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Nutritional Status And Morbidity Profile Of Under Five Children : A Cross-Sectional Study In A Slum Community Of West Bengal.

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Abstract:
Background: *Poor Nutrition during first 1000 days of a child's life leads to stunted growth which is irreversible. It is also seen to be associated with impaired cognitive ability and reduced school performances[1]. Malnutrition is vicious as it leads to recurring illness, faltering growth and diminished learning ability[2].*
Objective: *To describe the socio-demographic profile of under five children of Bagbazar slum community and also to assess the nutritional status and morbidity profile of them.*
Methodology*: An observational descriptive study with cross-sectional design was done at Bagbazar slum community in Kolkata among 76 mothers/care givers of under five children by house to house visit with a pre-designed, pre-tested semi-structured proforma. Children were examined and their anthropometric measurements were also done. Data were analysed with SPSS version 16 Software.*
Results*: Majority (98.7%) were Hindu & belonged to upper lower (50%) socio-economic status. 97.4% children were hospital born, 96.1% had birth weight > 2.50 Kg, 18.2% had stunting, 15.8% children were underweight and it was significantly more in low birth weight children (p value 0.02). 5.2% were overweight and 2.6% were moderately (< -2SD) wasted. Major morbidities were ARI (40.8%), followed by diarrhea (34.2%) and vitamin deficiencies (34.2%).*
Conclusion*: Reinforcing nutritional education of mothers/care givers of under five children are to be strengthened. Mothers can be self employed by self help group formation for economic upliftment.*
Key words*: Stunting, underweight, ARI, Diarrhea.*

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I. Introduction

Adequate nutrition during infancy and early childhood is the key for the development of each child to reach his/her full human potential[3]. Improper nutrition during this period may cause severe hindrance in their development[4].

It is now widely accepted fact that malnutrition is one of the gravest threats to the World's public health[5]. Malnutrition is vicious as it directly impairs many major parameters of child health like growth, immunity etc. Under-nutrition is a major public health threat in developing countries. The infant and young children are the most vulnerable victims of it. Their physical, cognitive growth and resistance to infection are retarded severely.

These children are more likely to die from common childhood ailments like diarrhocal diseases and respiratory infections. Due to frequent illness, even the nutritional status of the survived children is severely retarded locking them into a vicious cycle of recurring sickness, faltering growth and diminished learning ability[2].

Poor nutrition during first 1000 days of a child's life leads to stunted growth which is irreversible[1]. According to National Family Health Survey[4] (NFHS-4), the prevalence of stunting, wasting, severe wasting, under weight among under five children in India was 38.4%, 21%, 7.5%, 35.7% respectively[6].

The nutritional status of poor urban children is worst among the urban groups and even poorer than the rural average child[7]. As per the reanalysis of NFHS-III data, about 47.1% of urban poor children under three years are under weight which is much higher than the urban average of 32.8% and rural average of 45%[8].

Under this background, this study was carried out among the under five children of Bagbazar slum area, Kolkata, which is the urban field practice area under department of community Medicine, R.G. Kar Medical College, Kolkata with the following objectives :-

Objectives :

1. To describe the socio-demographic profile of under five children of Bagbazar slum community.
2. To assess the nutrition status of those children.
3. To find out the morbidity profile of them.

II. Methodology

It was a community based descriptive observational study with cross sectional design. After getting approval of institutional ethics committee the study was conducted in 2019 at Bagbazar slum area (KMC, Ward 7), Kolkata.

All 455 families were visited from house to house. All under five children (total enumeration) of Bagbazar slum were included in the study. Total children were 76. All mothers/care givers of those children were interviewed with a pre-designed, pre-tested, semi-structured proforma after getting their consent. All under five children were also examined after completion of interview of their mothers/care givers. Those who were not found on first or second visit, were again visited according to their convenience.

Data were entered into excel sheet followed by analysis in SPSS version 16 software. Results were expressed in percentage and relative frequencies and Fisher's test.

III. Results :

Interview was taken from 76 mothers/care givers of under five children.
Socio-demographic profile, nutritional status & morbidity profile were presented below.

