

Original Article

Knowledge about Acute Respiratory Infection and Home Care Practice among Mothers of Under Five Years Children in Hima Rural Municipality, Jumla, Nepal

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ABSTRACT

Background and Objectives: Acute Respiratory Infection (ARI) is defined as acute infective inflammatory changes in any part of respiratory tract, from the nasal mucosa to the alveoli, with an alteration in the respiratory physiology. ARI is a leading causes of mortality and morbidity in under-five children worldwide. This study aimed to assess knowledge about acute respiratory

infection and home care practice among mothers of under-five year's children and to determine the factors associated with it among mothers of under five children in Hima Rural Municipality, Jumla.

Materials and Methods: The community based cross sectional study was conducted. Data was collected using systematic random sampling technique method and face to face interview was conducted using pretested semi-structured questionnaire. Data entry was used Epi-data 4.6 version and analyzed by using SPSS 20.0 version.

Results: About 94.9% of the participant's mother had heard about the ARI and 24.9% participant's mother had high level of knowledge about ARI. 70.8% participants keep the child in a room with window and door close the room warm. As prevention and control highest percentage of the participants mothers 61.1% preferred to give Tito leaf tea. 59.1% mother were breast feeding than frequently to their ARI babies.

Conclusion: The most of the women had knowledge about ARI. More than half of mothers

preferred health facility for neighbor child as a choice of treatment. Most of the mothers kept their child in a room with window and door closed to keep the room warm. More than half reduce fever by cold sponge and wrap the child with tight and thick when child had ARI. Most of the ARI cases were treated at home and cured. Among total participants less than half followed health post after not cured at home.

Keywords: Acute Respiratory Infections, Knowledge, Practice

INTRODUCTION

Acute Respiratory Infection is defined as acute infective inflammatory changes in any part of respiratory tract, from the nasal mucosa to the alveoli, with an alteration in the respiratory physiology [1]. ARI is infections of the respiratory system that are caused by bacteria or viruses, have an evolution of less than 15 days, and manifest with symptoms like coughing, nasal congestion and obstruction, sore throat, dysphonia, or respiratory distress, whether or not they are accompanied by fever. The most common symptoms, which are typically caused by viruses, include pharyngitis, acute otitis media, and rhinitis [2].

It is one of the major contributors of morbidity and mortality in children and has a significant financial impact. It is the primary cause of under-five using health services. The prevention of it is a major public health priority, particularly in developing nations. Both lower respiratory infection (LRI) and upper respiratory infection (URI) are constituted by it [3]. AURI includes nasopharyngitis, pharyngotonsillitis and otitis. And ALRI includes epiglottitis, laryngo tracheitis, bronchitis, bronchiolitis and pneumonia [4].

Home care management of ARI can be defined as the process of management of ARI by using homemade nutritious food, herbal solution, maintain suitable environment, season appropriate cloth and other preventive measures to control ARI without medicine [5]. The risk factors for ARI, are lack of awareness, insufficient coverage of immunization, low level of parental education, low level of income status, poor hygiene habit, primitive sanitary environment, lack of early check-up malnutrition, and polluted domestic environment. The national Control program has given major importance to increase the awareness to public regarding home care management and referral of ARI children through the caretaker. But still very few mothers know about home care management or seek medical treatment. As a result the under five children mortality due to ARI is very high [6].

Although ARI remains a widespread public health problem in most developing countries, there are very few studies on the knowledge about acute respiratory infection and home care practice among under five years children mother in Nepal. Because of its impact on cognitive development and physical growth, studies on the magnitude of ARI among mother have paramount importance. Therefore, this study was to determine the knowledge and home care practice among mother of under-five children in Hima Rural Municipality, Jumla, Nepal.

MATERIALS AND METHODS

Study design and area: A community based cross-sectional study was conducted on mothers of under-five children in Hima Rural

Municipality, Jumla. A total of 237 mothers of under-five were participated in this study. The mother of under-five children who give us the permission to carry out this study were included. Data were collected from semi-structured questionnaire.

