Nutritional status and morbidity pattern of children aged 6-60 months beneficiaries of anganwadi at urban slums area of Raipur city in Central India

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Abstract

Introduction: Malnutrition is one of the major social and public health concerns in India. There is similar situation in Chhattisgarh with 37% children underweight. About 200 million people in India are living in urban slums without basic health facilities, poor environment conditions that make children susceptible to infectious disease. Objective: To assess the nutritional status and morbidity pattern in children aged 6-60 months attending Anganwadi at urban slums of Raipur city. Methods: Cross sectional study was conducted in urban slum of Raipur city from July-2017 to June-2018. A representative sample of 605 children was anthropometrically and clinically assessed for their nutritional status and morbidity pattern. Socio-economic variables were also collected to identify the determinants of nutritional status and morbidity pattern. Data was analyzed using SPSS-20 and WHO-Anthroplus. Informed consent and ethical issues were considered. Results: Out of the 605 children, 46.28% were in <2 years age group and 47.77% were female. Majority of them belongs to low socioeconomic (87.93%) status. As per WHO nutritional measurement criteria, 20.16% were underweight, 21.16% stunting and 13.05% wasting. Major morbidity conditions among study participants were respiratory infections (26.28%), diarrhea (15.54%), conjunctival pallor (19.83%), scabies (18.51%) and 10.91% dental caries. Mother’s education, diarrhoeal/respiratory infection, socio-economic status, mother’s occupation were significant determinants for underweight in study children. Conclusion: Children benefited from Anganwadi centers in urban slum of Raipur has less underweight (20.16%) as compare to state average (29.1%) in urban area and better immunization coverage (92.40%).

Key words: Malnutrition, Anganwadi, Urban Slum, Morbidity, Parental education

Introduction

Undernutrition is one of the most concerning health and development issues in India as in other developing countries [1]. As per NFHS-4 (2015-16) 35.8% of children are under weight, 21% wasted, and 38.4% stunted under five age group in India[2]. Strong evidence exists on synergism between undernutrition and child mortality due to common childhood illnesses [3]. The morbid conditions are more prevalent in the urban slum children who are exposed to various risk factors like overcrowding and poor nutrition [4].

Although, morbidity in the preschool children residing in the urban slum areas is more as compared to the children from a higher socioeconomic strata [5]. Government of India started a centrally sponsored, Integrated Child Development Services (ICDS) Scheme; to enhance the health, nutrition, and learning opportunities of children <6 years of age. Under the ICDS Scheme; freshly, cooked food supplements are provided to children aged 3-6 years while take-home-rations of food grains are provided to children aged 6 months until 3 years [6].

Chhattisgarh is one of the poorest states in the country with one third of its population belonging to the scheduled tribes [7]. As per NFHS-4 state has 37.7% underweight under 5-children [8]. Literature search on the internet and the library revealed limited data on the morbidity profile as a whole in the children under age
of six. Thus, the varied morbidities and under nutrition in the children in urban slum areas intensifies the great need to study the distribution of health morbidities and malnutrition in 6-60 months children.

That will be of use in assessing the overall impact of various ongoing nutritional supplement, immunization status and disease control programs.

**Objective:** To assess the nutritional status and morbidity pattern in children aged 6-60 months beneficiaries of Anganwadi at urban slums area of Raipur city.

**Material and Methods**

**Study setting:** Study was conducted in Devendranagar sector urban slum of Raipur city.

**Study design:** Community based cross-sectional study conducted between July-2017 to June-2018.

**Sampling framework:** Raipur city has total 449 Anganwadi Centers (AWC). The study area Devendranagar sector has 24 AWCs. Out of these 24 Anganwadi centers, 15 were selected randomly for the study.

**Sample size:** 1500 (0-6) Children are registered to Anganwadi centers in Devendra Nagar slum. Sample size for the study calculated using formula 4pq/d²

Where, p= prevalence of malnutrition in urban area 29.1%. q = 1-p and d relative error using 5% at 99.9% of confidence interval. Thus sample size for the study at 99.9% CI is 549. Non-responder rate was taken as 10% thus total sample size was 605.