Table 1 : Distribution of under five children according to their socio-demographic profile.

(n=76)

Socio-Demographic Profile		No.	Percentage
Age in months	0 – 6	10	13.2
	6 – 24	26	34.2
	24 – 60	40	52.6
Sex	Male	40	52.6
	Female	36	47.4
Religion	Hindu	75	98.7
	Muslim	1	1.3
Socio-Economic status (As per modified kuppuswamy scale, inflation rate adjusted for the year 2018)	Upper Lower	38	50.0
	Lower Middle	34	44.7
	Upper Middle	4	5.3
Place of birth	Hospital	74	97.4
	Home	2	2.6
Birth Weight	> 2.5 Kg.	73	96.1
	< 2.5 Kg.	2	2.6
	Not Known	1	1.3

Table 1 : Shows 52.6% of study subjects were male and of 24-60 months age group. Majority (98.7%) were Hindu and belonged to upper lower (50%) socio-economic status. Most of children (97.4%) were hospital born and 96.1% had birth weight > 2.5 Kgs.

Table 2 : Distribution of under five children according to their nutritional status

Nutritional status	No		Percentage
Weight for age	Not under weight	64	84.2
n=76	Moderately underweight	10	13.2
	Severely underweight	2	2.6
Weight for height / length	Overweight (>+2SD)	4	5.2
n=76	Moderately wasted (<-2SD)	2	2.6
	Not overweight, obese, moderately or severely wasted (+2SD to -2SD)	70	92.2
Height / length for age	Stunted	12	18.2
(6m to 60m)n_1=66	Not Stunted	54	81.8

Table 2 – shows that 15.8% children suffered from underweight, 5.2% from over weight, 18.2% from stunting and 2.6% form wasting.
Under weight was significantly (p value 0.02) more in low birth weight children.

Table 3 : Distribution of under five children according to their present morbidities in last one month.
(n=76) Multiple response

Morbidities	No	Percentage
ARI	31	40.8
Diarrhea	26	34.2
Signs of Vitamin deficiency	26	34.2
Pallor	25	32.9
Skin lesion	21	27.6
Worm infestation	19	25.0
Accidental injury	10	13.2
Ear ache	10	13.2
Dental caries	8	10.5
*Others	12	15.7

Majority (40.8%) suffered from ARI, followed by diarrhea (34.2%), signs of vitamin deficiency (34.2%), Pallor (32.9%), skin lesions (27.6%), worm infestation (25.0%), earache (13.2%), dental caries (10.5%) and others (15.7%) in last one month.
* Insect bite, conjunctivitis etc.

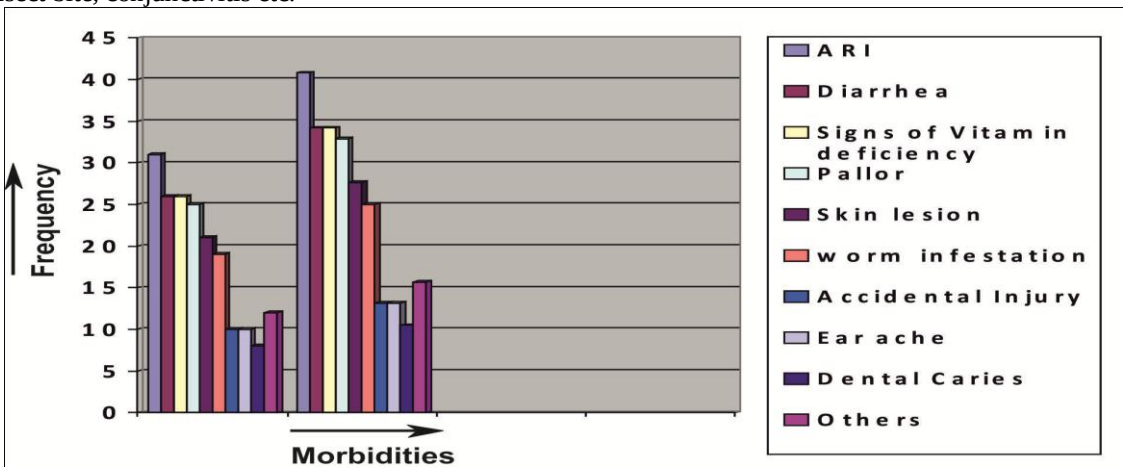

Fig. 1: Bar Diagram showing distribution of children according to their morbidities

Table 4 : Association between birth weight and nutritional status (under weight and not under weight) of under five children.

