CHAPTER 4

RESULTS

A total of 360 subjects were studied in this investigation who fulfilled the eligibility criteria of the study. Of them 180 were severe cases and 180 were non severe controls. Results were presented in several tables and text according to different categories of variables. When stratification was done, mostly the arrangements presented in published literatures or natural grouping were followed. Through the presentation, in all the tables 'S' and 'NS' was meant by significant and not significant respectively. Asterix (*) was given to represent the degree of significance, $P < .01$ as highly significant and $P = .01-.05$ as significant.

4.1. Demographic variables

A). Age and sex: There was no significant ($P = 0.058$) difference between cases and controls in respect of gender, but they differed in respect of age. Ten subjects in cases and only one in controls were within 1 months of age. Seventy nine percent cases were below 1 year, while 69.4 % were in control group. Tables 4.1 and 4.2 showed the distribution of demographic variables.

Table 4.1
Distribution of demographic variables

Variables	Case(N=180)	Control(N=180)	P value
1. Gender			
Male(%)	118(65.6)	112(62.2)	
Female(%)	62(34.4)	68(37.8)	0.58
Male:Female	1.90 : 1	1.65 : 1	
2. Age			
Mean±S.D	8.15±7.61	11.20±8.53	0.00

On univariate analysis the crude odds ratio for all strata was 1.34 with 95% C.I. was 0.62-3.62 and was not significant statistically. But when analyzed stratawise only age ≤ 1 month showed a high odds ratio, although without significant confidence interval. Similarly gender had also no significant result. Table 4.2 summarized the univariate results.

Table 4.2
Univariate result of Age and Sex

Variables	Case(%)	Ctrl(%)	OR	95% C.I.	*Interpt*
Age in *months*					
36-59	3(01.7)	4(02.2)	1.00		
≤ 1	10(05.5)	1(00.5)	13.33	(0.76-488.23)	NS
2-5	73(40.6)	39(21.7)	2.50	(0.44-14.96)	NS
6-11	59(32.8)	85(47.2)	0.93	(0.17-5.44)	NS
12-23	29(16.1)	39(21.7)	0.99	(0.17-6.15)	NS
24-35	6(03.3)	12(6.7)	0.67	(0.08-5.55)	NS
< 36	177(97.3)	176(96.8)	1.34	(0.67-3.62)	NS
Gender					
Male	118(64.9)	112(61.6)	1.00		
Female	62(34.1)	68(37.4)	0.87	(0.55-1.37)	NS

NS= Not Significant, Interpt= Interpretation, Ctrl= Control

4.2. Socioeconomic factors

The distribution of socioeconomic variables were shown in table 4.3. More than 45% of mothers were below 20 years in case group, but in control it was 37.7%. In both group 80% of mothers were within 27 years of age. Difference in education level between two group was noted. While 45% of mothers in case group had no education, in control group the figure was 25.6%. Similar difference was recorded in family monthly income. Fifty five percent family in case group had income below 3000 Taka per month (USD 75), in control group it was 44%. On univariate analysis only family income when stratified showed a trend of increased odds ratios, but was not significant statistically. Rest of the variables did not show any significant results. Table 4.3 summerized the results.

Table 4.3
Distribution and univariate results of socioeconomic variables

Variables	Case(%)	Control(%)	OR	95% C.I.	Interpt
Maternal age *in years*					
28+	36(20.0)	35(19.4)	1.00		
14-20	82(45.5)	68(37.7)	1.17	(0.64-2.15)	NS
21-27	62(34.4)	77(42.7)	0.68	(0.42-1.44)	NS
Marital status of mother					
Married	177(98.3)	175(97.2)	1.00		
Widow or Abandoned	3(01.6)	5(02.7)	0.59	(0.11-2.90)	NS
Maternal education *in years*					
10+	8(04.4)	5(02.7)	1.00		
0	80(44.4)	46(25.5)	1.09	(0.29-3.96)	NS
1-5	56(31.1)	69(38.3)	0.51	(0.13-1.84)	NS
6-10	36(20.0)	60(33.3)	0.38	(0.10-1.40)	NS