Sample size:

The sample size is calculated by the following formula and it was 237

$$\text{Sample size } (n) = z^2pq/d^2$$

Children of Bhaktapur District, Nepal
Proportion of Knowledge of home care practice of ARI is about 83% [1] $q=17\%$

$d =$ margin of error set at 5% i.e. 0.05, we know

$$\text{Sample size } (n) = z^2pq/d^2$$

$$\text{Sample size } (n) =$$

$$(1.96)^2 * 0.83 * 0.17 / (0.05)^2$$

$$(n) = 216$$

$$n = 216$$

Here 10% non-response rate was added

$$= 216 + 10\%$$

$$= 216 + 21$$

$$= 237$$

i.e. The desired sample size was 237.

Sampling Interval $k = N/n$

Sampling technique: The systematic random sampling method was used to select the participants. Out of total of 7 wards 4 wards were selected randomly. From each ward list of under 5 children were obtained and participants selected using again systematic random sampling.

Inclusion and exclusion criteria:

Participant of study should be permanent resident from ward and should be the mother had under-five children. Those who gave consent for the study. Mother had children more than five years were excluded.

Statistical analysis: Chi-square test was used to establish the association between the categorical variables. p-value 0.05 was taken as for statistical significant.

Ethical consideration: Ethical clearance letter was taken from Institutional Review Committee (IRC) of Karnali Academy of Health Sciences, Jumla (Ref: 079/80/05). Formal permission was taken from local authority. Written informed consent was taken from each Participant. Participants were assured as information received from them was used for research purpose only. Participants dignity was maintained by providing right to withdraw from the interview at any time. Confidentiality of the participants was maintained.

RESULTS

Table 1 shows that most of the under-five mother are of 27-30 years of age i.e. 30.3% and 78.9% mothers were depend on agriculture. 49.3% of mothers had basic education and only 40.5% live in joint family. Among 237 respondents number of under five children in their family has 1 child i.e. 83.6%.

Table 2 shows that most of the under-five mother use modern types of stove (smokeless chulo) 87.7%. Kachaa house was the most commonly seen 78.0%, ventilation status of housing was satisfactory i.e. 70.1% and 88.7% under-five mother do not smoke at all.

Table 3 show 94.9% of the respondents has heard about ARI and 33.3% has heard from FCHV. 98.2% know the sign and symptoms of ARI in which cough was the main sign and symptoms. Fast breathing 90.04% was the

Table 1: Social-demographic characteristics of participants

	Number	Percentage
Age of Respondents		
19-22	45	18.9
23-26	65	27.5
27-30	72	30.3
31-35	55	23.3
Total	237	100
Mean Age: 26.92		
Occupational of Respondents		
Agriculture	187	78.9
House maker	29	12.2
Business Women	12	5.1
Service	9	3.8
Total	237	100
Education of Respondents		
Illiterate	19	8.2
Literate	27	11.3
Basic education	117	49.3
Secondary level	53	22.3
Bachelor level	15	6.3
Bachelor above level	6	2.6
Total	237	100
Types of family		
Nuclear	108	45.5
Joint	96	40.5
Extended	33	14.0
Total	237	100
Number of child		
1 child	198	83.6
2 child	39	16.4
Total	237	100

Table 2: Observation of respondents household

Housing Environment:		
Types of stove	Number	Percentage
Traditional stove	13	5.6
Modern stove	208	87.7
Gas (LPG) stove	16	6.7
Total	237	100
Types of house		
Pakka	13	5.5
Kachha-Pakka	39	16.5
Kachha	185	78.0
Total	237	100
Ventilation Status		
Good	20	8.4
Satisfactory	168	70.1
Poor	49	20.6
Total	237	100
Smoking Status of respondents		
Yes	27	11.3
No	210	88.7
Total	237	100