**Inclusion criteria**

1. Child should be age group of 6-60 months and a resident of a particular selected area
2. Child should be enrolled in ICDS scheme
3. Children whose parents gave the informed consent

**Exclusion criteria**

1. Children aged more than 60 months,
2. IUGR babies, Small for date babies, children with organic diseases and with any physical disability

**Results**

**Socio-demographic profile and malnutrition in urban slum children:** In present study data was collected for 605 children between 6 to 60 months of age group. Out of that 316 (52.23%) were males and 289 (47.77%) were females. Table 1.1 shows that 12.23% of female children were underweight in comparison to 7.76% male. Wasting was in 6.28% female and 6.78% male and stunting was in 8.92% female and 12.40% male children.
Table 1.1: Gender and malnutrition

| Gender | Frequency | Percentage | Underweight | Wasting | Stunting |
|--------|-----------|------------|-------------|---------|---------|
| Male   | 316       | 52.23      | 7.76%       | 6.78%   | 12.40%  |
| Female | 289       | 47.77      | 12.23%      | 6.28%   | 8.92%   |

Table 1.2: Age wise distribution of malnutrition

| Age group | Frequency | Percentage | Underweight | Wasting | Stunting |
|-----------|-----------|------------|-------------|---------|---------|
| <1 year   | 95        | 15.70      | 16%         | 0%      | 11.58%  |
| 1-2 year  | 185       | 30.58      | 10.80%      | 14.05%  | 16.22%  |
| 2-3 year  | 98        | 16.20      | 31.60%      | 15.30%  | 23.47%  |
| 3-4 year  | 142       | 23.47      | 28.90%      | 25.35%  | 30.28%  |
| 4-5 year  | 70        | 11.57      | 21.40%      | 2.86%   | 30%     |
| 5-6 year  | 15        | 2.48       | 0%          | 0%      | 0%      |

Table 1.3: Socio-economic class and malnutrition

| Economic class          | Frequency | Percentage | Underweight | Wasting | Stunting |
|-------------------------|-----------|------------|-------------|---------|---------|
| Lower Middle Class-III  | 73        | 12.07      | 13.70%      | 24.66%  | 0%      |
| Upper Lower Class-IV    | 214       | 35.37      | 19.16%      | 9.813%  | 15.89%  |
| Lower Class-V           | 318       | 52.56      | 25.47%      | 12.58%  | 29.56%  |

Age wise distribution of study subjects shows that highest number of children 30.58% taken in the study were from age group of 1-2 years, followed by 23.47% from 3-4 years, 16.20% from 2-3 years and 15.70% from <1 years. Table 1.2 shows that prevalence of underweight was high in children 2-3 year and 3-4 year age group i.e. 31.60% and 28.90%. Prevalence of wasting was high in 3-4 year i.e. 25.35% followed by 15.30% in 2-3 year age group. Stunting was high in 3-4 year age group i.e. 30.28% and in 4-5 year i.e. 30%.

Socio-economic status of study subjects was calculated using Modified Kuppuswamy scale. Table 1.3 shows that 52.56% of families were in lower class-V of socio-economic status, 35.37% in upper lower class-IV and 12.07% in lower middle class-III. Lower class-V has the highest prevalence of children underweight (25.47%), wasted (12.58%) and stunted (29.56). Significant association (P value = 0.000) between socio-economic status and nutritional status (weight for age) were found using chi-square test.

Parental occupation, education and malnutrition in slum children.

Table 2.1: Occupation of father and Malnutrition

| Occupation      | Frequency | Percentage | Underweight | Wasting | Stunting | P value |
|-----------------|-----------|------------|-------------|---------|---------|---------|
| Daily wages     | 182       | 30.08      | 38.46%      | 21.98%  | 36.81%  | 0.000   |
| Job             | 244       | 40.33      | 7.79%       | 6.97%   | 11.48%  |         |
| Self Business   | 179       | 29.59      | 18.44%      | 12.29%  | 18.44%  |         |

Table 2.2: Occupation of mother and Malnutrition

| Occupation      | Frequency | Percentage | Underweight | Wasting | Stunting | P value |
|-----------------|-----------|------------|-------------|---------|---------|---------|
| Daily wages     | 60        | 9.92       | 50%         | 31.67%  | 36.67%  | 0.000   |
| Housewife       | 545       | 90.08      | 21.47%      | 11.01%  | 19.45%  |         |