Table 4.3

Variables	Case(%)	Control(%)	OR	95% C.I.	*Interpt*
Maternal occupation					
House-wife	173(96.1)	170(94.4)	1.00		
Work-outside	7(03.8)	10(05.5)	0.69	(0.23-2.02)	NS
Stay outside home, *in hours*					
< 8	1(00.5)	5(02.7)	1.00		
> 8	6(03.3)	5(02.7)	6.00	(0.38-190.57)	NS
Distance of workplace *in Kms*					
< 3	7(03.8)	8(04.4)	1.00		
> 3	.5	2(01.1)	0.28	(0.03-3.00)	NS
Caretaker (Person)					
Grands	4(02.2)	5(02.7)	1.00		
Others	3(01.6)	3(01.6)	0.80		NS
**Family Income, *in Takas*[$] **					
8100+	14(07.7)	20(11.1)	1.00		
500-3000	99(55.0)	80(44.4)	1.77	(0.79-3.97)	NS
3100-4000	39(21.6)	39(21.6)	1.43	(0.59-3.50)	NS
4100-5000	20(11.1)	27(15.0)	1.06	(0.39-2.85)	NS
5100-8000	8(04.4)	14(07.7)	0.82	(0.23-2.83)	NS
< 8100	166(92.2)	160(88.8)	1.48	(0.97-2.13)	NS

NS= Not Sigificant, Interpt= Interpretation

4.3. Environmental variables

Ten variables were entered in this category. Their distribution were similar among two groups. No mother was recorded as smoker in either groups, and smoker father were almost same 93 and 94 respectively. Similar distribution was noted in the presence of under 5 year children and number of persons sharing the sleeping room with the child. A proxy variable measuring the effect of chilling and dampness exposure was observed to have different distribution. More

[$] Taka, Bangladeshi money. Exchange value with Baht = 1 Baht= 1.6 Taka, 1 USD= 40 Taka.

children in case group used to sleep on earth floor (15.55%) than control group (7.77%). Distribution of environmental variables were shown in table 4.4.

Table 4.4

Distribution of environmental variables

Variables	Case(%)	Control(%)	OR	95% C.I.	Interpt
No. of < 5 children in family					
1	122(67.7)	130(72.2)	1.00		
2	51(28.3)	45(25.0)	1.21	(0.73-1.99)	NS
3+	7(03.8)	5(02.7)	1.49	(0.41-5.58)	NS
> 1	58(32.2)	50(27.7)	1.24	(0.79-1.97)	NS
Sleeping density					
< 2	2(01.1)	3(01.3)	1.00		
3	80(44.4)	95(52.7)	1.26	(0.17-11.11)	NS
4	46(25.5)	53(29.4)	1.30	(0.17-11.73)	NS
5+	52(28.8)	29(16.1)	2.69	(0.34-24.71)	NS
> 2	178(98.8)	177(98.3)	1.51	(0.34-24.71)	NS
Kind of bed used					
Wooden bed	152(84.4)	166(92.2)	1.00		
Earth floor	28(15.5)	14(7.7)	2.18	(1.06-4.55)	S*
Ventilation of bed room					
Good	45(25.0)	53(29.4)	1.00		
Average	67(37.2)	75(41.6)	1.05	(0.61-1.82)	NS
Poor	68(37.7)	52(28.8)	1.54	(0.87-2.73)	NS
Concurrent ARI in family					
No	158(87.7)	149(82.7)	1.00		
Yes	22(12.2)	31(17.2)	0.67	(0.36-1.26)	NS
Smoker in family					
None	87(48.3)	86(47.7)	1.00		
Father	93(51.6)	94(52.2)	0.98	(0.63-1.51)	NS
Location of cooking place					
Distant to Bed room	97(53.8)	106(58.8)	1.00		
Attached to Bed room	41(22.5)	36(20.0)	1.24	(0.71-2.18)	NS
Inside Bed room	42(23.3)	38(21.1)	1.21	(0.70-2.10)	NS

Table 4.4

Variables	Case(%)	Control(%)	OR	95% C.I.	Interpt
Kind of fuel used					
Gas	65(36.1)	105(58.3)	1.00		
Electricity	15(08.3)	12(06.6)	2.02	(0.83-4.95)	NS
Biogas	97(53.8)	56(31.1)	2.80	(1.74-4.51)	S**
Kerosine	3(01.6)	7(03.8)	0.69	(0.14-3.12)	NS
Smoke outlet from cooking place					
Present	149(82.7)	166(92.2)	1.00		
Absent	31(17.2)	14(07.7)	2.47	(1.21-5.09)	S**
Window opposite cooking place					
Present	133(73.8)	113(62.7)	1.00		
Absent	47(26.1)	66(36.6)	1.65	(1.03-2.66)	S*
Ventilation of cooking place					
Good	159(87.45)	178(97.9)	1.00		
Poor	21(11.5)	2(1.1)	11.7	(2.61-73.73)	S**

NS= Not Significant, S*= Significant, S= Highly Significant**

Indoor pollution was also investigated by proxy variables. More families in case group were found to utilize biogas as fuel(53.88%) than in control group (31.11%). Similarly more families in control group had smoke outlet (92%) in cooking place than in case group(82%). No other noticeable distribution was recorded in other variables (Table 4.4).

