

## ORIGINAL ARTICLE

**Impact of infant & young child feeding & caring practices on morbidity**Anjuman Chaudhary<sup>1</sup>, Harivansh Chopra<sup>2</sup>, Sunil Kumar Garg<sup>3</sup>, S.K. Bajpai<sup>4</sup>, Tanveer Bano<sup>5</sup>, Sanjeev Kumar<sup>6</sup>

<sup>1</sup>Associate Professor, Department of Community Medicine, Mahamaya Rajkiya Allopathic Medical College, Ambedkar Nagar; <sup>2</sup>Professor, Department of Community Medicine, L.L.R.M. Medical College, Meerut; <sup>3</sup>Professor and Head of the Department of Community Medicine, L.L.R.M. Medical College, Meerut; <sup>4</sup>Retired Professor, Department of Community Medicine, L.L.R.M. Medical College; <sup>5</sup>Professor, Department of Community Medicine, L.L.R.M. Medical College, Meerut; <sup>6</sup>Associate Professor, Department of Community Medicine, L.L.R.M. Medical College, Meerut.

<a href="#">Abstract</a>	<a href="#">Introduction</a>	<a href="#">Methodology</a>	<a href="#">Results</a>	<a href="#">Conclusion</a>	<a href="#">References</a>	<a href="#">Citation</a>	<a href="#">Tables / Figures</a>
--------------------------	------------------------------	-----------------------------	-------------------------	----------------------------	----------------------------	--------------------------	----------------------------------

**Corresponding Author**

Corresponding Author: Dr. Anjuman Chaudhary, Associate Professor, Department of Community Medicine, Mahamaya Rajkiya Allopathic Medical College, Ambedkar Nagar, Uttar Pradesh  
E Mail ID: [nutan237@gmail.com](mailto:nutan237@gmail.com)

**Citation**

Chaudhary A, Chopra H, Garg SK, Bajpai SK, Bano T, Kumar S. Impact of infant & young child feeding & caring practices on morbidity. Indian J Comm Health. 2019;31(3):376-381.

**Source of Funding:** Nil **Conflict of Interest:** None declared

**Article Cycle**

**Received:** 16/05/2019; **Revision:** 15/09/2019; **Accepted:** 20/09/2019; **Published:** 30/09/2019

This work is licensed under a [Creative Commons Attribution 4.0 International License](https://creativecommons.org/licenses/by/4.0/).

**Abstract**

**Background:** Around 5.9 million children still die every year before reaching their fifth birthday. Child morbidity and mortality due to preventable causes remains high in developing countries. **Aim & Objective:** To find out the relationship of morbidity with child rearing practices and sociodemographic characteristic. **Material and Methods:** To cover a sample size of 400 in urban health center area population under 5 children every alternate family was selected by systematic random sampling from the total of 1867 registered families at urban health center. The data was obtained by the interview of mothers and examination of children using predesigned and pretested Questionnaire. The data thus collected, was first coded and then transferred to a master chart on Microsoft Excel sheet, from which distribution as well as co-relation tables were prepared, analyzed and statistically evaluated by SPSS version 20.0. **Result:** In the present study, the overall fortnightly incidence of morbidity among under 5 children was found to be 65.3% (boys – 64.2%, girls – 66.5%). Exclusive breastfeeding ( $p < 0.001$ ); time of initiation of breastfeeding ( $p < 0.001$ ); complementary feeding ( $p < 0.05$ ) and hand washing practices ( $p < 0.001$ ) are statistically significant predictors of child morbidity **Conclusion:** We need comprehensive child health care programme having all three promotive, preventive and curative services.

**Keywords**

Undernutrition; Socio-economic status; Exclusively Breastfed; Immunization

**Introduction**

Around 5.9 million children still die every year before reaching their fifth birthday. Most of these deaths occur in low income and middle income countries.(1) The gap between rich and poor countries is wide.(2) Each year 27 million children are born in India.

Around 10 % of them do not survive to 5 year of age. India contributes to 25 % of the over 5.9 million under five deaths occurring worldwide every year.(3) Most deaths among under 5 are still attributable to a just handful of conditions, and are avoidable through existing interventions. (4)

In India, the common illnesses in children younger than 5 years of age according to the national family health survey-4 include fever (20%), diarrhea (15%), acute respiratory infections (5%) and malnutrition (46%) and often combination of these condition.(5) Adequate nutrition is critical to child development. Nutritional problems are also substantially higher than average in Meghalaya and in Uttar Pradesh (for stunting).(5) Micronutrient deficiency is a serious contributor to childhood morbidity and mortality. Child care practices that could impact on child nutrition include care of pregnant and lactating mothers, breast feeding and feeding young children, care of children during illness, psycho-social care of children, food preparation and storage, and hygiene.

