survey (NFHS-2) report, almost half of children under three years of age (47%) were underweight, and a similar percentage (46%) was stunted.¹ Countrywide data for the prevalence of malnutrition in urban slums is lacking.² Severe acute malnutrition in childhood has become steadily less common in India.³ Rapid urbanization in the 20th century has been accompanied by the development

of slums. Nearly one third of the world's population and more than 60% of urban populations in the least developed countries live in slums, including hundreds of millions of children. Slums are areas of broad social and health disadvantage to children and their families due to extreme poverty, overcrowding, poor water and sanitation, substandard housing, limited access to basic health and education.

For most of the 20th century, urban areas were associated with improved child health and lower

mortality than rural areas.^{4,5,6} Cities provided families with more economic and educational opportunities, improved nutrition and more possibilities for healthcare. However, despite overall favorable health statistics in cities, several authors have pointed out large variations between countries and within cities, and the potential influence of slums on these variations.^{7,8}

Slums concentrate many known risk factors for parasitic, waterborne and vector-borne diseases, including: flooding open sewers and overcrowding.^{2,6} Poor hygiene practices further aggravate the problem and high rates of malnutrition in children, and In slums, infants who live without piped water may have up to 4.8 times the risk of death from diarrhoea.^{9,10} Existing data suggests that the child health benefits of living in cities are attenuated in slums. Emphasizing the urban health advantage may no longer be appropriate in heterogeneous modern cities, particularly in the setting of slums. Many indicators of child health are worse in slums than in neighboring urban areas or even rural ones.

Current levels of underweight and stunted children are abysmally high and assertion that malnutrition is a “national shame” is still valid.

The nutritional status of slum children is worst amongst all urban groups and is even poorer than the rural average. Under nutrition impairs physical, mental and behavioral development of millions of children and is a major cause of child death.^{11,12} The objective of the present study is to study the health status of children in slums of Sagar city.

MATERIAL AND METHODS

Present study was conducted in Bundelkhand Medical College Sagar. Here 60 children of age range of 1-10 years from 25 families of slum area near a construction site in Sagar city were selected as per convenience sampling. All the families were from remote areas of Madhya Pradesh and migrated to Sagar for work. Verbal consent was taken & study was conducted after taking permission from institutional ethical committee. Parents were interviewed by predesigned and pretested questionnaire after obtaining informed consent from the respondent.

The height and weight of children were recorded as per standard procedure and categorization for malnutrition was done according to Gomez’s classification¹³, and for immunization in three category complete (all vaccines up-to age one), partial (some vaccine not all) and incomplete (no vaccine at-all). Prasad modified by Kumar classification were used for assessment of socio-economic status.

Detailed clinical examination was done to find out

various nutritional deficiency and other disorders. Sickness was defined as any child between 0-10 years suffering from fever (lasting at least two days), or acute respiratory infection or ear- ache, diarrhea (3 episodes of watery loose stool for at least one day). Anemia was diagnosed based on clinical examination and categorized on the basis of Hb value. Hemoglobin estimation was done using Sahli’s method. And categorization of anemia was done according to WHO criteria¹⁴ Statistical analysis was done by using MS excel spread sheets.

RESULTS

In present study total 60 children’s were studied, out of that 55% were males and 45% females; majority of children between the 4-6 years of age. All the families were belonging to low socioeconomic group.

Most of the children’s (53.44%) were incompletely immunized, 16.7 %were completely immunized 30% were not immunized. Total (50%) of children’s were malnourished out of that (13.34%) were had third degree malnutrition. And 3.34 had severe malnutrition. Most common acute infection observed was respiratory infection (55.20%), followed by diarrhea (27.40%).

Table 1: Distribution of study population according to their Immunization Status

Immunization status	Children (%)
Complete	10 (16.7)
Partial	32 (53.3)
Incomplete	18 (30.0)
Total	60 (100)

Table 2: Distribution of study population according to Nutritional status

Nutritional status	Children (%)
Road to health	30 (50)
Malnourished	30 (50)
First degree	20 (33.33)
Second degree	8 (13.33)
Third degree	3 (3.3)

On clinical examination only 16.67% showed good general condition 46.67% were poor and 11.67% were categorized as very poor. 93.33 per cent of respondents had normal eyes with no presence of discharge, only 5 per cent having watery eyes. Lips: 46.67 per cent of the children were observed to suffer mild Angular Stomatitis and close to 6.67 per cent had marked Angular Stomatitis. Gums: were observed normal in 93.33 per cent of the respondents, while 5 per cent of them had bleeding gums. Teeth: 25 per cent of the children had chalky teeth

confirming the deficiency of Calcium, 33.33 per cent had discolored teeth which could be a result of poor dental care. Hair: 16.67 per cent of children had normal hair. However, 28.33 per cent had dull hair or hair without luster. 46.67 per cent of the respondents had discolored and dry hair and 8.33 per cent had sparse and brittle hair. A not so encouraging hair condition of the respondents indicates a significant deficiency of protein amongst the children. Bones: 96.67percent were found normal. 3.33 percent of the children had clinical Rickets. Skin appearance: was normal in 16.67 per cent, dull in luster in 25 per cent, 50 per cent of the respondents had dry and rough skin. Hyperkeratosis was observed in 8.33 percent of children.