On univariate analysis four variables, namely kindbed (Earth floor), kindfuel(Biogas), smokelet and window when absent from kitchen showed significant results. In former three the odds ratios were more than two. Again after collapsing, when cooking place had no smokelet and window produced a odds ratio as high as 11.75 with significance (95% C.I. 2.61-73.73).

4.4. Nutritional variables

Almost all case and control subjects had some degree of malnutrition, 84% in cases and 72% in controls. The difference was in the presence of twice the number of normal nutrition children in control group and a few number of control children in the 3rd degree malnutrition group. Birth weight below 2500 grams was also marked in case group(18.33%) than the controls(4.4%). Regarding breastfeeding after birth both groups had similar response. Most of the children were given breast milk after birth. But they differed in the type and duration of breast milk given to the children. It was observed that the control subjects were given breast milk more exclusively(90%) than case children(73%). On univariate analysis, absence of exclusive breast milk, presence of 3rd degree malnutrition, and birth weight below 2500 grams showed strong relation with risk by producing statistically significant high odds ratios, which had also valued confidence intervals. The results were tabulated in Table 4.5.

Table 4.5
Distribution and univariate results of nutritional variables

Variables	Case(%)	Control(%)	OR	95% C.I.	*Interpt*
Normal nutrition	26(14.3)	49(26.9)	1.00		
Malnutrition					
1st Degree	49(26.9)	82(45.1)	1.13	(0.60-2.13)	NS
2nd Degree	72(39.6)	45(24.7)	3.02	(1.58-5.78)	S**
3rd Degree	33(18.1)	4(02.2)	15.15	(4.56-58.40)	S**
For all	154(84.7)	131(72.0)	2.22	(1.78-4.01)	S
2nd + 3rd Degree	105(57.7)	89(48.9)	2.22	(1.24-4.02)	S**
1st Degree Vs 2nd + 3rd Degree			1.97	(1.22-3.19)	S**

Table 4.5

Variables	Case(%)	Control(%)	OR	95% C.I.	Interpret
Birthweight, in grams					
3500-3800	3(01.6)	7(03.81)	1.00		
2500-3499	137(75.3)	156(85.8)	2.05	(0.47-10.21)	NS
<2500	33(18.1)	8(04.4)	9.63	(1.67-62.44)	S**
For all	170(93.5)	164(90.2)	2.42	(1.36-16.21)	S*
Breastfeeding after birth					
Yes	172(94.6)	176(96.8)	1.00		
No	8(04.4)	4(02.2)	2.05	(0.55-8.24)	NS
Exclusive breastfeeding (1) Vs Breast+Bottle (2)					
1	134(73.7)	164(90.2)	1.00		
2	36(19.8)	10(5.5)	4.41	(2.01-9.87)	S**
Exclusive breastfeeding (1) Vs Mixed feeding (3)					
3	2(01.1)	2(01.1)	1.22	(0.12-12.32)	NS
Duration of exclusive breast feeding, in months					
5+	67(36.8)	45(24.7)	1.00		
3-4	30(16.5)	63(34.6)	0.71	(0.38-1.31)	NS
1-2	59(32.4)	34(18.7)	2.58	(1.41-4.74)	S**
For all	89(48.9)	97(53.3)	1.37	(0.91-2.08)	NS

NS= Not Significant, S*= Significant, S**= Highly Significant

4.5. Immunological variables

A marked difference was recorded between cases and controls in this category. Ninety one percent controls were vaccinated in comparison to 71% in cases. When enquired among vaccinated children, 77% of controls had completed the routine vaccination schedule for age, while in cases it was 51%. Those who had incomplete vaccination, more had incomplete DPT than incomplete measles. This proportions were more in case group. Table 4.6 summarized the results.

