

**SOCIO-DEMOGRAPHIC PROFILE OF ACUTE RESPIRATORY INFECTIONS
AMONGS UNDER FIVE CHILDREN IN SLUM POPULATION OF MEERUT.**Arun Kumar[#], Sanjeev Kumar*, Chhaya Mittal* and Ratandeep Lamba**Associate Professor,[#] Assistant Professor* Lecturer**, Department of Community Medicine LLRM Medical College Meerut.***Author for Correspondence: Dr. Arun Kumar**

Associate Professor, Department of Community Medicine LLRM Medical College Meerut.

Article Received on 14/01/2016

Article Revised on 05/02/2016

Article Accepted on 26/02/2016

ABSTRACT

Research Question: what is the fortnightly ARI incidence under five children's in slum Meerut?. **Objective:** to find out socio-demographic profile of ARI under five children's. **Study design:** cross sectional study. **Statistical analysis:** chi-square test. **Results:** the overall fortnightly ARI incidence in under five children's were 59.4%. Majority of the ARI incidence were more in Muslim religion 66.2% as caparison to Hindu's children's 51.1% and more in lower socioeconomic class 72.8%.

KEY WORDS: ARI, Chi squire, fortnightly Incidence, Socio-economic status.**INTRODUCTION**

Every year 12 million children in developing countries die in first year of life. Acute Respiratory Infection (ARI) are responsible for 19% these deaths.^[1] In India Urban population with concomitant growth of population residing in slum has resulted over stemming of infrastructure and deterioration in public health.^[2] In India acute respiratory infection occur more frequently than any other illness including diarrhea. Majority of ARI episode are self limiting infections of viral origin such as cough or cold.

As we planning to achieve "Millennium Development Goals by 2015 A.D to reduced under- five mortality by two – thirds" a control of ARI has assumed a greater importance. At present most of the research in to child health problems is concentrated on rural area and more work is needed in urban slums if the health problems of the future are to be successfully confronted.^[3] Keeping in the view in the above factors the present study was carried out with the aims to study the socio-demographic correlates of ARI among the under five children in Meerut slums.

MATERIAL AND METHODS

the present cross-sectional study was conducted among the under five children belonging to the slum population of Meerut city through WHO's standard 30 cluster sampling technique. Sample size for estimating the incidence was obtained from WHO's sampling size determination ready Reckoner.^[4] Taking the confidence level of 95% with relative precision of 5%, the sample size came to be 1537 children. Taking 5% non response a minimum of 1651 children were covered in the study. 30

clusters were drawn out of 96 slums areas in probability proportion to size. 55 children 0-59 months of age will be covered in each of the cluster, final sample consist of 1650 children in 30 clusters.

Data was collected on predesigned and pretested schedule through house to house visit starting from random house by interviewing mother/other responsible member of the household for ARI morbidity (by two week recall period) and supplemented with anthropometric measurement and general examination of the children.

RESULTS

Of total 1651 children covered in present study 877 (53.1%) males & 774 (46.9%) were females an under five giving a sex ratio of 822.

In all 981 children were found to have an episode of ARI during last 15 days accounting for the fortnightly incidence of 59.4%. The incidence was significantly higher in children above 2 months of age (60.3%) than children below 2 months of age (26.7%). The ARI incidence was found to be statistically more in male children (61.8%) than female children (56.7%) as shown in table 1.

Religion and cast wise distribution of ARI cases was shown in table-2 revealed a significantly higher incidence of ARI ($p < 0.001$) among the children belongs to Muslims religion (66.2%) as compared to Hindu religion (51.5%). It may further be seen from the table-2 that statistically significant difference was found in incidence of ARI in under five children belongs to

different cast in Hindus as the incidence of ARI was much higher in scheduled caste children (62.5%) as against 29.8% among the children of Savaran caste Hindus as shown in table -2.

The ARI incidence was apparently more in joint families 60.3% than nuclear families 58.8% yet the difference was not found to be statistically significant ($p > 0.05$).

