

Original Research Article

Morbidity profile of 2 months-5years children according to IMNCI classification in paediatrics outpatient department of tertiary care hospital, Joka, Kolkata, India

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ABSTRACT

Background: Every year, more than 10 million children die in developing countries before they reach their fifth birthday. Seven in 10 of these deaths are due to acute respiratory infections mostly pneumonia, diarrhoea, measles, malnutrition & combination of these illnesses. The rationale of our study is to assess the profile of childhood illness in the paediatrics out-patient department at ESI-PGIMSR and MC, Joka, Kolkata, India so that the same burden can be minimised & to promote healthy upbringing of children below five years of age.

Methods: This was an observational study of cross-sectional design conducted among the mother-child pair (child belonging to the age group of 2 months-5 years) visiting Pediatrics OPD during the study period i.e. 4 weeks. Convenience sampling method was used. The participants whose guardians did not give consent for the study & were seriously ill were excluded from this study. A pre-designed and pre-tested interview schedule was used. After giving a brief introduction about the topic, verbal consent was taken & face to face interview was conducted in local language. Data was compiled & computed in SPSS software version 20.

Results: According to the IMNCI classification, 15.9% of the study subjects had severe pneumonia, 17.8% had pneumonia. 1.9% of the study subjects had severe dehydration. None of the respondents presented with some dehydration. Only 1% of the respondents presented with anemia. 4.9% of the respondents presented with severe malnutrition, 13.8% of them had malnutrition according to IMNCI classification. 31.7% of the respondents had primary immunisation. 67.3% of them had been breastfed. Among them 41.2% of them were breastfed 8 times & more a day. 92% of them had supplementary feeding as rice, 33.3% of them had supplementary feeding as baby food. 69.3% of them had complained of change in food habit during illness.

Conclusions: Proper counselling to parents regarding prevention of common morbidities like pneumonia, diarrhoea, malnutrition etc. should be provided at each and every possible hospital contact. Awareness about danger signs & symptoms of urgent hospitalisation should be imparted using pamphlets or other health educational materials. Health workers also should undergo proper training so that proper classification of the conditions as well as efficient management could be provided.

Keywords: IMNCI, Morbidity, Paediatrics, Under-five children

INTRODUCTION

Under-five mortality has decreased by almost 50% worldwide. However, preventable and treatable diseases needlessly kill young children.¹ Every year, more than 10 million children die in developing countries before they reach their fifth birthday. Seven in 10 of these deaths are due to acute respiratory infections mostly pneumonia, diarrhea, measles, malnutrition and combination of these illnesses.² Diarrhea, pneumonia, and malnutrition are also the three major morbidity conditions during infancy and childhood leaving a lasting effect on health and well beings of Indian children.³ In spite of various disease specific control programs in operation, there has not been significant reduction in childhood morbidity and mortality. In response to this challenge, WHO/UNICEF proposed a comprehensive single efficient and effective approach to manage childhood illnesses i.e. Integrated Management of Childhood Illness (IMCI).⁴⁻⁶ Integrated Management of Child-hood Illness (IMCI) is a child survival strategy launched in 1995.⁷ It is a strategy fostering holistic approach to child health and development, built upon successful experiences from effective child intervention like immunization, rehydration therapy, management of acute respiratory infections and improved infant feeding.² IMCI strategy pertains to improve: case management skills, health system support, and family and community practices for child health and development.⁸ Though over 113 countries have adapted the strategy, but the impact has been variable.⁹ WHO and UNICEF have developed IMCI approach in order to deal more effectively and efficiently with the childhood diseases both in the community and at the primary level health facilities.¹⁰ The primary care component of IMCI is centered on case management algorithms.¹¹

The strategy includes guidelines for the management of sick children at first-level facilities. The guidelines are intended to improve care by ensuring a complete assessment of the child's health, and by providing algorithms that combine presenting symptoms into a set of illness classifications for management.¹² It is an effective low cost strategy for improving child health and is highly appropriate for developing countries.¹³ The integrated approach reduces wastage of resources and avoids duplication of an effort.¹⁴ IMNCI, integrated management of neonatal and childhood illness, is a initiative taken by the government of India to reduce death and to promote growth and development among children under-five years of age.

The IMNCI guidelines represent evidence based syndromic approach to case management that includes rational, effective and affordable use of drugs and diagnostic tools. At first level health facilities in low income countries diagnostic supports such as radiology and laboratory supports are minimal or non-existent, drugs and equipments are often scarce. Experience and scientific evidence show that improvements in child care

are not necessarily dependent upon the use of sophisticated and expensive technologies. But rather on effective strategies that are based on holistic approach and are available to majority of those in need which takes into the capacity and structure of health systems as well as traditions and beliefs in the community. IMNCI management procedures uses a limited number of essential drugs and encourage active participation of caretakers in the treatment of infants and children.² The rationale of our study is to assess the profile of childhood illness in the pediatrics out-patient department at ESI-PGIMSR and MC, Joka, Kolkata, India so that the same burden can be minimized and to promote healthy upbringing of children below five years of age.