Table 4.6
Distribution of immunological variables

Variables	Case(%)	Control(%)	OR	95%C.I.	Interpt
Vaccine, Routine schedule					
Given	129(70.9)	167(91.8)	1.00		
Not given	29(15.9)	10(05.5)	3.75	(1.68-8.58)	S**
Vaccine status, when given					
Complete	93(51.1)	139(76.4)	1.00		
Incomplete	36(19.8)	28(15.4)	1.92	(1.92-3.49)	S*
Comparison between Complete(1), Incomplete DPT(2), Incomplete Measles(3) and Incomplete both(4).					
1	93(51.1)	139(76.4)	1.00		
2	22(12.1)	8(04.4)	4.11	(1.65-10.54)	S**
3	8(04.4)	16(08.8)	0.75	(0.28-1.95)	NS
4	6(03.3)	4(02.2)	2.24	(0.54-9.76)	NS
Diarrhoea					
No	145(79.9)	166(91.3	1.00		
Yes	35(19.2)	14(07.7)	2.86	(1.42-5.84)	S**
Recurrent ARI					
No	123(67.6)	109(59.9)	1.00		
Yes	57(31.3)	71(39.0)	0.71	(0.45-1.12)	NS
Atopisity, history of allergy in the family					
No	135(74.2)	134(73.7)	1.00		
Yes	45(24.7)	46(25.3)	0.97	(0.59-1.61)	NS
Sufferer of atopisity					
Others	2(01.1)	3(01.6)	1.00		
Father	22(12.1)	19(10.4)	1.30	(0.15-12.65)	NS
Mother	21(11.5)	18(09.9)	1.75	(0.20-17.23)	NS
Both	3(01.6)	3(01.6)	1.50	(0.07-32.93)	NS
For all	46(25.3)	40(22.0)	1.50	(0.41-5.79)	NS
Type of atopisity					
Food allergy	17(09.3)	29(15.9)	1.00		
Skin	23(12.6)	15(8.2)	2.62	(0.99-7.00)	NS
Respiratory symptoms	5(2.7)	2(1.1)	4.26	(0.62-36.18)	NS
Duration of atopisity, *in years*					
1-3	17(09.3)	13(07.1)	1.00		
4-6	13(07.1)	9(04.9)	1.10	(0.31-3.91)	NS
7-9	5(02.7)	8(04.4)	0.48	(0.10-2.16)	NS
10-12	7(03.8)	7(03.8)	0.76	(0.18-3.27)	NS
13+	2(01.1)	6(03.3)	0.25	(0.03-1.79)	NS
For all	27(14.8)	30(16.5)	0.69	(0.33-1.31)	NS

On univariate analysis no immunization and incomplete immunization both showed significant results when compared with partially immunized and completely immunized groups. Among incomplete immunized group, children having incomplete DPT were 4 times at risk than incomplete measles group(OR 4.11, 1.65-10.54). When both DPT and measles were incomplete, the risk was above two folds, but it was not statistically significant.

About natural immunization, history of previous exposure to ARI, presence of concurrent diarrhoea in the index case and presence and type of atopisity in the family were enquired. There was an even distribution of these variables among cases and controls except in case of diarrhoea. More cases(20%) were exposed to this factor than the controls(8). On further analysis, only diarrhoea when present showed a significant risk (2.86, 1.42-5.84). Table 4.6 showed the results.

4.6. Maternal knowledge and practice

Some of the variables regarding maternal knowledge and practice were analyzed. A few variables which were considered to be important in terms of risk factors were included in the univariate analysis. Mothers were asked whether treatment were offered to their children and if any, type of treatment given. Maternal response on the delay in initiating treatment and number of days delayed was recorded.

Table 4.7 summarized these results.

Table 4.7
Maternal knowledge and practice

Variables	Case(%)	Control(%)	OR	95% C.I.	Interpt
Treatill					
Yes	149(81.9)	96(52.8)	1.00		
No	31(17.0)	84(46.2)	0.24	(0.14-0.40)	NS
Type of treatment given					
Allopathic	74(40.7)	72(39.6)	1.00		
Combination	52(28.6)	10(05.5)	5.00	(2.27-11.53)	S*
Homeopathic	18(09.9)	12(06.6)	1.46	(0.61-3.50)	NS
Others	5(02.7)	1(00.5)	4.86	(0.53-112.79)	NS
Delay treatment					
No	132(72.6)	112(61.6)	1.00		
Yes	48(26.4)	68(37.4)	0.60	(0.37-0.96)	NS
Delay days					
1-3	59(32.4)	63(34.6)	1.00		
4-6	45(24.7)	29(15.9)	1.66	(0.88-3.11)	NS
7-9	17(09.3)	15(08.2)	1.21	(0.52-2.83)	NS
10-14	11(06.0)	5(02.7)	2.35	(0.70-8.32)	NS
For All	73(40.1)	49(26.9)	1.59	(1.01-2.50)	S*