***(n=75)**

Birth Weight	Nutritional Status			
	Under weight number (%)	Not under weight number (%)	Total	X2 Value 10.788 df 1, Fisher's exact test p value 0.024
> 2.5 Kg	10 (13.7)	63 (86.3)	73 (100.0)	
< 2.5 Kg	2 (100.0)	0 (0.0)	2 (100.0)	
Total	12 (16.0)	63 (84.0)	75 (100.0)	

* Birth weight of a child not known
Under weight children among those whose birth weight was < 2.5 Kgs was 100% and those whose birth weight was > 2.5 Kgs was 13.7%. This difference was statistically significant.

IV. Discussion

Study population consisted of 13.2%, 34.2% and 52.6% in < 6, 6 -< 24 and 24 – 60 months of age respectively. It was comparable to a study of malnutrition in under five children by Sethy et al in slums of Odisha[9]. Majority of them was male (52.6%). Most of the children (98.7%) were Hindus. Half (50%) of under five children were from upper lower socio-economic class of Modified Kuppuswamy scale. This finding was similar to a study done by Mondal et al in Rajabazar slum area of Kolkata[10]. 97.4% children were born in hospital which were much higher than the NFHS – 4 date of institutional birth rate in urban area of West Bengal (83.6%)[6].

In present study 18.2% had stunting which was less than NFHS-4 data[10] (India-31%, W.B. – 28.5%), a study by Sarkar et al in Chetla slum, Kolkata (27.5%)[11]. This finding was similar to the finding of a study in rural W.B. by Roy et al (16.7%)[12], a study in Gujarat by Gandhi et al (15.6%)[13].

In present study 15.8% were under weight. The percentage of under weight was lower than NFHS-4 data (India-29.1%), W.B.-26.2%)[6], a study in rural West Bengal by Roy et al (29.2%)[12], but higher than a study in Gujarat by Gandhi et al (11.5%)[13]. Under weight was significantly more in low birth weight children (p value

.02). In present study 2.6% were moderately wasted which was less than NFHS – 4 data (India – 27.5%, W.B. – 22.7%)[6] and 5.2% were over weight which was higher than the joint child malnutrition estimate by UNICEF, WHO and World Bank (2.1%)[14].

Majority (40.8%) of study population suffered from ARI, followed by diarrhea (34.2%), signs of vitamin deficiency (34.2%), pallor (32.9%), worm infestation (25.0%), ear ache (13.2%), dental caries (10.5%) and others (15.7%) in last one month.

ARI (44%) and diarrhea (34.7%) were the main morbidities found by Sethy et al in slums of Berharampur, Odisha[9]. A study by Gupta et al in Jammu reported that ARI (47.2%) & diarrhea (30.1%) were main morbidities among children[15]. Diarrhea and ARI were significantly associated with under nutrition found by Sethy et al in slums of Berhampur, Odisha[9].

V. Conclusion

Most of children (98.7%) were Hindu and belonged to Upper lower (50%) socio-economic status. It was observed that 97.4% children were hospital born, 96.1% had birth weight > 2.5 Kgs. Stunting was found among 18.2% children. Under weight was 15.8% & it was significantly associated with low birth weight (p value 0.024). In this study over weight children were 5.2%. Major morbidities were ARI (40.8%), followed by diarrhea (34.2%), vitamin deficiencies (34.2%) and pallor (32.9%).

VI. Recommendation

Mothers can be self employed by self help group formation for economic improvement of the family. Providing regular quality antenatal care will reduce low birth weight baby. Reinforcing nutritional education including IYCF practices are to be strengthened.

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