Table 2.3: Educational status of mother and Malnutrition

| Education       | Frequency | Percentage | Underweight | Wasting | Stunting | P value |
|-----------------|-----------|------------|-------------|---------|---------|---------|
| Illiterate      | 97        | 16.03      | 49.48%      | 20.62%  | 45.36%  | 0.001   |
| Primary School  | 140       | 23.14      | 12.86%      | 12.14%  | 20.62%  |         |
| High School     | 30        | 4.96       | 3.33%       | 0%      | 36.67%  |         |
| Higher Secondary| 338       | 55.87      | 16.27%      | 12.43%  | 15.68%  |         |
Parental occupation of study children was also noted in present study. Table 2.1 shows that 40.33% fathers of study participants were doing jobs either in formal or in-formal sector. 29.59% were involved in small scale of self-business and 30.08% were doing daily wages work. Daily wages fathers have high prevalence rate of underweight (38.46%), wasting (21.98%) and stunting (36.81%) in their children. Whereas, Table 2.2 shows 90.08% mothers of study participants were housewives and 9.92% were doing daily wages work. Daily wage mothers have 50% their children underweight, 31.67% wasted and 36.67% stunted. Significant association (P value= 0.000) between parental occupation and nutritional status (weight for age) using chi-square test.

Parental education of study children was reported in present study. Table 2.3 shows that 55.87% of mothers were educated till higher secondary, 4.97% high school pass, 23.03% educated till primary school and 16.03% were illiterate. Mothers those were illiterate having the high prevalence rate of underweight (49.48%), wasting (20.62%) and stunting (45.36%). Significant association (P value= 0.001) between mother’s education and nutritional status (weight for age) using chi-square test.

Anthropometric assessments of slum children: Prevalence of malnutrition (stunting, wasting & underweight) was assessed based on WHO child growth standards 2006 generated for boys and girls aged 0 to 60 months separately. Among 605 study children, Table 3 shows that 8.26% children were in category of severely underweight, 11.90% in moderate underweight and 79.84% in normal category. Height for Age (H/A) which measure the level of stunting, in Table 6 shows that 6.61% children were in category of severely stunting and 14.55% in moderate stunting. Table 6 also shows the status of wasting in study children, 2.64% children were in severely wasting and 10.41% in moderate category.

| Particular | Weight for Age (Underweight) | Weight for Height (Wasting) | Height for Age (Stunting) |
|------------|------------------------------|-----------------------------|--------------------------|
| Severe     | 8.26%                        | 6.61%                       | 2.64%                    |
| Moderate   | 11.90%                       | 14.55%                      | 10.41%                   |
| Normal     | 79.84%                       | 78.85%                      | 86.94%                   |

In present study immunization status among study children was recorded by asking mother and confirmed by the records (MCP cards/Immunization cards). Results shows that 92.40% of children were continuing their immunization schedule, 1.32% dropouts and 6.28% were immunized haphazardly.

Distribution of Major morbidity conditions in slum children: Table 4 shows the major morbidity (illness) among study children, 26.28% had acute respiratory infections in last one year, 15.54% had diarrheal disease, 19.83% had conjunctival pallor (anemia), 18.51% had scabies, 10.91% had dental caries, 4.96% vitamin B complex deficiency and 1.25% had Vitamin A deficiency.

| Disease                  | Frequency | Percentage |
|--------------------------|-----------|------------|
| Acute Respiratory Infection | 159       | 26.28      |
| Diarrhoeal disease       | 94        | 15.54      |
| Skin infection (Scabies) | 112       | 18.51      |
| Anemia (Conjunctival Pallor) | 120      | 19.83      |
| Dental Caries            | 66        | 10.91      |
| Vitamin B Complex deficiency | 30       | 4.96       |
| Vitamin A deficiency (Bitot’s spot) | 7        | 1.25       |

