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ORIGINAL RESEARCH

To study knowledge, attitude and practices of mothers about acute respiratory tract infections in children of age under five years

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ABSTRACT

Objectives: To study knowledge, attitude and practices of mothers about acute respiratory tract infections in children of age under five years.

Methods: 250 mothers of children of under- five years of age, having acute respiratory tract infection who visited in OPD were included in study. Detail questionnaire was prepared for the purpose of study. The first part of the Performa includes social demographic profile of family and second part includes the various questions related to ARI and pneumonia. For the purpose of study ARI were classified into acute upper respiratory tract infection and lower respiratory tract infections. Dangerous symptoms perceived by mother in case of pneumonia were recorded separately. After explaining purpose of study to mother, consent of mother for participation in study is taken. The data was compiled and analyzed using Epi Info 07 (CDC, USA). Proportions and means were calculated for categorical data and continuous data respectively. Chi square test was applied to assess the significant differences across categories.

Results & Conclusion: Out of 250 mothers of children under 5 years of age, having acute respiratory tract infections who visited OPD, 170(68%) were male children and 80(32%) were female child. Various signs and symptoms known by the mothers were as follows: fever 206(82%), cough 220(88%), cold 224(89%), rapid breathing 137(54.8%), Chest indrawing 166(66.4%), refusal to feed 122(49%) and few signs and symptoms which were known by very few mothers includes convulsion 6(2.4%) etc. Educational status plays an important role in present study to differentiate between AURI And ALRI. The educational status was found to be significantly associated ($p<0.05$) with knowledge to differentiate between AURI and ALRI.

Keywords: Acute respiratory tract infections, Knowledge, Attitude, Practices, Mothers, Children of age 0-5 years

Introduction: Acute respiratory tract infections constitute an important cause of morbidity and mortality in the pediatric age group, especially in under five children. They are a major group of illnesses affecting children, which can be best judged by the fact that respiratory tract infections account for 6% of the total global disease burden. Around 6.6 million children under the age of five die each year globally; 95% of them belong to low-income countries, and one third of the total deaths are due to acute respiratory tract infections. South-East Asian countries like Bangladesh, India, Indonesia, and Nepal together account for 40% of the global ARI mortality. Acute respiratory tract infection is responsible for 30% to 50% of visits to health facilities and for about 20% to 40% of hospital admissions for children under the age of five[1,2].

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The National Family Health Survey -5 conducted in 2019-20 reported that in India the prevalence of ARI was 2.8% preceding two weeks of the survey[3]. ARI constitutes more than 2/3rd of the childhood illness in India[4], 14.3% of deaths among infants and 15.9% deaths among children of age 1-5years of age are due to ARIs and most of these deaths are preventable[5]. Aside from the high morbidity and mortality rates, ARI further poses the risk of rheumatic heart disease as a consequence of the Streptococcus pharyngitis infection. Acute respiratory tract infections accounted for 69% of the total cases of communicable diseases in India[6]. Around four lakh children under the age of five die every year from acute respiratory infections. This figure accounts for 13–16% of all child deaths among pediatric hospital admissions. As a cause of approximately one-fourth of global annual deaths of children aged below five years, ARI is a significant public health concern in India[7,8]. Also, frequent attacks of ARI interfere with the nutrition of children and cause malnutrition, which further increases the chance of infections. But it is important to note that if we look at the root cause of ARI, then we will see that most of the factors or conditions that lead to ARI are preventable, i.e., modifiable factors. They include demographic, environmental, socio-economic, nutritional factors etc.

Acute hospital infection can be defined as an infection of less than 30 days duration in any part of the respiratory tract and related structures. In the case of infections of the mid airway, the duration of the acute respiratory tract episode is taken as 14 days or less. Acute respiratory infection is further divided into upper and lower ARI depending upon the site of infection. AURI include cold, pharyngitis, sinusitis, and otitis media, while ALRI include epiglottitis, laryngitis, laryngo-tracheo-bronchitis, bronchitis, bronchiolitis, and pneumonia, which is responsible for the majority of deaths due to ARI[9]. In India, facilities for medical care are inadequately distributed, and even if they are available, they are not utilized due to a lack of knowledge and other cultural practices. According to the National Family Health Survey-5, only 58% of females received 4 antenatal visits, and children with fever and symptoms of ARI in the 2 weeks preceding the survey who were taken to a health facility were 69%[3].

Due to inadequate knowledge and faulty cultural practices regarding ARI, many mothers could not differentiate AURI from ARLI, which delays treatment. Delay recognition and help-seeking by the family is important factor in the high mortality associated with pneumonia. Knowledge of mother about ARI varies from region to region. Mother education, socio-economic status, and the socio-cultural-environment are directly associated with the health-seeking behaviour of families. So, keeping this in mind, this study was planned to assess the knowledge, attitudes, and practices of mothers and the community about the various aspects of acute respiratory tract infections in children.