### Aims & Objectives

1. To study morbidity profile of under-five children
2. To find out association between childhood morbidity and child rearing practices and sociodemographic characteristic.

### Material & Methods

**Study Type:** This was a cross sectional type of study.

**Study Population:** The present study was conducted in the population registered at the urban health centre Suraj Kund, which was a field practice area of Department of Community Medicine LLRM Medical College, Meerut. The families belonging to the localities of Old and New Arya Nagar, Old and New Hanumanpuri, Old and New Bansipura Lakshmi Nagar, Saraswati Mandir, Devi Nagar, Ram Bagh and Gandhi Nagar, were registered at the centre. There were approximately 800 children in the under 5 age group in the 1867 registered families of urban field practice area of Department of Community Medicine, L.L.R.M Medical college, Meerut.

**Study area:** Department of Community Medicine LLRM Medical College, Meerut.

**Sample size calculation:** Children's nutritional status in Uttar Pradesh NFHS-3 (6) Stunting 57% and underweight 42%. Assuming the prevalence of malnutrition to be 50% at 95% confidence interval (C.I) and allowing a relative precision of 10% for the estimate, the sample size was calculated as 384 using the formula. For giving a margin of non-coverage a minimum sample of 400 children was taken for the study.

**Sampling Method:** Systematic random sampling technique. There were approximately 800 under five children in the register family of urban field practice

area, every alternate child was selected and taken for study.

**Strategy for collection:** Detailed information about the morbidity, sociodemographic characteristics and child rearing practice were collected from mothers on a predesigned and pretested questionnaire. 400 children were clinically examined, anthropometric measurements were taken.

**Consent:** The data were collected from the subject after obtaining informed oral consent from them.

**Data collection:** The data thus collected, was first coded and then transferred to a master chart on Microsoft Excel sheet, from which distribution as well as co-relation tables were prepared, analyzed and statistically evaluated by SPSS version 20.0.

### Results

In this study it was found that ARI was the most common morbidity (34.8%) followed by diarrhoea (24.8%), viral fever (15.5%) and accident was (12.3%). ([Table-1](#))

In this study morbidity among children was 65.3% (boys – 64.2%, girls – 66.5%). There was no statistically significant difference among the morbidity profile between two genders ( $p > 0.05$ ) ([Table-2](#)) Majority of the children (70.0%) belonging to 12-23 month age group were morbid, the difference of morbidity in different age groups was not statistically significant ( $p > 0.05$ ). The prevalence of morbidity was found to be maximum in SC (72%) and least in general caste (60.8%) category. ( $p > 0.05$ ) Morbidity was found more (90.9%) among the children from upper lower class ( $p < 0.001$ ). It was observed that morbidities were more in nuclear (67.9%) families ( $p > 0.05$ ).

The Fortnightly incidence of morbidity was maximum in children whose mothers were illiterate and just literate (72.0%) but difference in Fortnightly incidence of morbidity in relation with education status of mother was not found statistically significant ( $p > 0.05$ )

([Table-3](#)) A statistically significant association between child morbidity and breastfeeding ( $p < 0.05$ ), time of initiation of breastfeeding ( $p = 0.001$ ).

In the present study, 14.5% children were exclusively breastfed, difference in Fortnightly incidence of morbidity in relation to exclusive breastfeeding was found to be statistically significant ( $p < 0.001$ ).

Fortnightly incidence of morbidity was less in children with complementary feeding started at the age of 6 months (58.3%) as compare to those

children in which complementary feeding was started either earlier i.e. <6 month of age (63.1%) or later i.e. > 6 month of age (72.0%) ( $p < 0.05$ ).

Morbidity was higher (77.8%) in those children whose mother did not wash hand before child feeding than in the children of mother who were washing their hand before feeding their children (55.9%) ( $p < 0.001$ ).

## Discussion

In the present study, the overall fortnightly incidence of morbidity among under 5 children was found to be 65.3%. The findings of the study were consistent with finding of (7,8,9) being 53.7% ,49.0% and 68.5% respectively.