Significant determinants of underweight in study participants: Binary logistic regression statistical tool was used to understand the determinants of underweight in study subjects. Table 5 shows that mother’s education (p value 0.03), mother’s occupation (p value 0.04), Socio-economic status of family (p value 0.03), and occurrence of ARI (p value 0.002) and diarrhoea (p value 0.00), were the important significant determinants for underweight in study subjects.
Table-5: Determinants of underweight in study participants

| Particular                     | Odds Ratio | Std. Err. | z      | P>|z|   | 95% CI    |
|-------------------------------|------------|-----------|--------|------|-----------|
| SEX                           |            |           |        |      |           |
| Female                        | 0.59       | 0.20      | -1.53  | 0.125| 0.30      | 1.16      |
| MOTHER_EDUCATION              |            |           |        |      |           |
| Primary School                | 1.38       | 1.00      | 0.44   | 0.661| 0.33      | 5.72      |
| High School                   | 1.00       | 1.59      | 0      | 0.999| 0.04      | 22.34     |
| Higher Secondary              | 0.21       | 0.21      | -1.10  | 0.035| 0.02      | 0.70      |
| MOTHER_OCCUPATION             |            |           |        |      |           |
| Housewife                     | 3.78       | 2.51      | 2      | 0.046| 1.02      | 13.92     |
| SOCIO-ECONOMIC STATUS         |            |           |        |      |           |
| Upper-lower                   | 0.57       | 0.29      | -1.11  | 0.266| 0.21      | 1.54      |
| Upper-Middle                  | 0.26       | 0.17      | -2.06  | 0.039| 0.07      | 0.93      |
| ARI                           |            |           |        |      |           |
| Yes                           | 0.28       | 0.12      | -3.03  | 0.002| 0.12      | 0.64      |
| DIARRHOEA                     |            |           |        |      |           |
| Yes                           | 0.02       | 0.01      | -6.58  | 0    | 0.00      | 0.05      

Discussion

Our study concludes that female children were more underweight in comparison to male whereas stunting and wasting were more in male child. Female (12.23%) children were more underweight in comparison to (7.76%) male where as stunting is more in (12.40%) male children than female (8.92%). Pandey et al. assessed children visiting ICDS scheme found that stunting, wasting and underweight was more in females than male [9]. Any form of malnutrition is more in female children as compare to male children. Swami et al. and Banarjee B et al. reported statistically significant association of gender and underweight status in children [10,11].

In present study shows that 28.14% mothers of children were educated till primary school and out of that 21% were had severe underweight children. It was found (Table 5) that mothers of children who are educated till primary class (odds ratio=1.38) had more chance of having malnourished children that mothers who are educated till higher secondary (odds ratio=0.21). Findings of the present study are supported by Mittal et al. and Gupta et al. found that in urban slum that educated mothers were having better nourished children as compared to illiterate ones[12][13]. Abuya et al. concluded that overall, mother’s education persists as a strong predictor of child’s nutritional status in urban slum settings[14].K.Saito et al. concluded that the gender of the child and maternal literacy were stronger risk factors for malnutrition than health-care availability and health-care-seeking attitudes[15]. Mothers on daily wages have 50% children underweight and daily wages fathers have 38.46% children underweight. Strong statistical significant association was noted between occupation of mothers and nutritional status of children (p=0.000). Our findings are supported by a study of Mittal et al. that mother’s engagement in some occupation adversely affected child’s growth [12]. In another study Shailie et al. showed that maximum under nutrition (88.46%) was found in children whose mothers were unskilled laborers by occupation, as compare to children of house wives[16].

In present study it was noted that children from the lower class- V has the highest prevalence of underweight (25.47%), wasting (12.58%) and stunting (29.56%). Significant association (P value= 0.000) between socio-economic status and nutritional status (weight for age) using chi-square test. Kanjila et al. concluded that a disproportionate burden of stunting was observed among the children from poor SES, more so in urban areas [17]. Arora et al. showed that nutritional status of children from lower socio economic class was poor as compared to their counterparts来自于 upper socio economic class [18]. Poor socio economic status is manifested as hunger, which is directly associated with under nutrition[19].

In present study as per WHO nutritional measurement criteria [20], 20.16% children were underweight, 21.16% stunted, and 13.5% wasted. There are many studies reporting underweight in children living in
slums from a range of 34.4% 55.3% [21-24]. Since there are enough evidence available that across India in many states malnutrition has higher burden even in urban slum area. Present study shows that 92.40% of children were continuing their immunization schedule. Similar studies suggesting that immunization status was associated with various parameters but significant association was found with underweight[25][26].

