

Original Research Article

A cross-sectional study to assess the socio-demographic and morbidity profile among under-five children in a resettlement colony of Bihar

Navin Kumar¹, Ravi Ranjan Jha², Animesh Gupta^{1*}

¹Department of Community Medicine, Narayan Medical College and Hospital, Bihar, India

²Department of Community Medicine, Shahid Nirmal Mahto Medical College, Jharkhand, India

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*Correspondence:

Dr. Animesh Gupta,

E-mail: dranimeshgupta1@gmail.com

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ABSTRACT

Background: The development of our society and the world largely depends on the health of the children in their first five years. These first five years lay down the foundation of their future mental and physical health. India has the largest number of children in the world. India also contributes to more than 20% of the child deaths in the world. children who are born in rural areas, poor household or illiterate families, are at major risk of dying before turning six years of age. Aim was to assess the health risk profile of under-five children and to find out its relation with socio-demographic, nutritional, cultural health care practices and other factors.

Methods: This was a community based cross-sectional study, carried out from January, 2019 till July, 2019 in a resettlement colony of Rohtas district, Sasaram, Bihar. The study population comprised of all the under-five children. The study tools used for data collection included a semi-structured proforma and clinical anthropometric examination.

Results: When presence of morbidity was seen among male and female children, it was more (71%) in males as compared to 58% in female children. The difference in the two groups was found to be statistically significant. ($p=0.05$). Respiratory system was most commonly involved (68.4%).

Conclusions: There is high proportion of under nutrition and other morbidities among under five children in our country. Special focus needs to be put in resettlement colonies, as these residential colonies remain neglected.

Keywords: Health risk profile, Morbidity, Under 5 children

INTRODUCTION

The development of our society and the world largely depends on the health of the children in their first five years. These first five years lay down the foundation of their future mental and physical health. Hence, children are considered as the most priority group in terms of morbidity and mortality. Their vulnerability is a result of possession of special characteristics like growth and development and within these groups certain children are at higher risk of disease or complications because of some factors in their biological make up, their environment, or both. Such characters known as “risk factors” which can be causative, contributory, predictive and may exert their effects both singly or in combination, the relative importance of each varies with the individual and socio-

ecological conditions and so the equitable provision of health care to all and special attention is required for those who are “at risk” of morbidity and mortality. The health status of children is highly reliable index of nation's health and is the most precious asset of a country. No country can afford to neglect the rights and health needs of a child. Out of around 2 billion children of the world, estimates by UNICEF suggested that 1.9 billion lived in developing world; one billion of it lived in poverty and deprived of the major seven amenities considered to be basic rights as health care, food, water, shelter, sanitation, information and schooling.¹

Furthermore, children who are born in rural areas, poor household or illiterate families, are at major risk of dying before turning six years of age.

Worldwide 6.6 million under five children died in recent years and more than half of them were early childhood deaths, due to conditions like preterm birth and its complications, birth asphyxia, pneumonia, diarrhoea, malaria, etc., out of which, acute respiratory infection and diarrheal diseases are the major infective causes of morbidity and mortality. Among WHO regions, Africa and South East Asia account for seventy percent of all under five deaths. About half of under-five deaths occur in only five countries and India is among one of them.²

India has the largest number of children in the world, and contributes 20% of the 0-4 years' child population of the world; not only in population, India also contributes to more than 20% of the child deaths in the world.³ Thus this community based study is an attempt to assess the health risk profile of under-five children and to find out its relation with socio-demographic, nutritional, cultural health care practices and other factors. And it is expected that the results of this study will be useful in determining the type on intervention programmes that can be put in place to alleviate the myriad health problems in resettlement colony, with particular reference to under-five children.

METHODS

This was a community based cross-sectional study, carried out from January, 2019 to July, 2019 in a resettlement colony of Rohtas district, Sasaram, Bihar. The study population comprised of all the under-five children (0-59 months) residing in the resettlement colony. The total population of the colony was 25754 (2011). Total number of under five children was estimated to be around 3013 (11.7% of the total estimated population).⁴

Considering the lowest prevalence of ARI⁵ i.e., 16% the sample size was calculated (having power of 90%, CI of 95%, design effect of 1.5 for systematic random sampling and 10% of non-response) to be 340 using EPI INFO version 7.

A total of 413 children were surveyed (obtained from covering 10% of houses of all blocks) from all the blocks. In each block, first house was randomly picked; thereafter every ninth house (systematic random sampling) was included in the sample till the entire block was completed.