However incidence of ARI was found to be increase with increase in family size ($p < 0.01$) as shown in table-3.

It is evident from the table-4 that the incidence of ARI among under five children was minimum in upper middle socio-economic class (39.2%) and maximum in lower class (72.8%). This difference in ARI incidence in relation to socio-economic class was found to be statistically significant ($p < 0.001$).

Table 1: ARI in relation to age and sex of children

Age in months	Male children		Female children		Total	
	Total	ARI cases	Total	ARI cases	Total	ARI cases
Below 2	25 (2.9%)	7 (28.0%)	20 (2.6%)	5 (25.0%)	45 (2.7%)	12 (26.7%)
2-11	131 (14.9%)	82 (62.6%)	106 (13.7%)	61 (57.5%)	237 (14.4%)	143 (60.3%)
12-59	721 (82.2%)	453 (62.8%)	648 (83.7%)	373 (57.6%)	1369 (82.9%)	826 (60.3%)
Total	877 (53.1%)	542 (61.8%)	774 (46.9%)	439 (56.7%)	1651 (100.0%)	981 (59.4%)

$$\chi^2_{(1)} (\text{sex}) = 4.38 (p < 0.05)$$

$$\chi^2_{(2)} (\text{age}) = 20.44 (p < 0.001)$$

Table-2: Religion and cast wise distribution of children and ARI cases

Religion and cast	Total children		ARI cases	
	No.	%	No.	%
Total Hindus	763	46.2	393	51.5
OBC	327	42.8	186	56.9
SC	235	30.0	147	62.5
Savaran	201	26.4	60	29.8
Muslims	888	53.8	588	66.2
Total	1651	100.0	981	59.4

$$\chi^2_{(2)} (\text{Hindu caste}) = 53.25 (p < 0.001) \quad \chi^2_{(1)} (\text{religion}) = 34.81 (p < 0.001)$$

Table-3: ARI in relation to family composition

Family composition	Total children	ARI cases		χ^2	P value
		No.	%		
Type of family					
Nuclear	1008	593	58.8	0.36	>0.05
Joint	643	388	60.3		
Family size					
≤4	14	3	21.4	8.41	<0.01
5-8	1581	941	59.5		
≥9	56	37	66.1		
Base	1651	981	59.4		

Table-4: Distribution of children and ARI cases according to socio-economic status of the family

Socio-economic status	Total children		ARI cases	
	No.	%	No.	%
Upper class	-	-	-	-
Upper middle	261	15.8	102	39.1
Lower middle	498	30.2	316	63.4
Upper lower	682	41.3	410	60.1
Lower	210	12.7	153	72.8
total	1651	100.0	981	59.4

$$*\text{Modified Kuppaswamy's S.E Scale} \quad \chi^2_{(3)} = 67.53 (p < 0.001)$$

DISCUSSION

In the present study incidence of ARI (26.7%) was much lower below 2 months of age in comparison to 60.3% among children among children 2-59 months of age. The lower ARI incidence in below 2 months may probably be

related to the protection offered by breast feeding and presence of maternal antibodies. These finding are similarly with finding of Verma et al (1981)^[5] tyasi et al (1990)^[6] chabra et al (1993)^[7] kaushik (1993)^[8] Bano (1996).^[9] In the present study a significant difference in

the incidence of ARI was observed in males (61.8%) and in female children (56.7%). Dayal et al (1962)^[10] narien et al (1988)^[11] Roy et al (1991)^[12] also reported a higher incidence of ARI in males than females, ratio being 3:1, 1.7:1, and 1.4:1 respectively, where a finding of Wallia et al (1985)^[13] and Bano (1996)^[9] did not find significant difference in the incidence of ARI in two sexes.