In the present study the major causes of fortnightly incidence of morbidity were respiratory infections (34.8%) followed by diarrhoea (24.8%) and fever (15.5%) and skin disorders (4.8%) and studies carried out in other parts of India also pointed out the respiratory diseases and GIT infections the most common causes of morbidity among under five children .Similar findings were reported by Jairaj et al (9) in there study in Jamnagar district in which leading cause of morbidity was respiratory infections (68.5%), followed by GIT disorder(14.6%) ,skin disorders (6.8%) and PUO. (10) also reported maximum morbidity due to respiratory infections (38.6%) followed by diarrhoeal infections (12.8%), skin infection (12.8%). NFHS-4 survey found fever as (13.0%) followed by GIT infections (9.0%) and acute respiratory infections (3%) among under five children.(5)

In the present study fortnightly incidence of morbidity in males and females were 64.3% and 66.5% respectively ( $P > 0.05$ ) (10) found that prevalence rates of various illnesses were found 71.7% among female and 80% in male counterparts but the differences were not statistically significant. The prevalence of morbidity was (68.4%) in the first year of life, while it was maximum (70.0%) in the second year of life which was comparable to Jairaj et al (9) who found that morbidity was more in age group 0-2 years in all the three areas.

The fortnightly incidence of morbidity was maximum (72.0%) among children belonging to the schedule caste, followed by OBC (67.9%) and least in children belonging to general caste (60.8%) with a non-significant difference ( $p > 0.05$ ). Study of Paramanik D et al in West Bengal in 2015, showed that the prevalence of morbidity was found to be maximum

in ST (90.9%) and least in SC (64.3%) category ( $p = 0.299$ ). (10)

In the present study fortnightly incidence of morbidity was found to be maximum in children belonging to upper lower class (90.9%) followed by lower middle class (73.2%) and minimum in upper class (38.5%) ( $p < 0.001$ ) (11,12,13), and it was also found that prevalence of morbidity was higher in low social class.(14)

In the present study morbidities were not found to be significantly associated with type of family. (15) found similar finding.

The fortnightly incidence of morbidities were 70.5% and 60.2% in children where mother's education was 10 years or more as compared to 72.0% in children whose mothers were just-literate or illiterate ( $P > 0.05$ ) (9) who found that morbidity among children showed inverse relationship with educational status mothers while Lakshmi et al(8) found no association between the prevalence of illnesses and the literacy status of mothers ( $P > 0.05$ ) in preschool Children.

In the present study 94.8% children had been breastfed. The fortnightly incidence of morbidity was more in those children who were not breastfed (90.5%) as compare to those who were breastfed (65.3%). This relationship in Fortnightly incidence of morbidity with breastfeeding was found to be statistically significant. ( $p < 0.05$ ). A child who is breast-fed has greater chances of survival than a child artificially fed. (16) Studies have shown that breastfed infants do better on intelligence and behaviour tests into adulthood than formula-fed babies.(6)

In the present study fortnightly incidence of morbidity was more (70.4%) in those children who were breastfed after 24 hours than those who were breastfed within 24 hour (61.0%) and within ½-1 hour (32.0%) ( $p < 0.001$ ). Rajiv & Paswan (18) also observed that children were 1.3 times more likely to get infection who did not breastfeed within two hours of birth or even the same days.

DLHS-4 (19) data shows that exclusive breastfeeding rate varies from 6.7% to 93.3%, substantially from state to state and district to district 22 while NFHS-4 data 5 shows that the exclusive breastfeeding rates in children under six months is 41.6% which was higher than 14.5% in present study .The Fortnightly incidence of morbidity was high in those children who were not exclusively breastfed (70.8%) than those exclusively breastfed (32.8%) ( $p < 0.001$ ). (10,19). Rajiv & Paswan (18) found that the

differential in morbidity prevalence among fully breastfed versus partially breastfed infants age 0-5 months is negative.

Introduction of complementary feeding along with continued breastfeeding in 6-9 months age was only 32.6 % (NFHS) (5) More recently, the DLHS- 4 data (20) reveals that introduction of complementary feeding along with continued breastfeeding in 6-9 months age is only 23.9%, means there is decline after a gain. In present study 31.3% children received complementary feeding which was started at 6 months of age. Fortnightly incidence of morbidity was less in children with complementary feeding started at the age of 6 month (58.3%) as compared to those children in which complementary feeding was started either earlier i.e. <6 month of age (63.1%) or later i.e. > 6 month of age (72.0%) ( $p < 0.05$ ).

Mhlanga M et al (19) was found children born to mothers with poor knowledge on child caring practices were 1.02 times likely to get ill compared to those whose mother had good knowledge on child caring practices ( $p = 0.031$ ; 95% C.I (0.44- 0.93).

