

## Perception and Healthcare Seeking Behavior in Acute Respiratory Infection among Parents of Under Five Children attending a Tertiary Care Center of Banke

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## ABSTRACT

### Introduction

Acute respiratory infections (ARI) are one of the leading and common causes of morbidity and mortality in children worldwide affecting under five children. Compared to high income countries, the incidence and frequency of ARIs pose a significant burden in low- and middle-income countries. The purpose of the study was to find out the perception and health care seeking behavior of ARI among parents of under five children.

### Methods

A cross-sectional descriptive design with non-probability purposive sampling was used in the Pediatrics outpatient department of Nepalgunj Medical College Teaching Hospital. Data were collected using interview semi-structured questionnaires. A total of 187 parents attending OPD with their children were included in the study. Ethical approval was obtained from Nepal Health Research Council. Descriptive and inferential statistics used to analyze finding.

### Results

Sixty-five percent respondents were from age 25–35 years. Among them two-third were female; 44.4% educated, 42.8% were homemaker. Nearly half of the respondents had single child; 40.6% of children between 1-3 years; two-third (67.4%) were male. Majority (97.3%) had heard about acute respiratory infections and aware about acute respiratory infections. Majority (94.1%) perceived pneumonia as one of the common respiratory infections and (89.8%) perceived about cold exposure as cause of ARI.

### Conclusion

More than half parents perceived about ARI in under five children. Almost all aware about increase temperature and respiratory distress were severe symptoms of ARI and there were significant association with knowledge and socio demographic variables such as ethnicity, education and occupation.

### Keywords

Acute respiratory infections (ARI); behaviour; children under five; healthcare; parents; perception

## INTRODUCTION

One of the main causes of acute illness and hospitalization of children under five in Nepal is acute respiratory infection (ARI).<sup>1</sup> According to WHO, number of ARI-related deaths in under five children was about 2.1 million, deaths annually. Each year about 10.8 million children die due to ARI.<sup>2</sup>

Pneumonia in developed country is 3–4%, while it is high 20–30% in developing country, due to malnutrition, low birth weight and air pollution.<sup>3</sup> Based on clinical presentation, the WHO has classified pneumonia as severe or extremely severe, which supportive care such as oxygen therapy, airway suctioning, hydration and nutritional management, antimicrobials and close monitoring. Contributing factor to the delay in seeking treatment for pneumonia is the caregiver's ignorance of the warning signs and symptoms of pneumonia.<sup>4</sup> The goal is to eliminate child morbidities are preventable by 2030 and reduce the mortality children under five to 25/1000 live births.<sup>5</sup> ARIs account for 30% to 50% of all pediatric outpatient up to 30% of pediatric admission in underdeveloped countries and they contribute to 3.5% of the world's illness.<sup>6</sup> In a study's findings of ARI, 60.3% respondents had insufficient knowledge and 39.7% sufficient.<sup>7</sup> In 2016, million children under five lost their lives worldwide.<sup>8</sup> A study in Kathmandu, reported 80.8% of child's condition got worse. 65.4% mothers, preferred to go government hospitals. They perceive severity of the sickness and distance of medical facilities were the main reasons for not seeking treatment.<sup>9</sup> A study by Nellor, 15% have a moderate illness and 34% have severe infection.<sup>10</sup> So this study was done to find out the perception and health care seeking behavior of ARI among parents of under five children.

## METHODS

A descriptive cross-sectional design with purposively selected participants in outpatient of Pediatrics Department of Nepalgunj Medical College Teaching Hospital. Data was collected by interview method using semi structured questionnaires, tool was developed by researcher themselves and was validated with concerned pediatric experts. A total of 187 parents from OPD with their children were included in the study. Non probability purposive sampling technique was used.

Ethical approval obtained from Nepal Health Research Council (NHRC). Data was collected by the researcher along with one enumerator for two months (October to December 2021). Descriptive statistics (frequency, percentage, mean and standard deviation) and inferential statistics (chi square) used to analyze and present findings.

## RESULTS

Regarding socio demographic information of the respondents show more than half of the respondents (65.8%) fall under the age group of 25 – 35 years. Similarly, more than two-third of the respondents were female. Likewise, nearly half of the respondents (48.1%) were from Brahmin/Chhetri. Majority of the respondents (94.1%) followed Hinduism. Respondents educated up to secondary level were 44.4%. and, 42.8% of respondents were homemaker while remaining were involved in service, business, agriculture, labor and abroad.

