

A Survey Study of Anthropometric Characters of Malnourished Children of Slum Dwellers in Indore City

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Abstract: *Malnutrition affects human performance, health and survival, including physical growth, morbidity, mortality, cognitive development, reproduction, physical work capacity and risks for several chronic diseases. In Madhya Pradesh state there are 1.3 million severely malnourished children. Nutrition rehabilitation centers (NRCs) were started in the state to control severe malnutrition and decrease the prevalence of severe malnourished children to less than 1% among children aged 1-5 year. Objective of the present survey was i) to make aware people about nutritional and other preventive measures for protein energy malnutrition and severity of complications of PEM. ii) To investigate Prevalence of Malnutrition in Rural areas of Indore. Protein Energy Malnutrition among children below the age of 3-6 years as indicated by anthropometrical measurements (weight-for-age, weight-for-height, height-for-age), had been identified as a major public health problem in children of slum areas. The total number of surveyed children was 500 and they surveyed for appearance and status of hair, lips, teeth, and bones. Percentage of surveyed children having good, fair, poor, very poor appearance were 44.8%, 21%, 31%, 7.40% respectively. Percentage of surveyed children having normal hair, loss and luster hair, discolored & dry hair were 40.60%, 27.80%, 31.44% respectively. Percentage of surveyed children having normal lips and angular stomatitis lips were 51%, 49%, respectively. Percentage of surveyed children having normal teeth, chalky of teeth, pitting of teeth, discolored teeth were 60.80%, 11.40%, 9.40% 18.40% respectively. Percentages of surveyed children having normal skin, dry & rough skin were 71%, 29% respectively. Percentages of surveyed children having normal bones and rickets bones were 99.40%, 0.40%, respectively. Malnutrition among children in slum areas is a public health problem which requires active interventions to improve child and maternal nutrition. Breastfeeding and complementary feeding programs as well as early screening, active case management of PEM and public education should be considered as a national public health priority.*

Keywords: Children, Severe Malnutrition, Slum Areas, Indore City

1. Introduction

India is one of the fastest growing countries in terms of population and economics, sitting at a population of 1,139.96 million and growing at 10–14% annually from 2001–2007 (“India Country Overview, 2009). India’s Gross Domestic Product (GDP) growth was 9.0% from 2007 to 2008; since Independence in 1947, its economic status has been classified as a low-income country with majority of the population at or below the poverty line. (“India Country Overview, 2009). About 46% of the malnourished children below the age of 3 years are in India i.e. about 45 million little boys and girls are malnourished in terms of standard weight for age criterion Punjab and Kerala reported the lowest proportion of underweight children (27% and 28.8% respectively), while in Jharkhand and Madhya Pradesh more than 59% of children below the age of 3 years were underweight [1].

The National Family Health survey III (NFHS-III 2007) says that Madhya Pradesh tops the list of undernourished states with 60% malnutrition among children. Severe malnutrition among children is also highest in Madhya Pradesh (12.6%) as against 6.4% severely malnourished children in India.

A 2008 review of malnutrition found that about 55 million children are wasted, including 19 million who have severe wasting or severe acute malnutrition [2]. The aim of present survey was to know status of children of jhuggi jhopadi of indore city, and to observe visible symptoms of PEM. Preventative measures were also suggested to prevent PEM.

2. Materials and Methods

Anthropometric measurements like height, weight, and arm circumference and fat-fold thickness are widely used for the assessment of nutritional status of individuals and communities. These measurements are influenced by age, sex, socio-economic and environmental factors. The National Nutrition Monitoring Bureau (NNMB) of the National Institute of Nutrition (NIN) is the major source of data on heights and weights of the rural population, while special studies conducted in different metropolitan cities provide information on growth and nutritional status of the urban population.

3. Survey Areas

The study will be carried out in Indore city, Indore district, Madhya Pradesh (MP), during September 2012 and May 2013. It will be community based cross-sectional survey among Jhuggi Jhopdi (slum dwellers) of Indore city. Survey study was conducted with objective of presenting to the nation a recent set of area level data on nutrition status of children below 3-6 years old. The survey covered 500 households’ children across 11 slum area.

4. Criteria Used for Identification of Malnourished Children

By measuring their height & weight, Protein-energy malnutrition cases will be identified in each of these areas based on IAP guidelines.