NS= Not Significant, S*= Significant

A summary of the results obtained from univariate analysis could be appropriate at this point. For the sake of simplicity only results which were statistically significant tabulated here. Hopefully this would provide a quick reference of the univariate results.

Table 4.8
Summary of statistically significant results of univariate analysis

Variables	Odds Ratio	95% C.I.
Environmental Factors		
1.Kind of bed used		
Earth Floor	2.18	(1.06-4.55)
2.Kind of fuel used		
Bio gas	2.80	(1.74-4.51)
3.Ventilation of cooking place		
Smoke outlet absent	2.47	(1.21-5.09)
Window absent	1.65	(1.03-2.66)
Poor Ventilation	11.70	(2.61-73.7)
Nutritional Factors		
1.Nutritional status		
Malnutrition		
2nd degree	3.02	(1.58-5.78)
3rd degree	15.15	(4.56-58.4)
For all	2.22	(1.78-4.01)
2nd + 3rd degree	2.22	(1.24-4.02)
1st degree Vs		
2nd + 3rd degree	1.97	(1.22-3.19)
2.Birth weight		
< 2500 grams	9.63	(1.67-62.4)
3.Breastfeeding		
Non exclusive	4.41	(2.01-9.87)
< 3 months exclusive	2.58	(1.41-4.74)
Immunological Factors		
1.Vaccine		
Not given	3.75	(1.68-8.58)
Incomplete	1.92	(1.92-3.49)
Incomplete DPT	4.11	(1.65-10.5)
2.Diarrhoea		
Present	2.86	(1.42-5.84)
Maternal Knowledge and Practice		
1.Treatment given		
Combination	5.00	(2.27-11.5)

4.7. Multiple logistic regression results

To test the odds ratios obtained from univariate analysis, a multiple logistic regression analysis was performed. All the three methods available; forward stepwise, backward stepwise and enter were tried. Method enter was found to have maximum goodness to fit as well as significant chi-square results. The goodness to fit of the model did not differ from chi-square value after improvement. The classification table for the disease could successfully classified 78.33% controls and 58.33% cases and overall 68.33%, which was normally acceptable from the statistical point of view. This might provide exactness of the magnitude of the observed odds ratios, whether overestimated or underestimated.

The choice of which variables should be used for adjustment and in what order, can not be decisively resolved by applying statistical methods. variables from other studies reported as important should certainly be considered for inclusion. In this study variables which had significant OR with valid confidence interval on univariate analysis, as well as variables in which full and reliable responses obtained were entered into this equation.

The logistic model, called logit, which predicts the probability in terms of log odds can be written as;

$$\log\left(\frac{prob(event)}{prob(noevent)}\right) = B_0 + B_1X_1 \ldots\ldots + B_pX_p$$

The obtained logistic coefficient can be interpreted as the change in the log odds associated with one unit change in the independent variable. Odds ratios can easily be calculated and also the corresponding confidence interval. The predicted probability was significant at $P < 0.05$.

Table 4.9
Significance and fitness of the MLR model

	Chi Square	df	Significance
-2 Log likelihood	413.466	1	0.0160
Model chi square	85.600	5	0.000
Improvement	85.600	5	0.000
Goodness to fit	345.433	354	0.6177

Table 4.10
Classification table of severe ARI

	Predicted		
Observed	0/control	1/case	Corrected percent
Control 0	141	39	78.33%
Case 1	75	105	58.33%
Overall	(141+105)/360		68.33%

In this study about 18 probable variables were entered to regress against the dependent variable 'diagnosis' i,e, the presence or absence of severe ARI in enter method.