Regarding child related socio-demographic characteristics of the respondent shows that nearly half (46.5%) of the respondents had single child while 38% of the respondents had two children. About 40.6% of children were between 1-3 years of age. Similarly, two-third (67.4%) of the children were male and one – third (32.4%) were female respectively

Regarding perception of acute respiratory infections (ARI), its common age and causes among respondents reveals majority of the respondents (97.3%) have heard about acute respiratory infections. Almost all of the respondents (98.8%) were aware that below 5 years is the most common age group for acute respiratory infections among children. Majority of the respondents (94.1%) identified Pneumonia as one of the common respiratory infections in children. Similarly, most of

**Table 1.** Perception of sign/symptoms and complications of acute respiratory infections among respondents (n= 187)

Characteristics	Number (%)
Signs and symptoms of common cold*	
Running Nose	172(92)
Irritability	149(79.7)
Less Interest in feeding	146(78.1)
Difficult to nasal Breath	126(67.4)
Signs and symptoms of severe respiratory infections*	
Fast Breathing	148(80.4)
Nasal flaring during inspiration	179(97.3)
Unable to feeding	119(64.7)
Fever	110(59.8)
Irritability	70(38.0)
Complications of ARI*	
Lung abscess	99(53.5)
Pleural effusion	94(50.8)
Atelectasis	134(72.4)
Otitis media	18(9.7)

\*Multiple response

**Table 2.** Healthcare seeking behavior with prevention and treatment of acute respiratory infection among respondents (n= 187)

Characteristics	Number (%)
Preventive measures of ARI*	
Breastfeeding up to 2 years	160 (86)
Timely vaccination	169 (90.9)
Provide nutritious diet	144 (77.4)
Away from smoke/dust/pollution	89 (47.8)
Maintenance of personal hygiene	104 (55.9)
Maintain environment sanitation	27 (14.5)
Home Remedies for ARI*	
Keep warm	179 (96.2)
Measure fever	51 (27.4)
Continue breastfeeding	79 (42.5)
Cold compress during fever	93 (50.0)
Clean nasal secretion	145 (78.0)
Keep rest	62 (33.3)
Give warm liquid drink	55 (29.6)
Open door and window	36 (19.4)
Awareness of vaccine for prevention of pneumonia	91 (48.7)
First health seeking for treatment of ARI	
Traditional Healer	5 (2.7)
Clinic	68 (36.4)
Health Post	61 (32.6)
Hospital	53 (28.3)

\*Multiple response

the respondents (89.8%) known about exposure to cold as cause of acute respiratory infections.

Table 1 depicts that most of the respondents (92%) were aware about running nose, 79.9% were aware about irritability, (78.1%) were aware about less interest in feeding and (67.4%) were aware about difficult to nasal breath as signs and symptoms of common cold. Likewise, Majority of the respondents (97.4%) were aware about nasal flaring during inspiration and (80.4%) were aware about fast breathing as sign and symptom of severe respiratory infections. Most of the respondents (72.4%) expressed atelectasis whereas (53.5% and 50.8%) expressed Lung abscess and Pleural effusion as complications of acute respiratory infections respectively.

Table 2 depicts that majority (90.9% and 86%) of the respondents had knowledge on timely vaccination and breastfeeding up to 2 years as preventive measure of respiratory infections respectively. Likewise, most (96.2%) of the respondents would adopt as keeping warm while (78%) would clean nasal secretion as home remedies to treat respiratory infections. Almost half of the (48.7%) respondents were aware about

**Table 3.** Respondent's level of perception on acute respiratory infections (n= 187)

Level of Perception	Number (%)
Adequate ( $\geq$ mean score)	96 (51.3)
Inadequate ( $<$ mean score)	91 (48.7)

vaccine for prevention of pneumonia. About 36.4% of the respondents had choose nearby clinic as a first choice of treatment, while 32.6% of the respondents had choose health post and 28.3% of them choose hospital.

Table 3 shows that just more than half (51.3%) of the respondents had adequate perception while 48.7% of the respondents had inadequate perception regarding acute respiratory infections. Mean level of awareness was 25.364 with SD  $\pm$  6.915.

Table 4 shows the association between perception and health seeking behavior among respondents with sex, age, ethnicity, religion, education and occupation. Ethnicity, educational status and occupation were found to have significant association with the perception and health seeking behavior of respondents. More than half (62.2 %) of the respondents of Brahmin/Chhetri ethnicity have adequate perception as evidenced by the P value 0. 036. One third (74.4%) of respondents with educational status of bachelor degree and above have adequate perception and health seeking behavior as evidenced by P value 0.004. Similarly, respondents involved in service have adequate perception as evidenced by P value 0.000.

Table 5 shows the association between number of children, age of child and sex of child with the perception and health seeking behavior of parents regarding acute respiratory infections. It shows that no any of variables have significant association.