Jhuggi Jhophdies selected for the study

Following eleven Jhuggi Jhopdi of slum areas of Indore city were selected for the survey

- Gwala colony prajapat Nagar, Indore
- Shekhar Nagar, phulmandipandharinath Thana , Indore
- Arjunpuralal bag, Indore
- Sudhama nagar, Indore
- Professor colony bhanwarkhua, Indore
- Silicon city, Indore
- Chandmari compounder, Indore
- Choithram, Indore
- Labariyabheru M.O.G. line, Indore
- Navlakha , Indore
- Kandilpurakila Medan, Indore

Home visits were made and information was collected regarding the risk factors for malnutrition. The study was conducted over eleven slum areas of Indore city. Multi stage sampling procedure was adopted to select approximately 500 hundred children (3-6 year) for the present study. The parents were interviewed to get the necessary information. A door to door survey was done and general information like name of the child, father’s name, age and sex of the child, type of family, parent’s occupation and educational status was collected from the head of each house hold. Entries of the data obtain after asking questions were done in the following proforma.

5. Observation

Table 5.1: showing general appearance of surveyed children.

General Appearance	Total Children	Boys	Girls
Good	224	111	113
	44.80%	49.55%	50.44%
Fair	105	33	72
	21%	31.42%	70.47%
Poor	65	24	41
	13%	36.92%	63.07%
Very poor	37	15	22
	7.40%	40.54%	59.45%

Table 5.2: showing Quality of hair of surveyed children.

Hair	Total children	boys	Girls
Normal	203	90	113
	40.60%	44.33%	55.56%
Loss And Luster	139	63	76
	27.80%	45.32%	54.67%
Discolored & Dry	158	56	102
	31.44%	35.44%	64.55%

Table 5.3: Showing Lip’s status of surveyed children

LIPS	Total children	Boys	Girls
Normal	225	120	135
	51%	53.33%	52.94%
Angular Stomatitis	245	127	118
	49%	51.83%	48.16%

Table 5.4: Showing Appearance of Teeth of surveyed children

Teeth	Total Children	Boys	Girls
Normal	304	123	181
	60.80%	40.46%	59.53%
Chalky of Teeth	47	22	25
	11.40%	58.87%	49.12%
Pitting of Teeth	57	29	28
	9.40%	46.80%	53.19%
Discolored	92	37	55
	18.40%	40.21%	59.78%

Table 5.5: Showing Skin of surveyed children

Skin	Total Children	Boys	Girls
Normal	355	185	170
	71%	52.11%	47.88%
Dry & Rough	145	60	85
	29%	41.37%	58.62%

Table 5.6: Showing Bone’s status of surveyed children

Bones	Total Children	Boys	Girls
Normal	498	285	215
	99.60%	57.22%	43.17%
Rickets	2		2
	0.40%	0%	.93%

6. Result and Discussion

Randomly in the present study 500 children were surveyed were from 11 Jhuggi Jhophdies of Indore city for the following characters:

6.1 General appearance of surveyed children

Number of children having good appearance was 224 out of 500. Among them 111 were boys and 113 were girls. Percentage of the children having good appearance was 44.80%. Among these percentage of boys and girls having good appearance were 49.54% and 50.44 % respectively.

Number of children having fair appearance was 105 out of 500. Among them 33 were boys and 72 were girls. Percentage of children having fair appearance was 21%. Among these Percentage of boys and girls having fair appearance was 31.42% and 70.47% respectively.

Number of children having poor appearance was 65 out of 500. Among them 24 were boys and 41 were girls. Percentage of children having poor appearance was 31%. Among these Percentage of boys and girls having poor appearance was 36.92% and 63.07% respectively.

Number of children having very poor appearance was 37 out of 500. Among them 15 were boys and 22 were girls. Percentage of children having very poor appearance was 7.40%. Among these Percentage of boys and girls having very poor appearance was 40.54% and 59.45% respectively.

From the present study it was found that number of children having poor appearance (7.40%) is very less as compared to % children having normal appearance.

6.2 Status of Hair Quality of Surveyed Children

Number of children having normal hair was 203 out of 500. Among them 90 were boys and 113 were girls. Percentage of children having normal hair was 40.60%. Among these Percentage of boys and girls having normal hair was 44.33% and 55.56% respectively.

Number of children having loss and luster hair was 139 out of 500. Among them 63 were boys and 76 were girls. Percentage of children having loss and luster hair was 27.80%. Among these Percentage of boys and girls having loss and luster hair was 45.32% and 54.67% respectively.

