

Maternal factors affecting malnutrition status of children of 1 to 5 years age

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Abstract

Introduction: The children of today are the future of tomorrow. Malnutrition is a global health problem among children. Globally more child deaths are attributable to under nutrition. There are many factors affecting nutritional status of children. This study was done to know the effects of various maternal factors on malnutrition among 1 to 5 year old children in urban slum population around Civil Hospital, Ahmedabad from October to November 2014.

Materials and Methods: A cross sectional study was conducted on 200 mother-child pairs in urban slums around civil hospital, Ahmedabad. Undernourished children aged 1 to 5 years were included. Grading of nutritional status was done based on weight for age as per Indian Academy of Pediatrics (IAP) Classification. A pre-tested questionnaire was used to collect data regarding various factors which may affect nutritional status of the child like anthropometry of child, maternal history including antenatal, intra-natal and postnatal history. Data was entered in Microsoft Excel 2007 and was analyzed in Epi info 7.

Results: In this study, 50.5% were males and 49.5% were females with majority 38% children in age group of 3 to 4 years. 66% children had Grade I malnutrition. Association between literacy of the mother, minimum four antenatal visits, feeding at anganwadis were the factors found to be statistically significant related with malnutrition while birth order of the child was not significant.

Conclusion: Empowering mothers with literacy and knowledge of anganwadis, exclusive breastfeeding, complementary feeding, adequate antenatal checkups can help to reduce malnutrition for which we have to join hands with one vision and one voice.

Keywords: Maternal factors, malnutrition, 1 to 5 years age group

Introduction

Today's children are the future of tomorrow. Malnutrition is a global health problem. Globally more child deaths are attributable to undernutrition. Nutritional status of children is an indicator of nutritional problem of the entire community. Studies conducted worldwide show that 150 million (26.6%) are underweight, while 182 million (32.5%) are stunted all over the world¹. More than half of the world's undernourished people live in India. Fifty-four percent children are underweight, 52% are stunted, while 17% are wasted². Factors which are responsible for the higher prevalence of malnutrition in south Asian countries including India comprise low birth weight, maternal health problems, delay in introduction of complementary feeds, faulty child care and other poor environmental conditions which are again more prevalent in slums³. This study was done to know the effects of various maternal factors on malnutrition among 1 to 5 year old children in urban slum population around Civil Hospital, Ahmedabad from October to November 2013.

2. Aims & Objectives

- To assess the role of maternal factors on the nutritional status of children.
- To assess the knowledge of mother regarding utilization of Anganwadi services & breastfeeding practices.

3. Methodology

3.1 Study area

Urban slums around Civil Hospital, Ahmedabad.

3.2 Study type

Community based cross sectional study.

3.3 Study sample

The households with children of 1-5 years of age were visited and malnourished children of those household were included in this study. Thus total number of mother-child pair came to 200.

3.4 Study method

Grading of nutritional status was done based on weight for age as per Indian Academy of Pediatrics (IAP) Classification. A pre-tested preformed questionnaire was used to collect data regarding various factors which affect nutritional status of the child like anthropometry, maternal history including antenatal, intra-natal and postnatal history.

3.5 Study analysis

Data was entered in Microsoft Excel 2007 and was analyzed in Epi info 7.

4. Results

Table1: Gender wise distribution of Children according to grade of under nutrition

Grade	Male	Female
1	73 (36.5%)	59 (29.5%)
2	22 (11%)	29 (14.5%)
3	6 (3%)	10 (5%)
4	0 (0%)	1 (0.5%)
Total	101	99

Table 2: Age and Gender wise distribution of Study Subject

Age	Male	Female	Total
1	9 (8.9%)	9 (9.09%)	18 (9%)
2	22(21.7%)	18(18.18%)	40(20%)
3	35(34.6%)	42(42.4%)	77(38.5%)
4	24(23.7%)	17(17.1%)	41(20.5%)
5	11(10.89%)	13(13.1%)	24(12%)
Total	101	99	200

Table 1 and 2 shows that, 50.5% were males and 49.5% were females with majority 38% children in age group of 3 to 4 years. 66% children had Grade I malnutrition.

Table 3: Relation between literacy of mother & malnutrition

Grade	Literate	Illiterate	Total
1	76 (38%)	56 (28%)	132 (66%)
2	15 (7.5%)	36 (18%)	51 (25.5%)
3	3 (1.5%)	13 (7%)	16 (8.5%)
TOTAL	94 (47%)	106 (53%)	200 (100%)

Table 3 states that education of antenatal women strongly influences the nutritional status of the children. Statistical test chi-square was applied. $X^2 = 15.18, p < 0.05$, the result is statistically significant.

Table 4: Socio-demographic, antenatal and postnatal details of mother

Socio-demographic variable		Frequency	Percentage
Marital Status	Married	197	98.5%
	Widowed	3	1.5%
Occupation	Housewife	95	47.5%
	Labour	105	52.5%
ANC Registration	Yes	197	98.5%
	No	3	1.5%
No. of Antenatal Visits	0	3	1.5%
	< 4	98	49%
	4	68	34%
	>4	34	17%
T. Iron & Folic Acid	Taken	161	80.5%
	Not Taken	39	19.5%
Inj. TT	Not Taken	1	0.5%
	TT-1	43	21.5%
	TT-2	156	78%
Exclusive Breast Feeding	Yes	56	28%
	No	144	72%
Timely Complementary Feeding	Yes	68	34%
	No	132	66%

Table 4 shows that only 34% mothers had taken four antenatal visits. Around 80% of women had taken iron folic acid tablets and required TT injections. Proportion of exclusive breast feeding (28%) and timely introduction of complementary feeding (34%) was very less among the participated mothers.