In present study major morbidity conditions among study participants were respiratory infections (26.28%) followed by diarrhoea (15.54%). Regression analysis also shows that child who had ARI (OR=0.28) are more likely to malnourished as to those who had diarrhoea (OR=0.02). Mondal et al. and Hanmantaet al. reported that the most common health morbidity observed was acute respiratory infection (ARI) followed by acute diarrheal disease [27][28]. In contrast Vyas et al. found that, Diarrhoea (47.9%) followed by ARI (22.1%) were the commonest morbidities found in the study population [29].

In present study (19.83%) children were having conjunctival pallor (measure for anemia), (18.51%) scabies and (10.91%) dental caries.In a similar study Narkhedeet al. shows that more than three-quarter of children from urban slum were suffering from anemia [30]. Psoter et al. found in a review of the literature on malnutrition and dental caries suggest that caries of the primary dentition is associated with early childhood malnutrition [31]. Bhayade S et al. also concluded that significant association was found among malnutrition and dental caries [32]. Dasgupta et al. noted that skin diseases in children are significantly associated with nutritional status[13]. Anganwadi should conduct useful general health promotion activities which must include education of parents, general health issues and risk factors for malnutrition in preschool children.

Conclusion

Children visiting Anganwadi centers in urban slum of Raipur has less underweight children (20.16%) as compare to state average of (29.1%) underweight (NFHS-4, 2015) in urban area and better immunization coverage. This demonstrates the better utilization of Anganwadi centers in Raipur urban slum. Hereby it is recommended that more comprehensive approach is needed in providing supplementary diet at one hand and breaking the vicious cycle of malnutrition and morbidity on the other.

What this study adds to existing knowledge/practice:
This study strengthens the conclusion that malnutrition in children is public health issue in both rural and urban areas which leads to many morbidity conditions in children. Supplementary nutritional programmes are useful but much more comprehensive strategy is needed to tackle malnutrition.

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References

1. NRHM. Operational Guidelines on Facility Based Management of Children with Severe Acute Malnutrition. Government of India 2010; 1–66.
2. Indian Institute for Population Sciences. National Family Health Survey (NFHS-4) 2015-16 India. Int Inst Popul Sci ICF 2017; 1–192.
3. Amy L. Rice, Lisa Sacco, Adnan Hyder REB. Malnutrition as an underlying cause of childhood deaths associated with infectious diseases in developing countries.Bull World Health Organ 2000;78:1207-1221.
4. Lakshmi AJ, Begum K, Saraswathi G, et al. Influence of nutrition and environment on morbidity profile of Indian preschool children. Malays J Nutr 2005; 11: 121–132.
5. Mishra C. Strategic issues in child health. Indian J Public Health 2010; 54: 75.
6. ICDS Mission, The Broad Framework for Implementation published by Ministry of Women and Child Development, Government of India 2012.
7. Registrar General & Census Commissioner India. Census of India 2011. Report on Post Enumeration Survey. 2014.
8. International Institute for Population Sciences. State Fact Sheet Chhattisgarh, http://rchiips.org/NFHS/pdf/ NFHS4/CT_FactSheet.pdf (2015).
9. Vandana Pandey, Shally Awasthi, VK Srivastava, AK Nigam PS, Indian J . Prev . Soc . Med . Vol . 42 No 2, 2011 Study of nutritional status of children attending icds services in Lucknow. Indian J Prev Soc Med; 42.
10. Swami HM, Thakur JS, Bhatia SPS, et al. National immunization day to assess nutritional status of underfives in Chandigarh. Indian J Pediatr 2000; 67: 15–17.
11. Banerjee B, Bandyopadhyay L. Gender Differences in Nutritional Status. Indian Pediatr 2005; 42: 400.
12. Mittal A, Singh J, Ahluwalia S. Effect of maternal factors on nutritional status of 1-5-year-old children in urban slum population. Indian J Community Med 2009; 32: 264.
13. Dasgupta A, Sahoo S, Taraphadar P, et al. Composite index of anthropometric failure and its important correlates: a study among under-5 children in a slum of Kolkata, West Bengal, India. Int J Med Sci Public Heal 2015; 4: 414.