Table 3: Knowledge regarding ARI of the respondents

	Number	Percentage
Heard about ARI (n=237)		
Yes	225	94.9
No	12	5.1
Total	237	100
Source of information about ARI (n=225)		
FCHV	75	33.3
By news-paper	48	21.3
Health worker	39	17.3
Media	13	5.7
Others	50	22.4
Total	225	100
Know about signs and symptoms of ARI (n=225)		
Yes	221	98.2
No	4	1.8
Total	225	100
Sign and Symptoms of ARI (n=221)		
Cough	150	67.88
Running nose/blocked nose	48	21.72
Sore throat	23	10.40
Total	221	100
The danger signs and symptoms of ARI in children (multiple response) (n=221)		
Fast breathing	190	90.04
Malnutrition	26	12.32
Cold clammy skin/chest in drawing	125	56.56
Sleep child	15	7.10
High fever	52	24.64
ARI be treated at home (n=237)		
Yes	197	87.5
No	28	12.5
Total	237	100
Participants child was suffered from ARI ant any time (n=225)		
Yes	215	95.5
No	10	4.5
Total	225	100
Time duration of suffering ARI (n=225)		
1 times	27	12.0
2 times	52	23.2
3 times	84	37.3
More than 4 times	62	27.5
Total	225	100
Treatment suggestion by neighbors during ARI (n=225)		
Got to health facility	167	74.2
Do home treatment	48	21.3
Go to traditional healer	10	4.5
Total	225	100
Known about vaccination helps to prevent ARI death in children (n=237)		
Yes	237	100
Age of under -five children of participants family (n=237)		
0 to 1 years	42	17.73
2 to 3 years	71	29.95
3 to 4 years	56	23.63
4 to 5 years	39	16.45
5 years	29	12.24
Total	237	100

danger sign and symptoms of ARI in the children. 87.5% respondents say yes it can be treated at home and 37.3% under five children had already suffer from ARI at least 3 times. All 100% had great knowledge that vaccine can prevent death in the children caused by ARI.

Table 4 show 75.1% of the respondents has only medium level of knowledge followed by 24.9% of high level of knowledge.

Table 4: Level of Knowledge

Level of knowledge	Number	Percentage
Medium	178	75.1
High	59	24.9
Total	237	100

Table 5 shows home care practices among

Table 5: Home care practices of the respondents

	Number	Percentage
Place for keeping the child when suffering from ARI (n=237)		
In a room with window and door closed to keep the room warm	168	70.8%
In a room with window and door open or as usual	69	29.2%
Total	237	100
Practice of participants to reduce fever (n=237)		
Cold sponge	168	70.8
Keep the clothing light	48	20.2
Give more fluid	21	9.0
Total	237	100
Types of cloth to wrap the child (n=237)		
Light and loose cloth	86	36.2
Tight and thick cloth	106	44.7
As usual	45	18.1
Total	237	100
Practice of participants when the child suffered from decongestion and difficult breathing (n=237)		
Clearing the nose with clean cloth soaked in warm water	142	59.9
Steam inhalation	74	32.3
Vicks apply	21	8.8
Total	237	100

under-five children mothers. The result shows that 70.8% mothers keep their children in closed door and window to keep the room warm. For practice to reduce fever most of the mothers do cold sponging i.e. 70.8% during fever and almost half 44.7% mothers wrap their children with tight and thick cloths. During nasal decongestion and difficulties in breathing more than half of the mothers i.e. 59.9% clean the nose with clean cloth soaked in warm water.

Table 6 shows the association of practices with socio-demographic variables. There was no statically significant on age groups (p=0.244), education (p=0.713) and occupation (p=0.516) of the respondents. But types of family (p=0.029) had highly statically significant value.

Table 6: Association of Practice with Socio-demographic Variables (n=237)

Association between age group and practice level				
Age group	Practice level		chi-square	p- value
	Unsatisfactory	Satisfactory		
19-24 yrs	26 (10.97%)	52(21.94%)	1.352	0.244
25-35 yrs	67(28.28%)	92(38.81%)		
Total	93 (39.25%)	144 (60.75%)		
Association between education and practice level				
Education	Practice level		chi-square	P- value
	Unsatisfactory	Satisfactory		
Illiterate	23 (9.72%)	40(16.88%)	0.135	0.713
Literate	70 (29.53%)	104(43.87%)		
Total	93 (39.25%)	144 (60.75%)		
Association between Occupation and Practice level				
Occupation	Practice level		chi-square	P- value
	Unsatisfactory	Satisfactory		
Agriculture	77 (32.49%)	113 (47.67%)	0.420	0.516
Home maker	16 (6.76%)	31 (13.08%)		
Total	93 (39.25%)	144 (60.75%)		
Association between types of family and practice level				
Types of Family	Practice Level		chi-square	p- value
	Unsatisfactory	Satisfactory		
Nuclear	48 (20.26%)	96 (40.50%)	4.758	0.029
Joint	45 (18.99%)	48 (20.25%)		
Total	93 (39.25%)	144 (60.75%)		