ARI incidence were found to be lowest in Savaran Hindus (29.8%) increased to 56.9% in OBC and highest in scheduled caste 62.8% and ARI incidence religion wise was higher in Muslims (66.2%) than Hindus (51.5%). Similar finding were observed by kaushik (1993)^[8] and Bano (1996)^[9] in urban population of Meerut.

In the present study, a non significant difference in ARI incidence was observed in the children belonging to joint family (60.3%) and children of nuclear families (58.8%) where as kaushik (1993)^[8] found a higher incidence of ARI in joint families while Bano (1996)^[9] found higher incidence of ARI in nuclear families (58.0%) than children of joint families (45.9%).

The incidence of ARI was found to increase in families with increase in family size i.e. 21.4%, 59.5% and 66.1% in children living in families, having ≤ 4 member, 5-8 member and ≥ 9 member respectively. Kumar et al (1983)^[14] also found higher attack rate of ARI in children belonging to large families (3.9 episodes per child per year) than children belonging to small families (2.4 episodes per child per year). Kaushik (1993)^[8] also reported that incidence of ARI increase with increase in the family size.

The ARI incidence in present study was maximum in lower class (72.8%) with gradual decline with the improvement with in socio-economic status being minimum in upper middle class (39.1%). These findings are approximate with those of Datta (1967),^[15] Vasudeva (1983)^[16], Kaushik (1993),^[8] and Bano (1996).^[9]

REFERENCE

1. WHO & UNICEF management of childhood illness in developing countries: Rationale for an integrated strategy WHO/CHS/CAH/98.1A.
2. Awasthis S, Agarwal S, journal Indian pediatrics. Environment health project special article series, Dec. 17, 2003; (40).
3. Dharavi project, an investigation in to patterns of infant feeding and malnutrition in the urban slum of Dharavi in Bombay, journal of tropical pediatrics vol. (33) supplement 2. 1985.
4. Lwanga S.K and lemeshow S. sample size determination in health studies, a practical manual WHO Genera 1991.
5. Verma, I.C. and Menon. Epidemiology of acute respiratory diseases in North India. Ind. Jr. ped., 1981; 48: 37-40.
6. Typasi, T.E., Lillian, E., de Leon, Cleotide, U. Community based studies of acute respiratory infection in younger children in Metro, Manila. Journal of Infe. Dis. 12: 1990 (Nov-Dec).
7. Chabra P, Garg S, Mittal SK. Risk factors for acute respiratory infections in under-five in a rural community. Ind. Jr. maternal child health. 1997; 13-07.
8. Kaushik, P.V. A socio-clinical study of acute respiratory infections among under-five children in rural area of district Meerut. Thesis submitted to Meerut university to MD (SPM),1993.
9. Bano tanveer; an epidemiological study of acute respiratory infection among under-five children in an urban population Meerut. Thesis submitted to C.C.S University, Meerut for MD (SPM), 1996.
10. Dayal, R.S., Prashad, Mathur. Mortality and morbidity pattern. Ind. jr. child health, 1962; 11: 608-616.
11. Narain, J.P, Banerjee, ARI in Indian public health significance and epidemiology, NICD, Delhi 1998.
12. Roy P, Sen P.K, Das K.B, Chakraborty A.K. Acute respiratory infections in children admitted in a hospital of Calcutta. Indian J public health., 1991 July - Sep; 35 (3): 67-70.
13. Walia, B.N.S., Grambhir, S.K. Singhi, S., Sora, S.R. Socioeconomic and etiologic correlates of acute respiratory infections in preschool children. Ind. Paed. 1988; 25: 607-612.
14. Kumar and kumar L., Acute respiratory infections in childrens. Ind. Paed , 20,1983.
15. Data – Banik, N.D Kirshna, R., Mane, S.I.S., Raj, Longitudinal study on morbidity and mortility pattern of children in Delhi during the first two years of life: a review of 1000 children. Ind. J. Med Res., 1967; 55: 504-512.
16. Vasudev, J.P. et al. post measles complication in rural population. Ind. J. of comm., dis., 1983; 15: 149-292.