14. Abuya BA, Ciera J, Kimani-murage E. Effect of mother’s education on child’s nutritional status in the slums of Nairobi. BMCPediatr.http://www.biomed-central.com/1471-2431/12/80%0ARESEARCH (2012).

15. Saito K, Korzenik JR, Jekel JF, et al. A case-control study of maternal knowledge of malnutrition and health-care-seeking attitudes in rural South India. Yale J Biol Med 1997; 70: 149–160.

16. Vyas S, Kandpal S, Semwal J, et al. A study on undernutrition and its socioeconomic correlates among toddlers in a rural area of Uttarakhand, India. Int J Community Med Public Heal 2016; 3: 1043–1048.

17. Kanjilal B, Mazumdar PG, Mukherjee M, et al. Nutritional status of children in India: Household socioeconomic condition as the contextual determinant. Int J Equity Health 2010; 9: 1–13.

18. Arora D, Datta S, Sau SK. An Assessment of Socio-Economic Factors on Nutritional Status in Primary School - A Cross Sectional Study in Purulia of West Bengal. Int J Occup Saf Heal 2016; 4: 15–18.

19. Barbara L. Maternal-Fetal Nutrition. Clin Obstet Gynecol 1994; 37: 93–109.

20. Members of the WHO Multicentre Growth Reference Study Group. WHO Child Growth Standards. 2007. Epub ahead of print 2007. DOI: 10.1016/j.jhydrol.2009.03.001.

21. Megha S. Mamulwar, Hetal K. Rathod, Sumit Jethani, Anjali Dhone TB, Balkrishna Lanjewar SJ, Bhawalkar JS. Nutritional status of children in an urban slum. Int J Pharma Bio Sci 2013; 4: 247–252.

22. Panigrahi A, Das SC. Undernutrition and its correlates among children of 3-9 years of age residing in slum areas of Bhubaneswar, India. Sci World J; 2014. Epub ahead of print 2014. DOI: 10.1155/2014/719673.

23. Sahoo DP, Dehmubed A, Jajulwar MB. An epidemiological study of acute malnutrition in children of age 6 months to 5 years in an urban slum of Mumbai, Maharashtra. J Datta Meghe Inst Med Sci Univ 2017; 12: 181–186.

24. Geetanjali Sethy S, Jena D, Jena P, et al. Prevalence of malnutrition among under five children of urban slums of Berhampur, Odisha, India: a community a community based cross-sectional study. Int J Contemp Pediatr 2017; 4: 2180.

25. Bhavsar S, Mahajan H, Kulkarni R. Assessment of the Nutritional Status and Immunization Coverage of Anganwadi Children in Rafiq Nagar, Mumbai. Public Heal Res 2013; 2: 229–234.

26. Manjunath S Kamble, Sangita C. Shelke BP. A cross-sectional study on correlates of high blood pressure among school-going children in an Urban Area. Indian J Community Med 2018; 43: 82–85.

27. Mondal DK, Baidya DS, Dasgupta DU. A Study of Morbidity And Nutritional Profile Among Under Five Children in An Urban Slum, Kolkata. IOSR J Dent Med Sci 2016; 15: 01–03.

28. Wadgave H V. Burden of health morbidities in under-fives in urban slum areas. J Dr NTR Univ Heal Sci 2013;2(2) 2013; 2: 96–101.

29. Shaili vyas, SD Kandpal, Jayanti Semwal D. A Study on Morbidity Profile and Associated Risk Factors in a Rural Area of Dehradun. J Clin Diagnostic Res 2014; 8: 8–11.

30. Vinod N, Umesh S, D BS, et al. Morbidity profile in under five children in urban slum area of Nagpur. Natl J Community Med 2012; 3: 442–446.

31. W.J. Psoter, B.C. Reid RVK. NIH Public Access. Caries Res 2006; 39: 441–447.

32. Bhayade S, Mittal R, Chandak S, et al. Assessment of social, demographic determinants and oral hygiene practices in relation to dental carries among the children attending Anganwadis of Hingna, Nagpur. J Indian Soc Pedod Prev Dent 2016; 34: 124.

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