Initially only four variables showed significant results. Subsequently variables which had odds ratios more than 2 were tested in the same method. Six variables had odds ratios more than 2 but vaccine* and agechild** were not statistically significant. Since agechild might have a particular distribution it was excluded from the model. The rest five variables were highly significant. Tables 4.11 and 4.12 give the results of Multiple logistic regression :

Table 4.11
Results of multiple logistic regression

Variables	B	S.E.	Wald	df	sig	R	Exp(B)
Vaccine	1.4679	.3533	17.2644	1	.0000	.1749	4.3400
Diarrhoea	1.1324	.3740	9.1660	1	.0025	.1198	3.1031
Kindfuel2	.7265	.2444	8.8318	1	.0030	.1170	2.0677
Nutritio2	.8482	.2543	11.1223	1	.0009	.1352	2.3355
Nutritio3	2.2124	.5682	15.1634	1	.0001	.1624	9.1376
Constant	-1.1428	.1921	35.4002	1	.0000		

Adjusted odds ratios and corresponding 95% C.I. are shown in table 4.12.

*Vaccine= Vaccine given or not

**Agechild = Age of the child in months

Table 4.12
Results showing adjusted odds ratios

Variables	Case(%)	Ctrl(%)	Crude OR	Adjusted OR	95% C.I.	Interpt
1.Vaccine						
Given	129(70.9)	167(91.8)	1.00			
Not given	29(15.9)	10(5.5)	3.75	4.34	(2.15-8.67)	S*
2.Diarrhoea						
No	145(79.7)	166(91.3)	1.00			
Yes	35(19.2)	14(7.7)	2.86	3.10	(1.48-3.25)	S*
3.Kind of fuel used						
Gas	65(36.1)	105(58.3)	1.00			
Biogas	97(53.8)	56(31.1)	2.80	2.06	(1.28-3.32)	S*
4.Nutrition *Weight in grams*						
Normal	26(14.0)	49(27.0)	1.00			
2nd degree	72(40)	45(25)	3.02	2.33	(1.41-3.81)	S*
3rd degree	33(18)	4(2.0)	15.15	9.13	(3.0-27.66)	S**

S*= Significant, S**= Highly Significant

4.8. CLINICAL PRESENTATION AND CLINICAL OUTCOME

The major secondary objectives of the study were to register information about the clinical outcomes of the cases even when admitted in the hospital, as well to report the state of maternal knowledge and practice in ARI. The following tables displayed the results of a set of investigations done in case subjects, except for two subjects the results of whom were misplaced.

Tables 4.13 and 4.14 reported the results. Approximately 22% of them exhibited normal blood count results and 45% had normal chest X ray findings. Finally all the subjects were cured before discharge, except for one who died of complications as he had developed septicaemia and sequelae.

Table 4.13
Patterns of blood count in severe ARI cases

Complete blood count	Number = N	Percent(%)
Polymorph. Leukocytosis	81	44.55
Lympho. Leukocytosis	55	30.25
Poly. Leukemoid reaction	1	0.55
Lympho. Leukemoid reaction	2	1.10
Normal	39	21.45
Total	178	97.90

Table 4.14. summarized the results of 'X' ray chest results of the case subjects.

Table 4.14
Patterns of 'X' ray findings in severe ARI cases

'X' Ray chest PA view	Number= N	Percent(%)
Patchy opacities	31	17.05
Pneumonic consolidation	60	33
Patchy opacities + Consolidation	6	3.30
Normal	81	44.55
Total	178	97.90

At the time of enrolling, all subjects were clinically examined. Accordingly a general pattern of ARI illness present in children at the time of examination was tabulated in the table 4.15. Signs and symptoms presented was distributed according to different age groups. Results showed that most of the children presented with fever, cough and

running nose. Fifty percent of the children presented with blocked nose while fast breathing and chest indrawing were present in 121 and 155 subjects in case group. Convulsion was present in only 8 subjects in case group. Cold and cough were the most frequent signs and symptoms (62% in cases, 81% in controls) on the first day. The next frequent feature was cold, cough and fever together. Other features were irregularly present according to the state of the disease.

Table 4.15
Distribution of ARI signs and symptoms in different age group

Signs & Symptoms	Age groups (In months)						
	<1	2-5	6-11	12-23	24-35	36-47	48-59
Fever	7	97	125	55	12	5	1
Cough	10	110	144	68	18	6	1
Running Nose	7	78	138	63	16	6	1
Blocked Nose	8	58	74	17	1	1	0
Chest indrawing	4	63	57	29	7	1	0
Fast breathing	5	57	86	40	9	3	0
Stridor	0	1	0	1	0	1	0
Abnormally sleepy	1	2	1	0	0	0	0
Unable to drink	1	3	1	0	0	0	0
Convulsion	0	3	3	2	0	0	0

It was observed that the mean duration of illness from the onset of disease till the date of examination was 6.53 days and 5.99 days in cases and controls respectively, the median being 5 days and the range was 1-14 days.