Aims and objectives:

1) To know mothers' perceptions about various symptoms of acute respiratory infections
2) To know the knowledge, attitude and practices in the community related to ARI

Materials and methods:

250 mothers of children of under five years of age with acute respiratory tract infections who visited the OPD were included in study. Children suffering from the other diseases were not included in study. A detailed questionnaire was prepared for the purpose of the study. The first part of the Performa includes social and demographic profile of the family and second part includes the various questions related to ARI and pneumonia. For the purpose of this study, ARI were classified into acute upper respiratory tract infection and lower respiratory tract infection. Symptoms of upper respiratory tract infections were cough, cold fever, earache, ear discharge and vomiting without fast breathing, chest-indrawing or any indication of severe pneumonia. Rapid breathing, chest-indrawing, high grade fever, convulsions, cyanosis, refusal to feed and excessive drowsiness were features of ALRI. Dangerous symptoms perceived by the mother in the case of pneumonia were recorded separately. After explaining purpose of the study to the mother, her consent to participate in the study is obtained. The data was compiled and analyzed using Epi Info 07 (CDC, USA). Proportions and means were calculated for categorical and continuous data respectively. Chi square test was applied to assess the significant differences across categories.

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Results:

Table 1: Distribution of participants of study (Mothers & children)

	Serial number	Frequency	Percentage
1)	Total no. of children	(250)	
	Male	170	68%
	Female	80	32%
2)	Distribution of children according to AURI & ALRI	(250)	
	AURI (Acute Upper respiratory tract infection)	150	60%
	ALRI (Acute Lower respiratory tract infection)	100	40%
3)	Educational status of mother	(250)	
	Illiterate	56	22%
	Primary	62	25%
	Matric	72	29%
	Graduate	60	24%
4)	Knowledge of mother to differentiate between AURI & ALRI	(250)	
	Can differentiate	166	66%
	Can't differentiate	84	34%

Table 2: Distribution of mothers according to knowledge regarding sign and symptoms of ARI (AURI & ALRI)

Sign & Symptoms	Frequency	Percentage
1. Fever	206	82%
2. Cough	220	88%
3. Cold	224	89%
4. Earache	---	---
5. Ear discharge	4	1.6%
6. Vomiting	8	3.2%
7. Rapid Breathing	137	54.8%
8. Chest in drawing	166	66.4%
9. Convulsions	6	2.4%
10. Cyanosis	8	3%
11. Refuse to feed	122	49%
12. Noise in chest	100	40%

*Multiple answers, n= 250

Table 3: Distribution of mothers according to initial treatment preferred in ARI

Serial no.	Frequency	Percentage
1) No treatment	26	10%
2) Home based treatment	106	42%
3) Health worker	10	4%
4) RMP/ Quacks	154	62%
5) MBBS/MD/MS doctor	120	48%

*****Multiple answers, n= 250

Table 4: Distribution of mothers according to knowledge of dangerous symptoms of Pneumonia

Serial no.	Frequency	Percentage
1) Chest Indrawing	221	88%
2) Rapid breathing	196	78%

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3)	High fever	180	72%
4)	Refusal to feed	146	58%
5)	Cyanosis	46	18%
6)	Excessive drowsiness	30	12%
7)	Convulsions	8	3%

*****Multiple options, n=250

Table 5: Distribution of mothers according to their educational status to differentiate between AURI & ALRI

Serial number	Can differentiate	Can't differentiate
1) Illiterate	22 (9%)	34(14%)
2) Primary	32 (13%)	30(12%)
3) Matric	54 (21%)	18(7%)
4) Graduate	58 (23%)	2(1%)
Total	166(100%)	84(34%)

*****Chi square value 51.53, p-value <.00001,

* p value <0.05 was considered to be significant

DISCUSSION

Out of 250 mothers of child of under 5 years of age, having acute respiratory tract infections who visited OPD, 170(68%) were male children and 80(32%) were female child. In present study it was observed that proportion of boys were higher compared to girls who had infection and visited the hospital, results were similar to the study conducted by Jeya et al where 59.3% of boys were suffering and 40.7% of girls were suffering from ARI and visited OPD[10].

Another study by Atul Choube, et al. of risk factors contributing to respiratory infection in under five age group children showed majority of those with ARI were males (74.02%)[11]. The probable reason could be lies in our patriarchal society people take good care of male children while female children are not brought to the hospital early in the course of disease, female child is relatively neglected, prejudice against female sex could be reason for disparity. Other studies reveal same results [12,13,14].

Distribution of children according to AURI or ALRI, AURI were reported around 150(60%) of total cases. The educational level of mothers in the study population is 62 (25%) Primary, 72 (29%) Matric, 60(24%) is Graduate. Around 166(66%) of mothers can differentiate between AURI and ALRI.

In present study majority of mother know about the sign and symptoms of ARI. Percentage according to the various signs and symptoms known by the mothers are as follows: fever 206(82%), cough 220(88%), cold 224(89%), rapid breathing 137(54.8%), chest indrawing 166(66.4%), refusal to feed 122(49%) and few signs and symptoms which was known by very few mothers includes convulsion 6(2.4%) etc. Study by Challa S et al observed that fever was the commonest presentation (63%) followed by cold and cough (61%) and a very few had fast breathed (8%) wheezing (6%) or chest indrawing (2%)[15].

