

Knowledge on Acute Respiratory Tract Infection Among Mothers in An Urban Community of Imphal west District: A Community Based Cross-Sectional Study

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Abstract

Background: Acute respiratory tract infection is a major cause of morbidity and mortality in developing and also developed countries. About 13 Million under 5 children dies every year in the world, 95% of them in developing countries, one third of total deaths are due to ARI.

Methods: A cross sectional study was done covering mothers living in an urban community of Imphal West district from September 2014 to October 2016. A total of sevenleikais were included in that area. Convenience sampling was used to select the participants. A pre- tested questionnaire was used for data collection from 305 caretakers. Data were analyzed using descriptive statistics such as mean (SD) and percentages. Chi square test and t test were used for analysis. P value of <0.05 will be considered as statistically significant.

Results: Mean age of the respondent was 30.94±5.69 (yrs). Majority (62.3%) of them were housewives. Only few (39%) of the mothers had adequate knowledge about it and they reported as ARI when cough and cold (64.9%), followed by difficulty in breathing (50.8%), running nose (49.8%), sore throat (36.1%), fever (31.8%), wheezing (21.4%) etc. Around 7/10 reported ARI as a serious disease. More than half of the mothers (59%) reported that they consulted a health care provider for management of the condition. No association were seen between knowledge and background characteristics. There was significant association between knowledge and prevalence of ARI, but significant association was observed between age of the mother and knowledge of ARI ($p < 0.05$).

Conclusions: The study strongly towards the low utilization of basic health services in the community, lack of mother's education especially in prevention and control of ARI. Health education can change health care seeking behaviors and attitude of parents and other family members to take care of the ARI child during illness.

Keywords: Cross sectional study, random sampling method

I. Introduction

Acute respiratory tract infection is a major cause of morbidity and mortality in developing and also developed countries. ARI is an infection of any part of respiratory tract or any related structures including paranasal sinuses, middle ear and pleural cavity. It includes, a new episode means occurring in an individual who has been free of symptoms for at least 48 hours and also all infections of less than 30 days duration except those of the middle ear where the duration of acute episode is less than 14 days¹. In the developing countries out of ten, seven deaths in under 5 children are due to ARI². National family health survey (NFHS -3) revealed that two weeks before the survey 6% of under 5 children had symptoms of an ARI (cough, short and rapid breathing) that is cough, short and rapid breathing that was chest related not due to blocked running nose. Out of these children 69% were taken to a health facility or health provider for treatment³. Average adult has 2-4 episodes per year and a child has 6-8 episodes per year it is more in urban children than rural children^{2,4}. In rural area, lack of basic health services, lack of awareness, and other associated factors like overcrowding, environmental factors, defects in immune system, overuse and misuse of antibiotics, poverty, absence of ventilation, indoor air pollution are responsible factors. It is estimated that at least 300 million episodes of ARI occur in India every year, out of these about 30 to 60 millions are moderate to severe ARI¹. While every 6th child in the world is Indian, every 4th child who dies, comes from India. Approximately 4 millions of total deaths are due to pneumonia that is why pneumonia is a leading cause of death in under five children.⁵

ARI is often ignored and inadequately treated in certain urban communities of Imphal. Children under five years with severe ARI are under-treated and take antimicrobials even for mild ARI. Since, it is impossible to identify the specific etiological agent in each patient which is also a problem, the only way to stay safe is to control it by increasing the awareness of the caretakers which now deserves a high priority because of the difficulties involved in preventing and managing these infections. This community based cross-sectional study was conducted to assess the knowledge and practice of management of ARI among mothers having under five years children in an community of Imphal West district of Manipur.