The household was the sampling unit and the under five children was study unit. Mother/caretaker were interviewed for the recording of child details.

The study tools used for data collection included a semi-structured proforma and clinical anthropometric examination. Collected data was transformed into variables, coded and entered into SPSS statistical software. The data was analyzed using SPSS version 21.

RESULTS

Among 413 under five children studied, 228 (55.3%) were males and 185 (44.7%) were females. Highest proportion of study subjects (22.3%) belonged to the age group of 0-11 months [54 (13.1%) was in 0-6 months and 38 (9.2%) in 7-11 months of age] followed by 12-23 months (21.3%), 36-47 months (20.1%) and 24-35 months (18.9%) and 48-59 months (17.4%).

Table 1: Distribution of children according to their Socio-demographic characteristics. (n=413).

Socio-demographic characteristics	Frequency	Percentage
Religion		
Hindu	330	79.9
Sikh	55	13.3
Muslim	23	5.6
Christian	5	1.2
Socio-economic status of the family		
Upper	5	1.2
Upper middle	60	14.5
Lower middle	136	32.9
Upper lower	206	51.4
Lower	6	1.9
Type of family		
Nuclear	206	49.9
Joint	173	41.9
Three generation	34	8.2
Family size		
One	73	17.7
Two	143	34.6
Three or more	197	47.7

Table 2: Pattern (type) of morbidity among under five children (n=413).

Type of morbidity	Frequency	Percentage
Acute	279	67.6
Recurrent**	224	54.2
Sub-acute	83	20.1
Chronic	32	7.7
No morbidity	19	4.6
Type of morbidity with age	$\chi^2=84.7$, df=12, p<0.001	
Type of morbidity with sex	$\chi^2=1.9$, df=3, p>0.05	

As seen in Table 2, more than 50% of the children suffered from acute morbidities. The presence of morbidity was seen more in male children (71%) as compared to and female children (58%), it was more (71%) in males as compared to 58% in female children, which was found to be statistically significant (p=0.05). Respiratory system was most commonly involved (68.4%) followed by GIT (23.8 %), others (12.6%) and skin (8.9%) in past 2 weeks. Congenital anomalies were

found in 2 (0.9%) children (included 1 child with Down's syndrome and another with hearing and speech disability). Majority (80.6%) of 48-59 months age group children were undernourished (<-2 SD) followed by 24-35 months (64.2%), 36-47 months (63.9%), 12-23 months (44.3%) and 0-11 months (43.5%).

Table 3 shows practice of timing for initiation of breast feeding in children. In 41.9% children breast feeding was initiated within 1 hour of birth, as recommended. In 42.2% and 15.5% children breast feeding was initiated between 1-24 hour and after 24 hour of birth, respectively.

Table 3: Practice of initiation of breast feeding after birth (n=413).

Initiation of breast feeding (in hours)	No. of children (age in months)					Total (n=413)
	0-11 (n=92)	12-23 (n=88)	24-35 (n=78)	36-47 (n=83)	48-59 (n=72)	
<1	41 (44.6)	35 (39.8)	30 (38.5)	40 (48.2)	27 (37.5)	173 (41.9)
1-24	34 (37.0)	41 (46.6)	30 (38.5)	33 (39.8)	36 (50)	174 (42.1)
>24	17 (18.4)	10 (11.4)	18 (23.0)	10 (12.0)	9 (12.5)	64 (15.5)
Never breast fed	0	2 (2.2)	0	0	0	2 (0.5)

DISCUSSION

In the current study, the children in all age groups were almost equal in proportion. Bhandari et al in their study reported the distribution of children in 0-11, 12-23, 24-35, 36-47 and 48-59 months age groups were 13%, 22.7%, 21.3%, 23.3% and 19.7% respectively.⁶ Singh et al in their study reported the distribution of children in 0-11, 12-23, 24-35, 36-47 and 48-59 months age groups were 19.7%, 17.7%, 16.9%, 24.1% and 21.5% respectively.⁷ The proportion of male and female children was more or less same when compared to studies done by Srivastava et al (males-52.9% and females- 47.1%), Dey et al (males-51.1% and females- 48.9%) and Wadgave (males- 56.7% and females- 43.3%).⁸⁻¹⁰ In the current study majority (80%) of children were Hindus followed by Sikhs (13.3%), Muslims (5.6%) and Christian (1.2%). Census done by Ministry of Home Affairs, India; the percentage of Hindu, Muslim, Sikh and Christian was 82%, 11.7%, 4% and 1.2%, respectively.¹¹ In our study, nearly half (49.9%) of the children belonged to nuclear families and the rest to joint families. Similar findings were reported by Dey et al in their study.⁸

