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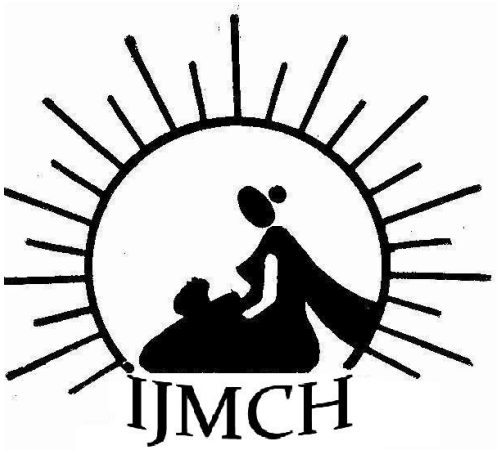

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About 50 per cent of all childhood deaths are attributed to malnutrition. One in every three malnourished children in the world lives in India.

Faulty feeding habits and malnutrition in under five children - missed opportunity of education in immunization clinics.

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Abstract

Background: About 50 per cent of all childhood deaths are attributed to malnutrition. One in every three malnourished children in the world lives in India. A study was done in the urban slum to find out the prevalence of malnutrition and its risk factors in children below five years of age.

Research question: What is the prevalence of malnutrition and its risk factors amongst under five children of urban slum?

Study design: Cross sectional study was carried out in Urban Health Training Centre of Medical College, from January 2011 to December 2011, among under five children attending Under Five Clinic which is located in the midst of the urban slum area, Pratiksha Nagar, Mumbai.

Methodology: All mothers or primary care takers of the under five children who were residing in the Pratiksha Nagar and were willing to participate in the study were interviewed by using the semi - structured questionnaire and weight of the child was recorded.

Results: Out of the 286 under five children surveyed, 30.8% and 21% were moderately and severely malnourished respectively. Age and faulty eating habits was significantly associated with malnutrition.

Conclusions: Prevalence of malnutrition is high among under five children of the slum areas. Age is associated with malnutrition. Faulty dietary habits increase risk of malnutrition.

Key words: ***Under five children, urban slum, malnutrition, faulty dietary habit***

Introduction:

In 2010, about 20 million children worldwide were estimated to suffer from severe acute malnutrition, leaving them more vulnerable to serious illness and early death[1]. About 50 per cent of all childhood deaths are attributed to malnutrition. One in every three malnourished children in the world lives in India[2]. Malnutrition among urban poor children is worse than in rural areas[3]. Children living in the urban slums are exposed to risks of infectious diseases, malnutrition and possibly impaired cognitive development[4]. India is witnessing an explosive growth in the population living in urban areas. Along with rapidly urbanization, there has been a more rapid growth in the population residing in slums. Thus, a study was done in the urban slum to find out the prevalence of malnutrition and its risk factors in children below five years of age

Objective:

1) To assess the prevalence of malnutrition amongst under five children in urban slum.
2) To study the factors associated with malnutrition in the urban children.

Materials and Methods:

Cross sectional study was carried out in Urban Health Training Centre of Medical College from January 2011 to December 2011 among under five children attending Under Five Clinic which is located in the midst of the urban slum area, Pratiksha Nagar. The respondents were the mothers or primary care takers of the under five children. All the respondents who were residing in the Pratiksha Nagar and willing to participate in the study were included in the study. Verbal consent of the respondents was taken for participation in the study. A total of 286 subjects were studied.

A semi - structured questionnaire was used to assess study subjects' socio-demographic and economic profile. Information regarding birth weight, immunization status, worm infestation and illness in the past two weeks and on the day of examination was obtained. Breast feeding practices and child's eating habit were assessed. Weight of the child was recorded and WHO new standard growth charts were used to grade the malnutrition. The same weighing machine was used throughout the study. Data entry and statistical analysis were performed using the SPSS windows version 14.0 software. Appropriate statistical tests were adopted to analyse the observations.

Results:

Majority of the respondents were Hindus (89.5%) and 58% belonged to nuclear family. In 30.4% and 21.7% of the respondents, the family size was of four and five members respectively. According to Modified B. G. Prasad classification, 36% belonged to class IV and 33.6% of the respondents belonged to class III. Around 85.6% of the parents of under five children were literate and 46.5% were educated till secondary schooling. Out of 286 under five children, around 54.5% were males and 45.5% were females. 23.1% were below one year of age, 45.1% were between one to three years of age and 31.8% were between three and five years of age. Mean age was 28 months. Age of the child was significantly associated with malnutrition (Table I). Home delivery was seen in 10.8% of the under five children. Out of 286 mothers, 48 (16.8%) did not know the birth weight of the child. Excluding those who don't know the birth weight, around 24.8% of the under five children were low birth weight, where as 23.9% had birth weight of at least 2.5 Kg and in 51.3% of the under five children, the birth weight was more than 2.5 Kg. Mean birth weight was 2.7 Kg. Prevalence of malnutrition was 51.8%. Nearly 30.8% and 21% were moderately and severely malnourished

respectively. Sex-wise distribution is shown in Table – II. Most of the children were immunized (82.5%). Period prevalence for illness (illness in the last two weeks) was 50.3%. Point prevalence for illness (ill on the day of interview) was 68.9%. Prevalence of worm infestation (based on history) in the last 6 months was 14.7%. Exclusive breast feeding practice was seen in only 25.9% of the children. Most of them were breast fed only for 3 months (45.5%). Continuation of breastfeeding was seen beyond 2 years. Maximum age till breastfeeding was done was 4 yrs 2 months. Only 44.1% (126 children) were enrolled in anganwadi. Habit of eating outside food and biscuits was seen in 74.1% and 52% of the under five children. This faulty eating habit was significantly associated with malnutrition. (Table III). Regarding healthy eating habits, only 35% and 9.4% ate vegetables and fruits regularly. Habit of not eating fruits was also significantly associated with malnutrition. (Table III).