II. Materials And Methods

A cross sectional study was carried out in 305 mothers living in urban area of Imphal West district during September 2014 to October 2016. It was conducted in the urban community, Imphal. It is about 3 kms away from RIMS hospital and towards the north east side of the Institute. The study covered all the 7 leikais under the field practice area namely Sinam Leikai A, Sinam Leikai B, Neikalong village, Grace colony, Goigoilong village, Ramgailong village and Meitei Langol. It has 705 households with a total population of 5208. The study area comprised of different communities, majority being Meitei Hindus in Sinam Leikai and tribals and Christians in the remaining leikais. (from family folder record of the department). Those who had mental problems and could not be contacted even after two visits were excluded from the study. Sample size was calculated using a prevalence of 16.6% from a previous study. Hence, 300 children with their mothers were targeted for data collection. On an average there were 2 to 3 children in every eligible household. Only one child per house was selected to include in the study by simple random sampling. A pre-tested and pre-designed semi-structured questionnaire was used for data collection through interview schedule. The questionnaire included information regarding knowledge about acute respiratory tract infection (ARI), type and place of treatment, education and occupation of mothers. House to house survey was done for data collection. Chi-square test and t test were applied to test for significance in the difference of proportions and means. Respondents were fully informed and verbal informed consent was taken before data collection and privacy and confidentiality were maintained. Data were analysed by SPSS version 21 (IBM) and a p-value of less than 0.05 was considered to be statistically significant. Ethical approval was obtained from the RIMS Ethics Board, Imphal before the beginning of the study.

Operational definitions :

Acute Respiratory Infections: WHO (1997) definition was used. A child was considered to be having ARI when the child had suffered from any of the following symptoms such as running nose, cough with/without fever, sore throat, difficulty in breathing with/without rapid breathing, noisy breathing and or chest in-drawing present at the time of visit or during the last one month. A new episode was considered when the child had at least three consecutive days free from the disease.

Maternal knowledge about ARI: It was assessed using a set of 8 questions. For each Correct answer a score of 1 and for more than one correct answer, a score of 2 was awarded. The highest and the lowest score attainable by the participant is 12 and 0 respectively.

III. Results

A total of 305 participants took part in this study. The mean age of the study population was 27.9 ± 18.11 months with a minimum of 2 months and maximum of 59 month. Mean maternal knowledge score was 7.97 ± 1.74 with maximum and minimum of 12 and 3 scores respectively. 39% of the mothers had adequate knowledge about ARI and its symptoms. Majority (72.8%) of them knew that ARI is a serious disease.

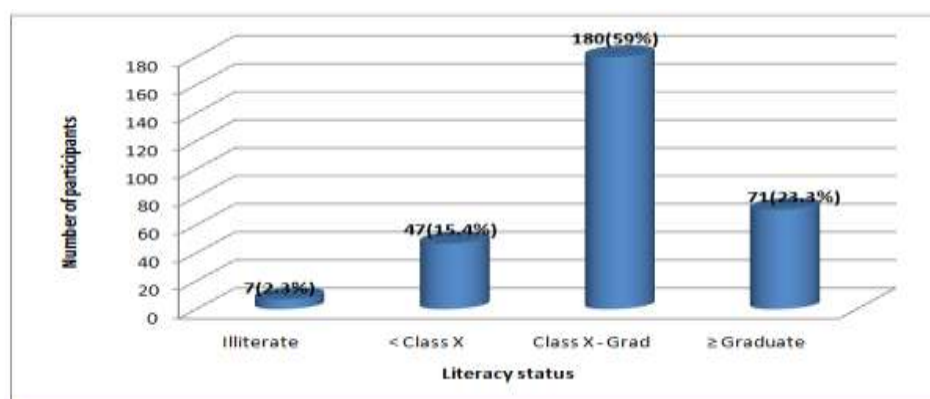


Fig 1: Distribution of participants by their literacy status (N =305)

The above table shows that more than half of the participants (59%) were literate above class X.