Number of children having discolored & dry hair was 158 out of 500. Among the 56 were boys and 102 were girls. Percentage of children having discolored & dry hair was 31.44%. Among these Percentage of boys and girls having loss and luster hair was 35.44% and 64.55% respectively.

From the present study result it was found that about 49% children having abnormal quality of hair this % indicate that they are taking protein deficient diet.

6.3 Lips' Status of Surveyed Children

Number of children having normal lips was 225 out of 500. Among them 120 were boys and 135 were girls. Percentage of children having normal lips was 51%. Among these Percentages of boys and girls having normal lips were 53.33% and 52.94% respectively.

Number of children having angular stomatitis lips was 245 out of 500. Among them 127 were boys and 118 girls. Percentage of children having angular stomatitis lips was 49%. Among these Percentage of boys and girls having angular stomatitis lips was 51.83% and 48.16% respectively.

From the present study result it was found that about 49% children having abnormal quality of lips that is angular stomatitis. This % indicates that they are taking vitamin - C deficient diet.

Vision of Eyes: All the respondents had healthy eyes with normal vision with no discharge.

6.4 Status of Teeth of Surveyed Children

Number of children having normal teeth was 304 out of 500. Among them 123 were boys and 181 were girls. Percentage of children having normal teeth was 60.80%. Among these Percentages of boys and girls having normal teeth were 40.46% and 59.53% respectively.

Number of children having chalky of teeth were 47 out of 500. Among them 22 were boys and 25 were girls. Percentage of children having chalky of teeth was 11.40%. Among these Percentage of boys and girls having chalky of teeth was 58.87% and 49.12% respectively.

Number of children having pitting of teeth was 57 out of 500. Among them 29 were boys and 28 were girls. Percentage of children having pitting of teeth was

9.40%. Among these Percentages of boys and girls having pitting of teeth were 46.80% and 53.29% respectively.

Number of children having discolored teeth was 92 out of 500. Among them 37 were boys and 55 were girls. Percentage of children having discolored teeth was 18.40%. Among these Percentage of boys and girls having discolored teeth was 40.21% and 59.78% respectively.

From the present study result it was found that about 18.40% children having abnormal quality of teeth .this % indicates that these children are taking a diet poor in calcium and they are not aware of keeping teeth clean.

6.5 Status of skin of surveyed children

Number of children having normal skin was 355 out of 500. Among them 185 were boys and 170 were girls. Percentage of children having normal skin was 71%. Among these Percentages of boys and girls having normal skin were 52.11% and 47.88% respectively.

Number of children having dry & rough skin was 145 out of 500. Among them 60 were boys and 85 were girls. Percentage of children having dry & rough skin was 29%. Among these Percentage of boys and girls having dry & rough skin was 41.37% and 58.62% respectively.

From the present study result it was found that about 29% children having abnormal quality of skin. This % indicates that they are not taking proper and balance diet.

6.6 Status of Bones of Surveyed Children

Total children having normal bones were 498 out of 500. Among them 285 were boys and 215 were girls. Percentage of total children having normal bones was 99.60%. Percentage of boys and girls having normal bones was 57.22% and 43.17% respectively.

Number of children having rickets bones was 2 out of 500. Among them 2 were boys. Percentage of children having rickets bones was 0.40%. Percentage of boys having rickets bones was 100% respectively.

From the present study result it was found that about 0.40% children having rickets .this % indicate that they are not taking proper and balance diet.

7. Conclusion

Madhya Pradesh carries India's highest malnutrition burden, with 60% of its children under 5 malnourished - approximately 6 million children whose futures are at risk. The study decided to attack the problem head on by focusing its efforts on 11 of the worst Jhuggi Jhopadies across Indore district. The present study strategy was to close the gap between the resources available and the families who need them by focusing on the basics of malnutrition awareness, identification, treatment, prevention and inserting simple but innovative technologies and practices. The results of this survey study were both worrying and encouraging. The survey reports high levels of malnutrition, but it also indicates that few children have reached an acceptable

healthy weight. As a result of all these interventions, there has been a substantial reduction in severe grades of under-nutrition in children and some improvement in the nutritional status of all the segments of population.

However there are still many problems to be tackled and there is a need to accelerate the pace of improvement in nutrition and health status of the population”.

References

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