Table 5: Relation of antenatal visits of mother & malnourishment of children

No. of Visits	Grade 1	Grade 2	Grade 3
< 4	82	19	7
4	29	23	4
>4	18	9	6

Table 5 shows that relationship between number of antenatal visits and severity of malnutrition found to be statistically significant. ($X^2 = 14.9, p < 0.05$)

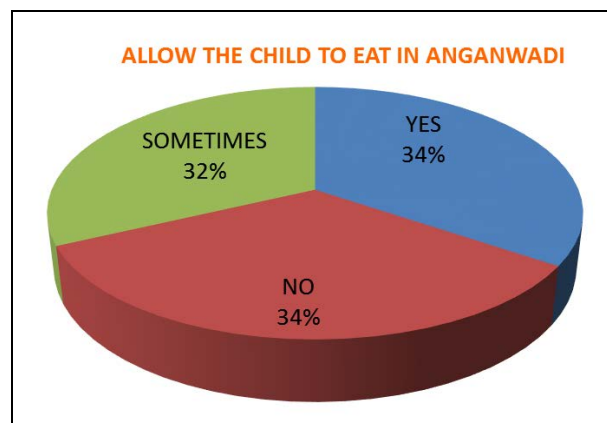


Fig 1: Allowing the child to eat in anganwadi

Fig 1. shows that only 34% of the mother allow their child to eat in anganwadi regularly.

Table 6: Relation between eating at anganwadi & grading of malnutrition

Allow to child to eat at anganwadi	Grade 1	Grade 2	Grade 3
Yes	51	14	3
No	22	14	10
Sometimes	59	23	4

Table 6 shows that there was a significant relationship between allowing the child to eat at anganwadi and nutritional status of the children and. ($X^2 = 15.02, p < 0.05$)

Table 7: Relation of Birth order with grade of malnutrition

Birth Order	Grade 1	Grade 2	Grade 3
1	36	12	1
2	57	24	10
≥3	39	15	6

Table 7 shows that relationship between birth order and status of under nutrition. $X^2 = 2.6, p > 0.05$, the result is not statistically significant.

5. Conclusion

66% (132) children had Grade I malnutrition. Majority of mother had not taken adequate antenatal & postnatal care. Majority mother’s had more number of children with 88% of them having inadequate spacing between two children. There was very much lack of knowledge about the role of anganwadi & breast feeding practices in prevention of malnutrition. Only 34% mothers regularly sent their children to anganwadies.

6. Recommendations

Educational campaigns on exclusive breastfeeding, intranatal, postnatal and antenatal care can help the country to tackle malnutrition.

Empowering mothers with literacy and knowledge of anganwadis, breastfeeding, complementary feeding, adequate antenatal checkups, hospital delivery, adequate spacing between two child at least 3 years and family planning can help to reduce malnutrition.

Increase literacy of mother, because educated mother know how to bringing up child. Advice mother to allow the child to go in anganwadi & allow to eat.

7. Discussion

More males (35.29%) were affected with lower grades of undernutrition than females (32.85%), whereas severe grades were common in females (5.71%) than in males (2.94%). The findings were consistent with the studies conducted by Dwivedi *et al.*, in urban slums [4].

The 24-35 month age group had maximum number of underweight children (38.5%). These findings were similar to the study conducted by Reifen *et al* [5] whereas Blount *et al* [6]. found the peak prevalence in the age group of 12-23 months. Education of mother significantly influenced the nutritional status of the children. Illiterate mothers had more children in Grade 2 (18%) and Grade 3 (7%) than literate mothers and this relationship is statistically significant ($p < 0.05$). These findings were similar to study conducted by Mittal *et al* [7].

8. References

1. Alhaji M, Allen S. Paediatric review: Management of severe malnutrition-time for a change. *Africa Health* 2002; 24:21-3.
2. Mishra VK, Lahiri S, Luther NY. Child nutrition in India. National Family Health Survey Subject Reports, International Institute of Population Sciences: Mumbai, India; 1999, 39.
3. Ramalingaswami V, Jonsson U, Rhode J. Malnutrition: A south Asian enigma. *Malnutrition in South Asia: A regional profile*, UNICEF Regional office for South Asia. ROSA Publication: Kathmandu, Nepal; 1997, 11-22.
4. Dwivedi SN, Banerjee N, Yadav OP. Malnutrition among children in an urban Indian slum and its associations. *Indian J Matern Child Health* 1992; 3:79-81.
5. Reifen R, Haftel L, Manor G, Sklan D, Edris M, Khoshoo V, *et al*. Ethiopian-born and native Israeli school children have different growth patterns. *Nutrition* 2003; 19:427-31.
6. Blount BW, Krober MS, Gloyd SS, Kozakowski M, Casey L. Nutritional status of rural Bolivian children. *Mil Med* 1993; 158:367-70.
7. Mittal A J Singh, SK Ahluwalia. Effect of Maternal Factors on Nutritional Status of 1-5-Year-Old Children in Urban Slum Population *Indian Journal of Community Medicine*. 2007; 32(4):264-67