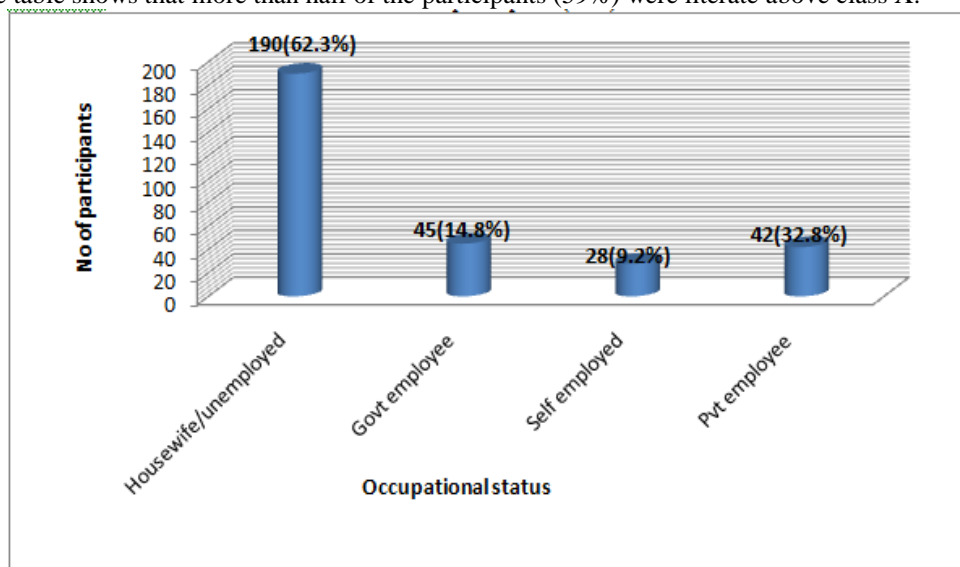


Fig 2: Distribution of participants by their occupational status (N=305)

The above figure shows that majority(62.3%) of the participants were housewives / unemployed.

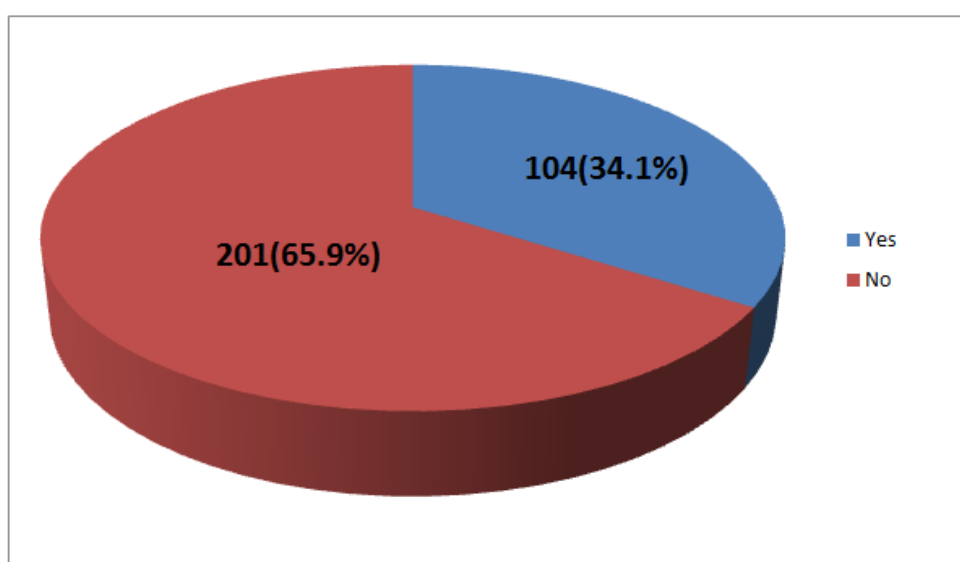


Fig 3: Distribution of participants by prevalence of ARI(N=305).

It was found that around one third of the under-fives had ARI in the previous one month.

Table1 : Knowledge on signs and symptoms of ARI (Multiple responses allowed, N=305)

S/S of ARI	Frequency	Percentage
Cough and cold	198	64.9
Sore throat	110	36.1
Runny nose	152	49.8
Chest indrawing	28	9.2
Wheezing	64	21
Stridor	10	3.3
Difficulty in breathing	155	50.8
Fast breathing	50	16.4
Fever	97	31.8
Ear discharge	17	5.6

The above table shows that of all the signs and symptoms, cough and cold and difficulty in breathing were the most common ones which the caretakers knew of.