METHODS

This was an observational study of cross-sectional design conducted among the mother-child pair (child belonging to the age group of 2 months-5 years) visiting Paediatrics OPD at ESI-PGIMSR and ESIC Medical College and Hospital, Joka during the study period i.e. 4 weeks (01/03/16-31/03/16). ESI-PGIMSR and ESIC Medical College and Hospital, Joka, is a 350 bedded tertiary hospital catering 43 lakhs insured persons. Convenience sampling method was used. The participants whose guardians did not give consent for the study and were seriously ill were excluded from this study. A pre-designed and pre-tested interview schedule consisting of two parts like socio-demographic characteristics of the study subjects including age, religion, residence, education etc., Questions on morbidities like general danger signs, diarrhea, pneumonia, malnutrition, anemia etc. were asked. Immunization status was assessed. WHO growth chart, weighing machine, IMNCI booklet were also used as study tools. After giving a brief introduction about the topic, verbal consent was taken from the mother or the guardians who accompanied them. Face to face interview was conducted in local language. Data was compiled and computed in SPSS software version 20. Checked for missing values. Frequency and percentage was calculated. The study was approved by Institutional Ethics Committee. Informed consent from the study participants was taken. Confidentiality of the respondents was maintained.

RESULTS

58.4% of the study subjects belonged to the age group of 13- 59 months whereas 41.6% of them belonged to 2-12 months. Male and female participants were almost equal (54.5% and 45.5%). Majority of the study participants follow Hinduism (85.1%). Majority of them were accompanied by mothers (89.1%) followed by father (9.1%) and grandmother (1%). Half of the accompanied respondents had completed secondary education. Majority of them were housewives (81.1%) (Table 1).

Many of the study subjects presented with general danger signs. 13.9% of them presented with difficulty in drinking

and breastfeeding as well as vomiting out everything. 10.9% of them were lethargic or unconscious. 40.6% of them complained of cough.

Half of them had fast breathing whereas none showed chest indrawing.⁷ study subjects complained of diarrhea. Among them 29.6% were lethargic or unconscious as well as had sunken eyes. 14.3% of the study subjects were not able to drink properly and skin pinch went back very slowly. 27.7% of them presented with fever (Table 2).

Table 1: Baseline characteristics: (N=101).

Characteristics	Number (n)	Percentage (%)
Age (in months)		
2-12	42	41.6
13-59	59	58.4
Sex		
Male	55	54.5
Female	46	45.5
Religion		
Hinduism	86	85.1
Islam	15	14.9
Residence		
Urban	50	51.5
Rural	47	48.5
Respondents accompanied		
Mother	90	89.1
Father	10	9.9
Grandmother	1	1
Education of the accompaniment		
No schooling	4	3.9
Primary schooling	13	12.8
Secondary schooling	51	50.4
Higher secondary schooling	21	20.7
Graduate and above	13	12.8
Occupation of the accompaniment		
Skilled	5	4.9
Non-skilled	15	14.8
Housewife	82	81.1

According to the IMNCI classification, 15.9% of the study subjects had severe pneumonia, 17.8% had pneumonia, 66.3% had no pneumonia cough and cold. 1.9% of the study subjects had severe dehydration.

None of the respondents presented with some dehydration. 98.1% of them had no dehydration. Only 1% of the respondents presented with anemia. 4.9% of the respondents presented with severe malnutrition, 13.8% of them had malnutrition according to IMNCI classification (Table 3). 31.7% of the respondents had primary immunization 67.3% of them had been breastfed. Among them 41.2% of them were breastfed 8 times and

more a day. 92% of them had supplementary feeding as rice, 33.3% of them had supplementary feeding as baby food. 69.3% of them had complained of change in food habit during illness (Table 4).

Table 2: Distribution of study subjects according to signs and symptoms presented with (N=101).

Signs and symptoms	Frequency (n)	Percentage (%)
General danger signs*		
Difficulty in drinking or breastfeeding	14	13.9
Vomiting out everything	14	13.9
Lethargic or unconscious	11	10.9
Cough	41	40.6
Fast breathing#	22	53.6
Diarrhoea	7	6.9
Lethargic or unconscious*§	2	28.6
Sunken eyes\$	2	28.6
Not able to drink properly\$	1	14.3
Skin pinch goes slowly\$	1	14.3
Fever	28	27.7

*multiple answers allowed #percentage among those who presented with cough, \$ percentage among those who presented with diarrhoea.