A Cross-Sectional Study conducted in Imphal by Sougaijam et al revealed the knowledge among mother about ARI as fever 97(31.8%), cough & cold 198(64.9%), sore throat 110 (36.1%), running nose 152 (49.8%), chest indrawing 28 (9.2%), fast breathing 50 (16.4%)[16].

Almost similar symptoms of ARI found to be known by mothers in Bangladesh by Mohammad Akteruzzaman et al were cough (84%), followed by fever 60%, breathing difficulty (25%) and a sneezing (20%), wheezing 16%[12]. Bham SQ et al in their study conducted in Pakistan revealed cough (74%), fever (64%), wheeze (19%), sneezing (12%) were the signs and symptoms of acute respiratory infection known by the mothers visiting the OPD[17].

In present study 154(62%) of mothers opted to go to RMP/Quacks for initial treatment of ARI and around 120(48%) preferred visiting to qualified medical practitioner and a majority i.e., 106(42%) of mothers opt for home base treatment as Primary care and around 26(10%) of mothers were ignorant regarding sign and symptoms and took no treatment for their child. Some similar results were found in study by Gyawali

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et al where more than 40% respondents give home remedies like ginger and honey to eat as initial treatment of ARI[18]. Kapoor et al also observed that mild ARI is managed using home remedies by 51.9% of mothers, 44.3% preferred to take advise from doctor and 8.5% responded no treatment was given[19].
Whereas in Aligarh, Khan et al observed that 71.4% of mother sought early treatment for ARI, 74.3% of mothers visited non allopathic medical practitioner, only 25.7% visited qualified doctor[20]. Another study by Shireen Qassim et al revealed that 89% of study population consulted qualified doctor, 58% practiced self-medication and 6% took home remedies for ARI[17].
Study by Challa et al found that around 12% of mothers went to local RMP/pharmacist for initial treatment[15]. Similar picture was shown in Bangladesh where it was 22% and 5% preferred home remedies[12].
Majority of respondents in the present study have the knowledge of dangerous symptoms of Pneumonia which includes chest indrawing 221(81%), rapid breathing 196(78%), high fever 180(72%), refusal to feed 146(58%), cyanosis 46(18%), excessive drowsiness 30(12%) and convulsions 8(3%).
A Study conducted in Hyderabad by Challa et al revealed awareness of mothers about danger sign of ARI is poor. Very few around 11% knew about fast breathing, 4.7% wheezing, convulsion 1%, lethargy 1% are major danger sign of ARI requiring urgent medical attention[15].
Kapoor et al in their study revealed that increased respiratory rate (81.1%), difficult breathing (66%), chest indrawing (35.8%) and noise from the chest (29.2%) were most common sign for recognizing the severe episodes by mother [19]. The difference in the perception on the danger signs of ARI may be due to ability to recognize, level of education and social status of the mother. Difference of knowledge of mothers in different studies about dangerous sign of ARI/Pneumonia may be due to different geographical distributions, different cultures, customs, norms, availability and utilization of health services.
Educational status plays an important role in present study to differentiate between AURI And ALRI. The educational status was found to be significantly associated ($p<0.05$) with knowledge to differentiate between AURI and ALRI.
A similar study done in Sudan by Saeed et al revealed association between education status of mothers and their level of knowledge regarding acute respiratory infection, was found to be significant (p-value 0.001)[21].
Another study conducted in Aligarh by Dr A Z Khan et al revealed that majority of literate mothers (75%) had complete knowledge regarding management of ARI. In that region literacy alone was not the only factor responsible for knowledge regarding ARI and adopting correct practices during ARI. Mass media and health personnel also played an equally important role in obtaining health knowledge[20].

CONCLUSION:

Mothers play an important role in preventing and managing ARI's through correct knowledge and cultural practices. Therefore, this study was planned to assess the knowledge, attitude, and practice of mothers about acute respiratory tract infections in children of age under five years. An uneducated or less educated mother, even if she cares for her family, may have poor knowledge about acute respiratory infections, which in turn leads to an increased incidence of infections in her children. Also, delayed recognition and help-seeking by the family lead to a poor prognosis of the disease. Adopting good practices by the mother has a direct effect on health and well-being of her child. The health seeking behavior is also poor, with many mothers in the present study adopting self-medication or approaching unqualified practitioners. The study generates evidence of an association between education levels and the differentiation between upper and lower respiratory tract infections; this, in turn, is a prerequisite for adequate treatment of ARI and thus contributes to achieving to some extent a reduction in under-five mortality. Simultaneously working on the long-term dream of "Health for All," which can be achieved through equitable distribution of resources, viz. employment generation, better economic conditions, better housing, adequate nutrition, no discrimination on the basis of caste, class, religion, or gender, women's empowerment, the provision of quality educational and health services for all, etc., is a more sustainable solution for all health problems.

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