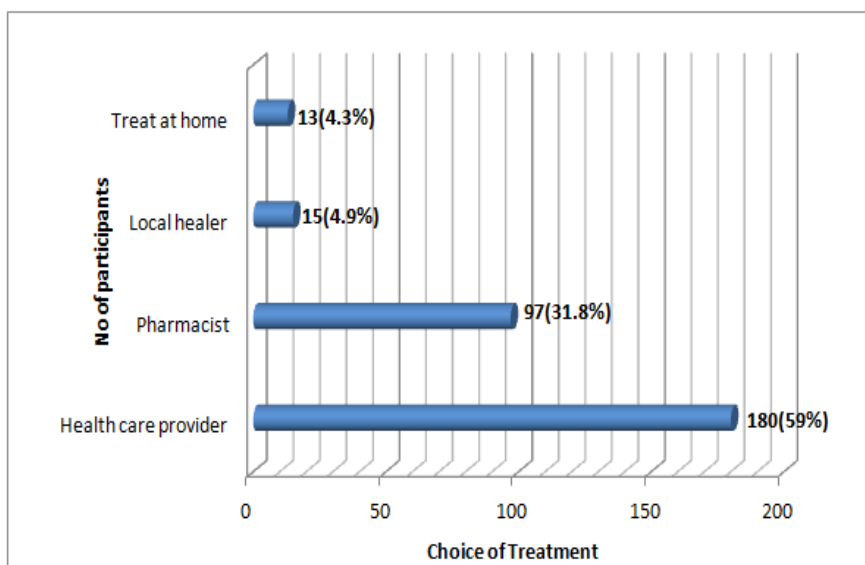


Fig4: Distribution of participants by their health seeking behavior (preferred choice of treatment, N=305)

As you can see from the above table that more than half (59%) of the care-takers sought the help of health care providers as their choice of treatment.

Table 2: Association of maternal knowledge with socio-demographic characteristics(N=305)

Characteristics	Maternal knowledge		P value
	Inadequate, n(%)	Adequate, n(%)	
Religion			0.75
Hindu	101(39.6)	154(60.4)	
Christian& others*	18(36)	32(64)	
Literacy status			0.49
< Graduate	94(40.2)	140(59.8)	
≥ Graduate	25(35.2)	46(64.8)	
Occupation			0.12
Housewife	74(38.9)	116(61.1)	
Govt employee	23(51.1)	22(48.9)	
Self employed	11(39.3)	17(60.7)	
Pvt employed	11(26.2)	31(73.8)	

*Muslim, Meitei

It was found that socio-demographic factors like religion, literacy status and occupation were not statistically associated with maternal knowledge (p >0.05).

Table 3: Association of maternal Knowledge with prevalence of ARI(N=305)

Maternal knowledge	Prevalence of ARI		P value
	Yes	No	
Inadequate	45(37.8)	74(62.2)	0.32
Adequate	59(31.7)	127(68.3)	

There was significant association between maternal knowledge and prevalence of ARI.

Table 4: Association of Knowledge with mother's age(N=305)

Variable	Knowledge	Frequency	Mean ± SD	P value*
Mother's age(yrs)	Inadequate	119	29.96±5.49	0.02
	Adequate	186	31.45 ± 6.12	

*t test

This table shows that the mothers who had adequate knowledge were more older as compared to those who had inadequate knowledge.

Table 5: Association of mother's age with prevalence of ARI(N=305).

Variable	Prevalence of ARI	Frequency	Mean \pm SD	P value*
Mother's age(yrs)	Yes	104	31.10 \pm 6.07	0.74
	No	201	30.86 \pm 5.49	

The above table shows that there was no association between mother's age and prevalence of ARI.