Table I: Association of age of the child with malnutrition

Age of the child	Malnourished child	Normal child	Total
Less than one year	24 (16.2%)	42 (30.4%)	66 (23.1%)
1 to 3 years	66 (44.6%)	63 (45.7%)	129 (45.1%)
3 to 5 years	58 (39.2%)	33 (23.9%)	91 (31.8%)
Total	148	138	286

Chi square value – 11.511 P value – 0.003

Table II: Association of sex of the child with malnutrition

Sex of the child	Malnourished child	Normal child	Total
Male	78 (52.7%)	78 (56.5%)	156 (54.5%)
Female	70 (47.3%)	60 (43.5%)	130 (45.5%)
Total	148	138	286

Chi square value – 0.420 P value – 0.517

Table III: Association of eating habits with malnutrition

Eating habits		Malnourished children		Normal child		Chi-square value	P value
		Freq	%	Freq	%		
Eating outside food	Yes	119	56.1	93	43.9	6.306	0.012*
	No	29	39.2	45	60.8		
Eating vegetables	Yes	50	50	50	50	0.188	0.664
	No	98	52.3	88	47.3		
Eating fruits	Yes	9	33.3	18	66.7	4.049	0.044*
	No	139	53.7	120	46.3		
Drinking tea	Yes	66	60.6	43	39.4	5.465	0.019*
	No	82	46.3	95	53.7		
Eating biscuits	Yes	86	57.7	63	42.3	4.440	0.035*
	No	62	45.3	75	54.7		

** Difference was found to be significant*

Discussion

In our study, the prevalence of malnutrition was 51.8%. In a study conducted in Vadodara, the prevalence of malnutrition was found to be 63% in the under five children[5]. Among the under five children attending the Paediatric OPD of Medical College, Kolkata, 51% were seen malnourished which is similar to our finding[6].

Malnutrition was seen more prevalent in the males but this was not significantly associated. Similar results were reported by Shrivastav et al[7].

The type of family, nuclear or joint, was not significantly affected with child nutrition. Similar findings were seen by Paramita Sengupta et al[8].

In our study, age was significantly associated with malnutrition. Similar finding was observed by Kumar D et al[9]. Association of age and undernutrition was also seen in study conducted by Goel et al[10]. Enrolment of child in anganwadi is only 44.1% of the under five children. Practice of exclusive breast feeding till six months was seen in only 25.9% of the children. It was observed that mothers or primary care taker were not aware of the public health facilities available in their area. Thus utilization of public health services is poor. Anganwadi workers and other health care workers should promote the services available and also educate the mothers regarding exclusive breastfeeding and its importance.

Our study shows that the habit of giving tea and biscuits has significant association with malnutrition. Mothers preferred giving tea and / or biscuit as it is more convenient. In a study conducted by Kumar D et al on under five children, the tea intake ranged from one to six times a day, with majority of the children drinking tea 1-3 times a day.

It was noticed that in some families, the children were given money every day to buy outside junk food. Many children were habituated to eating outside food. The habit of eating outside food is also significantly associated with malnutrition.

Intake of fruits and vegetables was only 9.4% and 35% respectively. Data from an urban slum ICDS project in Delhi indicated that the intake of cereals, pulses, roots, green leafy vegetables (GLVs), other vegetables, fruits, sugar and fats was grossly inadequate, meeting only 43%, 33%, 48%, 13%, 39% 28%, 56% and 40%, respectively of the recommendations of balanced diet of children[11]. In our study, poor intake of fruits is significantly associated with malnutrition. It was observed that mothers were not aware of the importance of giving fruits and vegetables.

Interestingly, 82.5% of the under five children were properly immunized i.e. they have had minimum 4 contacts with immunisation service providers. The public health services regularly conduct vaccination camps at the centre or in the community. These can be the contact points to educate mothers. However these opportunities to impart and reinforce messages of healthy infant and young child feeding are missed. ICDS can work in collaboration with Medical Colleges and NGOs to generate awareness in the urban slums. There should be no missed opportunity of accessing knowledge about correct infant and young child feeding by the mother of an infant. So it is recommended that all the facilities or service providers of immunisation must make conscious efforts towards the millennium development goal of reduction of malnutrition in under five children.

Around 16.8% of the mothers did not know the birth weight of their child. Home delivery was seen in 10.8% of the under five children. It was observed that the mothers were not aware about consequences of the low birth weight and disadvantages of home delivery. These mothers had done antenatal check-up in the hospital. Thus, during the antenatal check-up, mothers should also be made aware of low birth weight, its complication and importance of institutional delivery.

Study conducted by Bhatia Puri et al.[12] observed worm infestation of 35.67% which is higher than our finding of 14.7%. Prevalence of worm infestation was low as many children had received deworming medication. The health care workers regularly give deworming medication in the urban slums. This contact point can also be utilized to create nutritional awareness.

Conclusion:

The prevalence of malnutrition is high among under five children of the slum areas. Age is associated with malnutrition. Faulty dietary habits such as not eating fruits, eating biscuits or other outside food and drinking tea increases risk of malnutrition. Practice of exclusive breast feeding till six months is poor. As immunisation services are the most accessed facilities by the urban poor for their children, the usefulness of the same must be maximised by talking to mothers about importance of continuation of exclusive breast feeding till 6 months of age, giving appropriate complementary food articles in adequate frequency and quantity during the follow up visits of immunisation sessions. This will certainly inculcate better dietary habits and reduce the burden of child illnesses associated with malnutrition.

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