An appraisal of ARI among under-five children in an urban slum area

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Abstract: *Every year ARI in young children is responsible for an estimated 3.9 million deaths worldwide. It is estimated that Bangladesh, India Indonesia and Nepal together account for 40 per cent of the global ARI mortality about 90 percent of the ARI deaths are due to pneumonia, which is usually bacterial in origin. The present study was carried out to study the prevalence of ARI among under-five, and to study risk factors associated with ARI. The study was conducted in urban slum area among 157 under five children for a period of four weeks. The prevalence of ARI was found to be 22.8%. It was associated with illiteracy of mother and father, lower social class. But it was not found to be associated with overcrowding and cross ventilation.*

Keywords: ARI, under five children, urban slum area.

1. Introduction

Infections of the respiratory tract are perhaps the most common human ailment. While they are a source of discomfort, disability and loss of time for most adults, they are a substantial cause of morbidity and mortality in young children and the elderly. Many of these infections run their natural course in older children and in adults without specific treatment and without complications. However, in young infants, small children and in the elderly, or in persons with impaired respiratory tract reserves, it increases the morbidity and mortality rates.

Every year ARI in young children is responsible for an estimated 3.9 million deaths worldwide. It is estimated that Bangladesh, India Indonesia and Nepal together account for 40 per cent of the global ARI mortality about 90 percent of the ARI deaths are due to pneumonia, which is usually bacterial in origin. The incidence of ARI is similar in developed and developing countries. However, while the incidence of pneumonia in developed countries may be as low as 3-4 per cent, its incidence in developing countries range between 20 to 30 per cent. This difference is due to high prevalence of malnutrition, low birth weight and indoor air pollution in developing countries. [1]

2. Aims and Objectives:

1. To study the prevalence of ARI among under-five.
2. To study risk factors associated with ARI.
3. To recommend preventive methods.

3. Material & Methods:

The study was conducted in urban slum area, which is a field practicing area of Urban Health Training Centre. The study was conducted for four weeks. It was a community based cross sectional study. A total of 157 under five children were examined. During door-to-door survey, a complete history and physical examination was carried out as per pre-tested, pre-structured pro-forma. Socio-Economic Status (SES) of an individual was determined as per BG prasads method of socio-Economic status classification. [2] Immunization status was confirmed by actually seeing the immunization cards. Overcrowding was classified based on the total number of persons per room.

4. Results And Discussion:

Table 1: Distribution of study subjects as per the classification of ARI

Grades	Male		Females		Total	
	No	%	No	%	No	%
Normal	68	43.31	54	34.40	122	77.70
No pneumonia (cold & cough)	21	13.37	13	8.28	34	21.65
Pneumonia	1	0.63	-	-	1	0.63
Severe pneumonia	-	-	-	-	-	-
Very severe pneumonia	-	-	-	-	-	-
Total	90	57.32	67	42.68	157	100

It is observed that the ARI was present in 22.8% of children while remaining children were normal. In our survey no child was found to have severe & very severe pneumonia.

Table 2: Association between Educational status of mother & ARI in children:

Educational status of mother	ARI				Total	
	Present		Absent			
	No.	%	No.	%	No	%
Illiterate	7	25.9	20	74.1	27	100
Literate	28	21.5	101	78.5	130	100
Total	35		122		157	

$X^2 = 0.226$, df =1, p > 0.05

From the above table it is seen that the prevalence of ARI is more among children of illiterate mothers (25.9%) as compared to children of literate mothers (21.5%)

Table 3: Association between Educational status of Father & ARI in children:

Educational status of father	ARI				Total	
	Present		Absent			
	No.	%	No.	%	No	%
Illiterate	10	24.3	31	75.7	91	100
Literate	25	21.5	91	78.5	116	100
Total	35		122		157	

$X^2 = 0.06$, df =1, p > 0.05

From the above table it is seen that the prevalence of ARI is more among children of illiterate fathers (24.3%) as compared to children of literate mothers (21.5%)

Table 4: Association between Socio Economic Status (SES) and ARI in children:

S.E.S	ARI				Total	
	Present		Absent			
	No.	%	No.	%	No	%
Upper –I	5	3.184	5	3.184	10	6.368
Upper-lower-II	7	4.45	26	16.56	33	21.01
Middle upper-III	4	2.54	18	11.46	22	14
Middle lower-IV	14	8.91	47	29.93	61	38.84
Lower-V	5	3.18	26	16.56	31	19.74
Total	35	22.264	122	77.694	157	100

$X^2 =4.73$, df=1, p < 0.05 (class I vs. other classes)

It is observed from the table that the ARI was present in 14 (8.91%) children belonging to Upper-Lower class and only 5 (3.9%) children belonging to Upper Class.

Padmaja Kanchi and M.M. Kakeri [3] reported similar findings. In their study they observed that the prevalence of ARI were more common in children belonging to lower socio economic status. A total of 176 children suffering from ARI were examined where 92 (52.26%) were belonging to lower socio-economic class.

Table 5: Association between overcrowding & ARI in children:

Overcrowding	ARI				Total	
	Present		Absent			
	No.	%	No.	%	No	%
Present	16	19.05	68	80.95	84	100
Absent	19	26.03	54	73.97	73	100
Total	35		122		157	

$X^2=1.09$, df=1, p > 0.05

It is observed from the table the ARI was present in 16 (19.05%) children where overcrowding was present and 19 (26.03%) children where overcrowding was absent.

Table 6: Association between cross ventilation and ARI

Cross ventilation	ARI				Total	
	Present		Absent			
	No.	%	No.	%	No	%
Present	19	26.03	54	73.97	73	100
Absent	16	19.05	68	80.95	84	100
Total	35		122		157	

$X^2=1.09$, df=1, p > 0.05

It is observed from the table the ARI was present in 19 (26.03%) children where cross ventilation was present and 16 (19.05%) children where cross ventilation was absent.

Table 7: Association Between indoors smoke pollution & ARI in children

Over crowding	ARI				Total	
	Present		Absent			
	No.	%	No.	%	No	%
Present	26	32.5	54	67.5	80	100
Absent	9	11.69	68	88.3	77	100
Total	35		122		157	

$X^2=18.65$, df=1, p < 0.05

It is observed from the table that ARI was prevalent in 26 (32.5%) children where Indoor smoke pollution was present, while only 9 (11.69%) children and ARI where Indoor smoke pollution was absent.

5. Summary and Conclusion:

A study on prevalence of ARI was carried out in urban slum area. Study revealed a prevalence of ARI as 22.28%. It was observed that Acute Respiratory tract Infection was more common in children belonging to the lower socio-economic group. Acute Respiratory tract infections were more common in children of illiterate parents. Acute Respiratory tract infections were more common in children who were exposed to indoor air pollution. Cough, cold and fever were the common symptoms. ARI was not found to be associated with over crowding and cross ventilation. This may be because ARI is a fast spreading communicable disease having seasonal variation. The study was carried out during the month of September. From above findings it is clear that there is a role of parent education, socio-economic status and indoor air pollution in addition to seasonal factors. Hence, there is a need to improve these modifiable risk facts for prevention of ARI. ARI is a disease having very bad prognosis if ignored. Fortunately in our study we could not find any cases of severe pneumonia. This reflects an impression that community is aware regarding prompt treatment of ARI at its first symptom.

References:

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