The overall prevalence of morbidity in our study population was 65.1%. It was higher in males 71% as compared to 58% in female children. In the study conducted by Taffa et al among 3015 under five children, 999 (33.1%) were reported to have been sick within 2 weeks before the survey, more in males (52%) as compared to females (48%) and most commonly reported morbidity was of respiratory system (63.8%) followed by GIT (47.6%).¹¹ In most of the studies more or less similar proportion of morbidity was found (63.8% to 67.5%) except the prevalence varied for Taffa et al (33.1%) and for Wadgave et al it was 84.8%.^{10,11} In the present study 66.5% of children were malnourished and the finding is similar to the study done by Jyothi et al who observed that overall, 64% of children were malnourished.¹² In this study 37% of children aged 0-6 months were on breast feeding. In the study done by Nayak approximately one

third of children were exclusively breast fed for 6 month or more, 34.7% were given prelacteal feed and most common feed was sugar water; while in study conducted by Chawada et al in 67 children of <36 months age only 11% could practice exclusive breast-feeding for 6 months.^{13,14}

CONCLUSION

There is high proportion of under nutrition and other morbidities among under five children in our country. Special focus needs to be put in resettlement colonies, as these residential colonies remain neglected.

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Conflict of interest: None declared

Ethical approval: The study was approved by the Institutional Ethics Committee

REFERENCES

- Sharma S, Gupta BP. Prevalence of 'at risk' under-five children in rural area. *Indian J Community Med*. 2005;30(1):30.
- Children: reducing mortality. Fact sheet N°178. Available from: <http://www.who.int/mediacentre/factsheets/fs178/en/>. Accessed on 4 March 2019.
- UNICEF. Committing to Child Survival: A Promise Renewed Progress Report (2013). Available from: https://www.unicef.org/media/files/UNICEF_2013_A_Promise_Renewed_Second_Progress_Report_Full_Report.pdf. Accessed on 4 March 2019.
- Ministry of home affairs. Office of Registrar General and Census Commissioner, India. Census 2011. Available from: <https://censusindia.gov.in/>. Accessed on 4 March 2019.
- Grover VL, Chhabra P, Malik S, Kannan AT. Pattern of morbidity and mortality amongst under-fives in urban resettlement colony of East Delhi. *Indian J Prev Soc Med*. 2004;35:22-8.
- Bhandari D, Choudhary SK. An epidemiological study of health and nutritional status of under five

- children in semi-urban community of Gujarat. *Indian J Public Health*. 2006;50(4):213-9.
7. Singh NH, Devi S, Singh M. Study on morbidity among under-five children of a rural area of Manipur, Thanga: a cross-sectional study. *J Evol Med Dent Sci*. 2013;2(16):2643-7.
 8. Srivastava DK, Tripathi D, Gour N, Jain PK, Singh CM, Srivastava AK, et al. Morbidity profile of under five children in urban slums of Ethawah district. *Indian J Community Health*. 2012;24(2):153-7.
 9. Dey I, Chaudhuri RN. Acute childhood illnesses and health seeking behavior among under five children in a village of Hooghly district, West Bengal. *Int J Med Public Health*. 2012;2(2):15-7.
 10. Wadgave HV. Burden of health morbidities in under-fives in urban slum areas. *J NTR Univ Health Sci*. 2013;2(2):96-101.
 11. Taffa N, Chepngeno G. Determinants of health care seeking for childhood illnesses in Nairobi slums. *Trop Med Int Health*. 2005;10(3):240-5.
 12. Jyothi B, Shakuntala BS. A comparative study on health status of under five children in ICDS and Non-ICDS areas in Konanakunte, South Bangalore. RG University of Health Sciences, Bangalore, Karnataka; 2006.
 13. Nayak R. Assessment of nutritional status of under-five children residing in rural area- a cross sectional study. KLE University, Karnataka. 2013.
 14. Chawada BL, Modi A, Kantharia SL, Rao S, Kosambiya JK. Exploring health status and care practices among children of female workers in unorganized sector. *Int J Med Public Health*. 2013;3:38-43.

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