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DISCUSSION

In this study, the mean age of mothers was 26.92 and 78.90% mothers were depend on the agriculture and only 3.8% were had service and 8.01% mothers were literate, only 2.6% had higher education and above and overall. 215 had ARI experience. Similar finding were reported by Farhad et al. the mean age of mothers was 27.61% and 96% mothers were housekeeper, and 50% of them were working in medicine-related

occupations. 56.1% of mothers had secondary school education. The education level of 20% mothers was more than high school degree. Overall 229 of children had ARI experience. The most common type of infection was common cold and the least common type was pneumonia [3].

Among study population 45.59% were belonged to nuclear and 40.50% joint family similar findings were reported in a survey study Gyawali et al. 2016 in that study 51%participants belonged to nuclear family while 49%participants belonged to joint [1].

In this study, respondent mothers had 215 ARI children in total 237 Out of 94.9% had heard about ARI in under-five children and 33.3% participants had received information of ARI from FCHV,21.3% participants had received information from read,17.3%

participants had received information from health worker, 22.4% participants had received information from others (friends, others family members) and from media 5.7% similar findings were reported by Aung and Thinn in that study respondent had 122 ARI children in total. All of participants had heard about episode of ARI in under-five children. 4.9% participants had received information from family members, 69.3% had received information from health workers, and from TV and radio 21.5% [7, 8, 9].

Among study population 79.7% participants keep the child in a room with window and doors closed to keep the room warm while 29.2% keep in a room with window and doors open or as usual when child had ARI. And the study revealed that cold sponge is being frequently used to reduce fever during ARI 70.8% participants replied that they reduce fever by cold sponge as well as 20.2% keep the clothing light. To reduce decongestion and breathing difficulty, clearing the nose of the ARI child with clean cloth wet in warm water was found 59.9% steam inhalation 32.3% and Vicks apply 8.8% and similar type of study majority 68% of the mothers keep the window and door close to keep the room warm [6].

Among the study population 6.3% respondent give honey and ginger, 29.3% respondent give salt, cumin and traumatic mixture warm water among them cured by home remedies and 57.8% mothers take health post for treatment whereas 9.7% mothers said that they seek traditional healer similar study were reporter by Gyawali et al. 2016 in that study more than 40% respondent give ginger- honey to eat was common home practice for the management

of ARI. 64.6% mother contact medical professional for the treatment of ARI whereas only 3.6% mothers said that they seek traditional healer [6, 1].

The majority 36.2% of respondent were using light and loose, 44.7% of participants were using tight and thick clothing and some using as usual for their ARI children and similarly the survey study the conducted by Sigdel et al. also showed that the majority 48% of participants were using light and loose clothing for their ARI children and as well as study conducted in Pakistan also show 52% of participants were using tight and thick clothing and some using as usual for their ARI children [8, 10].

CONCLUSION

The majority of respondents believed that ARI might be harmful and had adequate knowledge. More over half of the mothers chose to receive treatment at a health facility, while half of the mothers preferred home management of ARI in its early stages. For early stage ARI, home management was favored by half of the participants. Most of the ARI cases were treated at home and got cured. Few mothers go to health post if home treatment get failed. Therefore, the role of proper home base treatment needs to be emphasized for under five mothers to reduce preexisting ARI. These recommendations would hold true in developing countries such as Nepal where ARI is most common under children.

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Author's Contribution

Concept, design, supervision, literature review, manuscript writing-**BP**; data collection, literature review, writing, revision—**GBR**; interpretation, literature review, 2nd draft writing, critical review- **KP**, **BPS**. All the Authors have equally contributed to this research.

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