In the present study 57.2% of mother used to wash hand before child feeding and 42.8% of mother did not wash hand before child feeding. The Fortnightly incidence of morbidity was higher (77.8%) in those children whose mother did not wash hand before child feeding than the children whose mother wash their hand before child feeding (55.9%) ( $p < 0.001$ ) (21) reported similar finding.

### Conclusion

The study findings showed that socio-economic status of the respondents; exclusive breastfeeding; time of initiation of breastfeeding; complementary feeding and hand washing practices are statistically significant predictors of child morbidity.

### Recommendation

It is then evident from these findings that better child health outcomes, are only possible if governments and stakeholders in health focus on the establishment of a sustainable, effective community health system for community mobilization. Such a system needs to be integrated into the conventional health delivery system so as to continuously empower mothers at grassroots level on good child health and nutrition practices. In the long run communities take ownership and accountability of their health and that of their children yielding better

health outcomes and greater chance for child survival.

### Limitation of the study

Study area was only that area which was covered under UHTC, Lala Lajpat memorial medical college, Meerut which may / may not be a representative sample of an Urban area of Meerut. The study being a cross sectional study could only measure association between independent factors and child morbidity.

### Relevance of the study

Present study provides fortnightly incidence of morbidity from community-based setting.

### Authors Contribution

All authors have contributed equally.

### References

1. UNICEF (2018), Level and trends of in child mortality, Report 2018.
2. UNICEF (2014); Committing to child survival, A Promise Renewed Progress Report, 2014
3. UNICEF (2018) ; Child mortality estimates, country, global and regional specific estimates, 18 sept. 2018.
4. WHO, UNICEF (2009); Global action plan for prevention and control of pneumonia
5. National Family Health Survey-4(2015-16) Uttar Pradesh; International Institute of Population Sciences and Macro international. Mumbai, India, Sep. 2017
6. National Family Health Survey-3(2005-06); State Fact Sheet Uttar Pradesh, International Institute of Population Sciences and Macro international.
7. Vijay L. Grover, Pragti Chhabraz, Sandeep Malik & A. T. Kannan; Pattern of mortality and morbidity amongst under five in an resettlement colony of east Delhi, IJPSM, 1 & 2; 2004 : 22-26.
8. Lakshmi J, Begum K, Saraswathi G & Prakash, Influence of Nutrition and Environment on Morbidity Profile of Indian Preschool Children Mal J Nutr, 11(2); 2005: 121-132
9. Jairaj S., Hanspal, Nagar S, Kishore S, Singh J ; A Study of Morbidity Pattern and Socio-demographic status in three different Under Five Populations of Jamnagar District (Gujarat). Ind. Jour. of maternal and child health, 13 (1); 2011:pp 2-8.
10. Paramanik D, Datta S, Pal P, Chowdhury S, Murmu J, Nayek S; Assessment of Morbidity Profile of Under-Five Children in a Rural Area of West Bengal. Ind. Jour. of Hygiene and Public Health, Kolkata, 1(2); 2015 :pp 35-40.
11. Stallings, Rebecca Y.; Child Morbidity and Treatment Patterns. DHS Comparative Reports No. 8. Calverton, Maryland: ORC Macro, 2004.
12. Biswas A, Biswas R, Dutta K, Manna B; Risk factors of Acute respiratory infections in underfives of urban slum community. Indian J Pub Hlth, 43; 1999: 73-75.
13. Sundar R, Mahal A, Sharma A ; The Burden of ill health among the urban poor: The case of slums and resettlement colonies in Chennai and Delhi. NCAE, 25; 2002: 38-84.

14. Prajapati B , Talsania N, Sonaliya K N ; A study on prevalence of acute respiratory tract infections(ari) in under five children in urban and rural communities of Ahmedabad district, Gujarat, Nat. Jour. of Com. med., 2 ( 2 ); 2011 : 255-59.

15. Deshmukh PR, Dongre AR, Sinha N,. Garg BS ; Acute childhood morbidities in rural wardha: some epidemiological correlates and health care seeking ,Indian J Med Sci, 63( 8); 2009 : PP 345-54

16. K. Park ; (2019): Text Book of Preventive and Social Medicine ; 25th edition; Bhanot publisher ; Jabalpur; pp 22-475

17. UNICEF;Breastfeeding[http://www.unicef.org/nutrition/index\\_24824.html](http://www.unicef.org/nutrition/index_24824.html) Accessed on 20/09/12

18. Ranjan R and Paswan B ; Child Morbidity and Breastfeeding Status in India : pp 3-8.

19. Mhlanga M , Zvinavashe M , Gwanzura L ,Pedersen B; Factors associated with child morbidity amongst children 0-59 months in Mashonaland East, Zimbabwe: An Analytical cross sectional study. Jour. of Dental and Medical Sciences ,17( 1 ); (2018), PP 81-86.