## DISCUSSION

In this study revealed 97.3% respondents had heard of ARI, primarily through the media (82.4%). Respondents aware that fever is one of the typical ARI symptoms. A similar study conducted in Nepal showed that a majority of the respondents had heard of ARI (82%), symptoms, with nearly half of the respondents (46%) believing that fever was the main symptom of ARI, while only 13.6% indicated that it was a sign and symptom of ARI.<sup>11</sup> In this study, 86% sought medical attention from doctors, 68.4% preferred to visit a pharmacy for medication. Respondents were aware of two severe symptoms of ARI: elevated fever (96.5%) and respiratory distress (84.6%). Regarding home management when their child had a simple cough or cold, 87.1 % of mothers continued to breastfeed, 86.3% massaged hot oil into the child's chest and back, and the



**Table 4.** Association between perception of health seeking behavior of ARI and selected socio-demographic variables

Characteristics	Group	Level of Awareness		Chi-square	p value
		Adequate n (%)	Inadequate n (%)		
Gender	Male	25 (50.0)	25(50.0)	0.049	0.87
	Female	71(51.8)	66(48.2)		
Age	≤ 25 years	23(45.1)	28(54.9)	1.093	0.58
	26 – 35 years	66(53.7)	57(46.3)		
	≥ 36 years	7(53.8)	6(46.2)		
Ethnicity	Brahmin/Chhetri	56(62.2)	34(37.8)	10.301	0.04*
	Janajati	22(40.0)	33(60.0)		
	Madhesi	6(37.5)	10(62.5)		
	Dalit	9(56.3)	7(43.8)		
	Muslim	3(30.0)	7(70.0)		
Religion	Hindu	93(52.8)	83(47.2)	3.037	0.22
	Muslim	3(30.0)	7(70.0)		
	Christian	0(0.0)	1(100.0)		
Education	Can't Read and Write	0(0.0)	3(100.0)	17.178	0.004*
	Can Read and Write	6(35.3)	11(64.7)		
	Primary education	6(30.0)	14(70.0)		
	Lower Secondary	14(56.0)	11(44.0)		
	Secondary Education	41(49.4)	42(50.6)		
	Bachelor and above	29(74.4)	10(25.6)		
Occupation	Homemaker	33(41.3)	47(58.8)	25.170	<0.001*
	Service	37(78.7)	10(21.3)		
	Business	12(54.5)	10(45.5)		
	Agriculture	8(28.6)	20(71.4)		
	Labor	6(66.7)	3(33.3)		
	Others	0(0.0)	1(100.0)		

\*P-value significant ≤ 0.05 level (chi-square test): \* = Significant association

**Table 5.** Association between perception of health seeking behavior of ARI and selected child related variables

Characteristics	Group	Level of Awareness		Chi-square	p value
		Adequate n (%)	Inadequate n (%)		
Number of Children	One	47(54.0)	40(46.0)	1.419	0.49
	Two	37(52.1)	34(47.9)		
	More than two	12(41.4)	17(58.6)		
Age of Child	< One year	34(50.7)	33(49.3)	2.630	0.27
	1 -3 years	35(46.1)	41(53.9)		
	3 – 5 years	27(61.4)	17(38.6)		
Sex of Child	Male	63(50.0)	63(50.0)	0.276	0.64
	Female	33(54.1)	28(45.9)		

\*P-value significant ≤ 0.05 level (chi-square test): \* = Significant association

remaining respondents gave the juice made from tulsi leaves with ginger and honey. Seventy-three percent of the respondents were able to identify the cause of ARI. The majority (97.1%) stated cold food or drink as the primary cause of ARI, while 41.8% stated to the presence of organisms. The majority (84%) were ignorance of ARI preventive measures. A similar study conducted in India which results showed most of them (97.0%) were aware that pediatricians should be consulted in case of ARI in children. The most common symptoms perceived were cough (58.0%) and fever (25.5%). Rapid breathing (33.0%) was the most commonly perceived danger sign of ARI.<sup>12</sup>

The result of the study showed that more than half (51.3%) respondents had adequate perception regarding ARI, 48.7% had inadequate perception about ARI. In contrast to our study, a study conducted in Nepal showed that 83.9% of respondent had satisfactory level of knowledge and 10.7% had poor level of knowledge and only 5.5% had excellent level of knowledge regarding ARI.<sup>13</sup>

The result of the study showed that there is no any significant association between level of perception regarding ARI and health seeking behavior with age of the mother, religion, sex of the child, age of child, number of child which is similar to our study, a study conducted in Nepal showed that there no significant association between level of knowledge regarding ARI and its management with age of the mother, age of the child, religion, mother's, family type and area of residence whereas a significant association was not found between level of knowledge regarding ARI and its management ( $p < 0.025$ )<sup>14</sup>.

According to finding, it is recommended that community awareness program regarding ARI can be conducted to prevention of respiratory infection among under five children. It is necessary to put more effort into educating these mothers about the importance of early detection and seeking appropriate health care for ARI in their children.

## CONCLUSION

More than half of the parents had adequate knowledge about ARI in under five children. Almost all parents were aware that increase in temperature and respiratory distress were severe symptoms of ARI. There were significant association with parents' knowledge and socio demographic variables such as ethnicity, education and occupation. More than half parents had good perception regarding ARI.

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## CONFLICT OF INTEREST

The author(s) declare that they do not have any conflicts of interest with respect to the research, authorship, and/or publication of this article.

## AUTHOR CONTRIBUTIONS

Conceptualization, Proposal development, Original draft, tool development: Ambika Chand, Uma Devi Ranjitkar. Methodology, ethical approval, data collection, data analysis: Ambika Chand. Manuscript development and submission: Ambika Chand, Uma Devi Ranjitkar

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