Table 3: Distribution of study population on the basis of clinical examination

Clinical Signs	Category	Children(%)
General Appearance	Good	10 (16.67)
	Fair	15 (25)
	Poor	28 (46.67)
	Very Poor	07 (11.67)
Hair	Normal	10 (16.67)
	Loss of Luster	17 (28.33)
	Discolored & Dry	28 (46.67)
	Sparse & Brittle	05 (8.33)
Eye Discharge	Absent	56 (93.33)
	Watery	3 (5)-
Lips	Mucopurulent	1 (1.67)-
	Normal	28 (46.67)
	Angular Stomatitis, Mild	28 (46.67)
Gums	Angular Stomatitis, Marked	4 (6.67)-
	Normal	56 (93.33)
	Bleeding	3 (5)
	Pyorrhoea	1 (1.67)
Teeth	Retracted	0 (-
	Normal	12 (20)
	Chalky Teeth	15 (25)
	Discoloured	20 (33.33)
Skin	Pitting of Teeth	08 (13.33)
	Normal	10 (16.67)
	Loss of Luster	15 (25)
	Dry & Rough	30 (50)
Bones	Hyperkeratosis	05 (8.33)
	Normal	58 (96.67)
	Rickets	02 (3.33)

Table 4: Distribution of study population in terms of grading of anemia (as per WHO)

Hemoglobin concentration	Children (%)
Normal	12 (20.04)
Mild anemia	15 (25.05)
Moderate anemia	26 (43.42)
Severe anemia	07 (11.69)

Most common micronutrient deficiency was anemia. 20.04% were having normal Hb 25.05% mild, 43.42% moderate and 11.69% had severe anemia.

DISCUSSION

Under nutrition is a major public health problem worldwide, particularly in developing countries¹⁵. Many studies have been conducted to study health status of children in slums.^{16,17,18} A valid comparison of the studies is not possible because of disparity in regard to the age of children studied, the method of classification of malnutrition (Gomez, IAP, WHO *etc.*),“standards” used (Harvard or NCHS) and the sampling methods.

The National Institute of Nutrition’s Jabalpur and Calcutta study¹⁷ reported a higher prevalence (94% and 92% respectively). It is evident that the prevalence of malnutrition in urban slums is much higher than national average for rural and urban areas. The prevalence of wasting and stunting available from relevant studies is also much higher in comparison to NFHS data for rural or urban population.¹ Some of these studies also reported a significantly higher prevalence of malnutrition in urban slum children in comparison to urban or rural population.^{17,18}

Urban levels of childhood malnutrition are lower than rural, but the most recent National Family Health Survey (NFHS-3: 2005–6) described stunting in 40%, wasting (weight for height z score < -2 SD) in 17%, and low weight for age (<-2 SD) in 33% of urban children under 5.¹⁹ In other study, 47% of children from Mumbai slum areas were stunted, 16% wasted, and 36% had low weight for age.²⁰ In our study we found 50% children are malnourished. Out of which 13.36 % has grade 3 malnutrition. Anemia is a serious concern for young children, because it can result in impaired cognitive performance, behavioral and motor development, coordination, language development and scholastic achievement, as well as association with increased morbidity from infectious diseases.^{21,22,23}

In NFHS-2, all over the country, about 70.8% of children up to the age of three in urban areas and 75.3% in rural areas had anemia and in a considerable proportion the anemia was of a moderate to severe degree.¹ Data from urban slums is available only from individual studies. A study from urban slums of Meerut, Uttar Pradesh reported a prevalence of 60% with 24% having severe anemia (Hb <7.0 g/dl)²⁴. In a recent population-based study from an urban slum Integrated Child Development Services (ICDS) project in Delhi²⁵, the prevalence of anemia (using WHO cut-off values of Hb< 11.0 g/dL) among children, 9-36 months of age, was 64%. Of these 7.8% had severe anemia (Hb < 7.0

g/dL). In our study 20.04% were having normal Hb 25.05% mild, 43.42% moderate and 11.69% had severe anemia.

Most common causes of malnutrition include faulty infant feeding practices, impaired utilization of nutrients due to infections and parasites, inadequate food and health security, poor environmental conditions and lack of proper child care practices. High prevalence of malnutrition among young children is also due to lack of awareness and knowledge regarding their food requirements and absence of a responsible adult care given.

CONCLUSION

In the above study it is concluded that malnutrition is still a major health problem in urban slums. Improving nutritional status of urban poor children requires a more direct, more focused, and more integrated strategy. Severe Chronic Malnutrition is generally an outcome of latent poverty, chronic food insecurity, poor feeding practices and protracted morbidities, but rarely a direct cause of mortality. In short, stunted children are hungry but not sick. Chronic malnutrition requires a far wider spectrum of programmatic interventions beyond clinical management. Multi-sectorial actions are needed to combat multi-dimensional deprivations. Simultaneously, there is an urgent need for promoting practices to improve the quality of local diets, improving child-feeding practices, reducing exposure to illnesses, and pediatric care services. This would need a broad-based commitment of resources as well as the creation and nurturing of local capacities and leaderships.

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