20. MOHFW; India\_report\_DLHS-4 MOHFW,New Delhi Accessed on 30/08/19

21. Hashi, A., Kumie, A. and Gasana, J. (2016): Prevalence of Diarrhoea and Associated Factors among Under Five Children in Jigjiga District, Somali Region, Eastern Ethiopia. Open Jour. of Preventive Medicine, 6, pp 233-24

**Tables**

**TABLE 1 DISTRIBUTION OF FORTNIGHTLY INCIDENCE OF MORBIDITY IN UNDER FIVE YEAR CHILDREN (\*MULTIPLE RESPONSE)**

Morbidity	Number of children with morbidity*	Fortnightly incidence
ARI	139	34.8
Diarrhea	99	24.8
Dysentery	14	3.5
Fever	62	15.5
Skin infection	19	4.8
Viral hepatitis	1	0.3
Accident	49	12.3
Measles	3	0.8
Other	5	1.3
Base	400	

**TABLE 2 FORTNIGHTLY INCIDENCE OF MORBIDITY ACCORDING TO AGE AND SEX**

Age group	Male		Female		Both sexes					
	Total	Morbidity	Total	Morbidity	Total	Morbidity		Total	Morbidity	
		No				%	No		%	No
0-11m	39	30	76.9	37	22	59.5	76	52	68.4	
12-23m	61	39	63.9	49	38	77.6	110	77	70.0	
24-35m	62	38	61.3	31	21	67.7	93	59	63.4	
36-47m	25	12	48.0	25	16	64.0	50	28	56.0	
48m-59m	37	25	67.6	24	20	80.0	71	45	63.4	
Total	224	144	64.3	176	117	66.5	400	261	65.3	

$\chi^2 (age) = 2=3.562; df=4; P>0.05, \chi^2 (sex) = 2=0.209; df=1; P>0.05$

Caste	Total children studied		Children with morbidity	
	Number	Percentage (%)	Number	Percentage (%)
General	204	51.0	124	60.8
OBC	103	25.8	70	67.9
SC	93	23.2	67	72.0
Total	400	100.0	261	65.3

$\chi^2=4.021; df=2; p>0.05$

Social class				
Upper	13	3.3	5	38.5
Upper Middle	216	54.0	125	57.9
Lower Middle	138	34.5	101	73.2
Upper Lower	33	8.2	30	90.9
Total	400	100.0	261	65.3

$\chi^2=22.720; df=3; p< 0.001$

Type of family				
----------------	--	--	--	--



Nuclear	224	56.0	152	67.9
Joint / Extended	176	44.0	109	61.9
Total	400	100.0	261	65.3
$\chi^2=1.526; df=1; p > 0.05$				
Mother's literacy status				
Illiterate and just-literate	50	12.5	36	72.0
1 – 10 years of schooling	139	34.8	98	70.5
Above 10th	211	52.8	127	60.2
Total	400	100.0	261	65.3
$\chi^2=5.080; df=2; p > 0.05$				

**TABLE 3 CHILD REARING PRACTICES AND MORBIDITY**

Breast feeding	Total children studied		Children with morbidity	
	Number	Percentage (%)	Number	Percentage (%)
Breastfed	379	94.8	242	63.9
Not breastfed	21	5.2	19	90.5
Total	400	100.0	261	65.3
$\chi^2=6.220; df=1; p < 0.05$				
Time of initiation of Breastfeeding				
Within ½-1 hour	50(13.2)		16	32.0
1-24 hour	59(15.6)		36	61.0
>24 hour	270(71.2)		190	70.4
Total	379		242	63.9
$\chi^2=27.153; df= 2; p < 0.001$				
Exclusive Breastfeeding				
Yes	58	14.5	19	32.8
No	342	85.5	242	70.8
Total	400	100.0	261	65.3
$\chi^2=31.584; df=1; p < 0.001$				
Complementary feeding				
a) < 6 months	103	26.8	65	63.1
b) at 6 months	120	31.3	70	58.3
c ) >6 month	161	41.9	116	72.0
Total	384*	100.0	251	65.3
$\chi^2=6.031; df=2; p < 0.05$				
Hand washing practices of mother				
Yes	229	57.2	128	55.9
No	171	42.8	133	77.8
Total	400	100.0	261	65.3
$\chi^2=20.674; df=1; p < 0.001$				