IV. Discussion

The government of Manipur recognizes ARI as major public health problem and control of ARI is a priority program of Government of the state which recognizes the important role of mother and other caretakers in identifying type and severity of ARI and appropriate management including the need of home care and need for timely referral to health facilities. Our study found that the mothers were in the age group of 20 to 46 years (30.94 \pm 5.69). According to religion, majority of mothers were Hindus (83.6 %). Literacy status of mothers was found to be 97.7%. Out of the literate mothers, 23.3 % were graduate (Fig.1), but more than half (62.3%) of them were housewives(Fig. 2) which is supported by a study done by Debasism B. and Ahemed T.A⁶. The prevalence of ARI in the present study was 34.1% (boys: 32.7%, girls: 35.6%) as shown in figure 3 which is much lower than 92.3% (boys: 94.4%, girls: 90.3%) as reported by Singh HN⁷ performed in Manipur, but is found to be much higher as compared to another study done by Prajapati B et al⁸. The level of knowledge (39%) was not satisfactory regarding ARI (Fig.4), but more than half (72.8%) of mothers rated this disease as serious (Fig.5). Our findings were comparable with studies carried out by Saini NK⁹, Kapoor SK¹⁰, Denno DM¹¹ and Simiyu DE¹². About 60% of mothers preferred to go to a health care provider (Fig.6) while the rest opted for other means (pharmacist/ local healer/home remedial measures). Similar observation was seen in another study done by Geldsetzer P et al¹³ where a median of 73.0% (range: 5.3%–100.0%) of caregivers sought care from a healthcare provider when their child was suffering from diarrhoea, malaria or pneumonia and a median of 44.9% (range: 6.1%–100.0%) sought care from appropriate providers. Even Ferdous F et al¹⁴ showed similar findings in the same way. It revealed that caregivers knew instinctively that their child was unwell. Caregivers explained that they know when their child is well and when their child is sick and particularly when something is wrong. The unique knowledge they had about clinical features of severity of disease influenced children's parents or caregivers to decide to take their child to the hospital. Association between maternal age and knowledge could not be revealed and so goes with prevalence of ARI among children. Though, this relation was revealed in another similar study conducted by Azad KMK¹⁵ where it was shown that If mother's age was less than 20, then the children had a higher chance of suffering from ARI. It reasoned that teenage mothers mostly kept their concentration on their own happiness; gave more time to partner, less awareness about their child's health, less knowledge of how to take care of their child.

V. Limitations

Some limitations are worth noting in this study. Memory bias is one which cannot be excluded, especially regarding recalling the number of episodes of ARI in the past 6 months. The present study is a cross-sectional study. Thus, associations identified in the study should not be considered a causal relationship. Although this study is based on a local sample in an urban community in Imphal, Manipur, the findings may be extrapolated to only urban communities in the state.

VI. Recommendations

Similar studies can be done (i) on a larger scale, (ii) in urban and rural areas so as to compare the findings; (iii) with randomisation; (iv) on prevalence of ARIs in the same district; and (v) on prevention and risk factors vi) A longitudinal study can be done using post-test after 1 month, 6 months and 1 year to see retention of knowledge.

VII. Conclusion

The study strongly towards the low utilization of basic health services in community set up, lack of mothers education especially in prevention and control of ARI. Above data revealed that even in urban area, mothers had poor information regarding mode of transmission, diagnosis, availability of treatment, utilization of treatment. Health education can change health care seeking behaviours and attitude of parents and other family members to take care during acute respiratory infection (ARI). There is need for strengthening of information education activity (IEC) in reproductive and child health programme (RCH) or Integrated Management of Neonatal and Child Illness programme (IMNCI), raising female literacy level will go a long way in prevention of morbidity amongst children in general and ARI. Proper training of health workers regarding identification, management and timely referral cases of ARI and strong supervision, monitoring and evaluation of reproductive and child health programme (RCH) especially acute

respiratory infection (ARI) component in peripheral area i.e anganwadi, sub-centres and primary health centres (PHC).

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