31.7% of the respondents had primary immunization 67.3% of them had been breastfed. Among them 41.2% of them were breastfed 8 times and more a day. 92% of them had supplementary feeding as rice, 33.3% of them had supplementary feeding as baby food. 69.3% of them had complained of change in food habit during illness (Table 4).

Table 3: Distribution of study subjects according to the IMNCI classification (N=101).

IMNCI classification	Number (n)	Percentage (%)
Severe pneumonia	16	15.9
Pneumonia	18	17.8
No pneumonia (cough and cold)	67	66.3
Severe dehydration	2	1.9
Some dehydration	0	0
No dehydration	99	98.1
Anemia	1	.99
No anemia	100	99.1
Severe malnutrition	5	4.9
Malnutrition	14	13.8
No malnutrition	82	81.1

Table 4: Distribution of the study subjects according to immunisation status and feeding practices (N=101).

Practices	Number (n)	Percentage (%)
Primary immunisation	32	31.7
Breast feeding done	68	67.3
8 times and above times a day*	28	41.2
Supplementary feeding as Rice@	69	92
Supplementary feeding as Baby food	25	33.3
Food habit changed during illness	70	69.3

*percentages out of those who were breastfed

DISCUSSION

In our study, few of the study subjects presented with general danger signs. 13.9% of them presented with difficulty in drinking and breastfeeding as well as vomiting out everything and 10.9% of them were lethargic or unconscious which is similar with various studies where none or very few of the patients presented with the three immediate dangerous signs or the three danger signs.^{15,17,18}

In this study, 40.6% of them complained of cough. Half of them had fast breathing whereas none showed chest-in-drawing. According to the IMNCI classification, 15.9% of the study subjects had severe pneumonia, 17.8% had pneumonia. A survey on the application of IMCI strategy by medical doctors in Bangladesh showed that participants complained of cough or cold was (49%) and they belonged to the classification of pneumonia (25%), which is similar to our findings.¹⁶ Whereas another study conducted by Chaudhuri N et al shows that maximum number of cases presenting to the health facilities had cough as the main symptom (79%) which is higher than our findings.¹⁷

In our study, 7(6.9%) study subjects complained of diarrhea and 1.9% of the study subjects had severe dehydration. None of the respondents presented with some dehydration which is in contrast with the findings by Roodpeyma Sh et al where 34.8% of the cases manifested with diarrhea and one of the patients with diarrhea were dehydrated.¹⁵ In another study, 19% of the participants had diarrhea and no child presented with diarrhea and dehydration.¹⁶

In our study, 27.7% of them presented with fever which is similar with the findings where upper respiratory tract infections were the main cause of fever in children followed by lower respiratory tract infection (pneumonia) was the most common diagnosis for high grade fever in 8 (32%) children managed by IMCI approach.¹⁸ Findings

are in contrast with Chaudhuri N et al where the most frequent presenting illness was fever (80%).¹⁷

In our study, 4.9% of the respondents presented with severe malnutrition, 13.8% of them had malnutrition according to IMNCI classification which is in contrast to the study findings of where under nutrition was checked in 71% of the total children¹⁷. 31.7% of the respondents in our study had primary immunization and 67.3% of them had been breastfed and 92% of them had supplementary feeding as rice, 33.3% of them had supplementary feeding as baby food.

In another study, The vaccination status was complete in 88.8% of patients. All the newborns and 81.5% of infants were breast fed. Twenty-four (88.8%) out of twenty-seven infants were receiving multivitamin and or ferrous sulphate drops as supplemental feeding which is because these age-group belong to infant where immunisation and breastfeeding coverage is supposed to be higher than the age-group of our study participants i.e. (2months-5 years).¹⁵

CONCLUSION

Majority of the study subjects complain of cough and around half of them had fast breathing. Few of them complained of diarrhea with severe dehydration. Malnutrition was also prevalent among them. Few of the study subjects followed proper diet, were breastfed properly and were immunized till date. Proper counselling to parents regarding prevention of common morbidities like pneumonia, diarrhea, malnutrition etc. should be provided at each and every possible hospital contact.

Awareness about danger signs and symptoms of urgent hospitalization should be imparted using pamplets or other health educational materials. Advice on keeping child warm as well as counselling regarding homemade remedies should be given to them. Counselling of proper diet as well as continue breastfeeding should be given. Encourage about proper and timely immunisation to their child. Health workers also should undergo training so that proper classification of the conditions as well as efficient management could be provided.

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