To investigate further into the mother's knowledge about severe ARI, maternal report on reason for coming to hospital as proxy of triggering factor of care seeking and the name of the illness offered by them that their children had were recorded. Table 4.16 and 4.17 summarized the results.

Table 4.16
Reasons given by mothers for seeking care

Reasons for care seeking	Case(%)	Control(%)
1.No improvement	47(25.8)	73(40.1)
2.Respiratory difficulty	49(26.9)	22(12.1)
3.Referred by outside doctors	55(30.2)	1(00.5)
4.Referred by other sources	9(04.9)	0
5.Repeated respiratory distress	1(00.5)	0
6.Detoriation of condition	2(01.1)	0
7.Worried of condition	0	3(01.6)
8.For better treatment	0	1(00.5)
9.Usually treat here	0	2(01.1)
10.Convulsion	4(02.2)	0
11.Confusion(Mother)	0	1(00.5)
12.Nearness to hospital	1(00.5)	20(11.0)
13.Relatives' advice	7(03.8)	3(01.6)
14.Poverty	0	4(02.2)
15.Mental satisfaction	4(02.2)	50(27.5)
16.No response	1(00.5)	0
Total 16 responses	180(100)	180(100)

Table 4.17
Illness as named by mothers

Illness Named	Case(%)	Control(%)
1.Cold or cough	41(22.5)	144(79.2)
2.Pneumonia	106(58.3)	25(13.7)
3.Hapani(Asthma)	16(08.8)	11(06.0)
4.Upprir dosh(Spiritual curse)	13(07.1)	0
5.Dhanustankar(Convulsion)	2(01.1)	0
6.Others	2(01.1)	0
Total 6 names	180(100)	180(100)

Most of the mothers could name the illness accurately, 106(58.3%) in case group and 144(79.2%) in control group. The major reasons in the control group for coming to hospital was mental satisfaction(28%) and no improvement(40%) of illness of their children. The case group was different in that respect. Their major reason was referral from out side doctors(30%) and development of difficult respiration(27%) in their children. When enquired about reasons for delay in initiating treatment or coming to this hospital, a variety of responses were obtained. Most mothers in case group(33%) attended a non traditional healer while most mothers in control group(30%) bought some drugs form pharmacy or consulted a pharmacist. Tables 4.17 and 4.18 reported these results.

Table 4.18
Reasons for delay in treatment as responded by mother

Reason for delay	Case(%)	Control(%)
1.Financial	3(01.6)	3(01.6)
2.Home care given	3(01.6)	5(02.7)
3.seen pharmacist or buy some drug	54(29.7)	56(30.8)
4.Seen other healers	60(33.0)	16(07.7)
5.Mother must consult others	0	1(00.5)
6.Very young infants	0	1(00.5)
7.Child was not very sick	10(05.5)	27(14.8)
8.Single at home	1(00.5)	0
9.Other causes	1(00.5)	3(1.6)

The pattern of feeding during illness of their children, practiced by mothers was also investigated. It was noted that 102(56.1%) and 139(76.4%) children in cases and controls were already weaned and were given both solid along with fluid. Most of the mothers in case group did not changed their practice and continued giving both type of feeding (solid 52%, fluid 62%) as usual. But control mothers had started giving more than usual fluid (34%) than case group (17%) along with solidfood. Table 4.19 reported the results.

Table 4.19
Feeding practice of mother during illness

Amount of food given	Solid food		Fluid	
	Case(%)	Control(%)	Case(%)	Control(%)
> Usual	12(6.6)	16(8.8)	31(17)	62(34.1)
< Usual	37(20)	38(20.9)	36(19)	15(8.2)
As Usual	53(29)	85(46.7)	113(62)	103(56.6)

It is to be noted here that no mother in either group had stopped breast feeding during this illness who had been practicing already. Finally the different terminology used by mothers in local dialect to name the ARI sign symptoms were noted and tabulated (See appendix-5). This table also showed a co-relation of terms with the signs and symptoms presented in children.

Other results were cited along with discussion part of this paper. Results those seemed to be important and needed visualization were tabulated here.