

## Knowledge, Attitude and Practice of Mothers on Acute Respiratory Infection in Children under Five Years in Saudi Arabia, 2017

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### ABSTRACT

**Background:** management and prevention of acute respiratory infections (ARI) is a worldwide problem especially in developing countries. Mothers are the caregivers of their children and thus their knowledge could be used as preventive measure for the disease.

**Objectives:** assessing the knowledge, attitude and practice (KAP) of Saudi mothers toward ARI in children less than five years old in the Kingdom of Saudi Arabia.

**Methods:** the study included 733 mothers admitted to a random sample of PHC from different districts of KSA. The mothers were interviewed and asked to fill up a predesigned questionnaire during the period from February 2017 to June 2017. The questionnaire comprised of 4 parts including the mothers' demographics and KAP. **Results:** the mean age of mothers was 41.3 years old and the duration of marriage was from 10-20 years in most of mothers (41.9%). The majority of participants had college degree (53.9%) and 44% of subjects were working mothers. Most of subjects had good knowledge about that ARI is a disease of both upper and lower respiratory infection, pneumonia as a complication of ARI, the overuse of antibiotic and bacterial resistance and cough being the most common symptom of ARI. Poor knowledge was related to the use of antibiotics and consulting a physician if children had ARI. The knowledge score of mothers was good in 46% of subjects and 54% have insufficient knowledge. The attitude and practice of mothers was poor among more than half of the participants. **Conclusion:** most of Saudi mothers had inadequate, knowledge, attitude and practice toward ARI. The better understanding and sufficient knowledge was significantly correlated with young ages, short duration of marriage and higher education.

**Keywords:** KSA, KAP, Acute Respiratory Infections (ARI), Primary Health Care.

### INTRODUCTION

The most common cause leading to morbidity and mortality among children under five years old is acute respiratory infection (ARI) that results in high burden of economic costs and the most important cause for children admission to health services among children<sup>(1)</sup>. It includes upper respiratory infection (common cold, ear infection, tonsillitis) and lower respiratory tract infection which presented as pneumonia with increased respiratory rate<sup>(2)</sup>. ARI etiological agents are *Staphylococcus aureus*, *Haemophilus influenzae* type b (Hib), *Streptococcus pneumoniae*, and other bacterial species. Also, there are some viral agents including measles virus, respiratory syncytial virus (RSV), influenza virus, human parainfluenza viruses and varicella virus<sup>(3, 4)</sup>. The estimated rate of ARI morbidity among children less than 5 years in KSA was 50% as reported in health care centers. Also, a high rate of using antibiotic and other drugs were found to induce ARI. The excessive use of X-rays and laboratory investigations<sup>(5, 6)</sup> are promoting factors in the spread of ARI. The assessment of parent's KAP Received great attention by many research workers<sup>(7-9)</sup>. Many

parents use a potentially harmful herbals and remedies with wrong conceptions, also the lack of adequate knowledge about the correct method of applying antibiotics in the medical care of young children highlighted the importance of intensive research studies in the field of intensifying the use of proper preventive measures in dealing with ARI infected young children<sup>(10)</sup>. The objective of the study was to evaluate the KAP of Saudi mothers toward acute respiratory tract infection in children less than five years.

### METHODS

The cross sectional study was approved from the ethical committee of the faculty of medicine then was conducted at a random sample of Primary Health Care Centers (PHCCs) in KSA during the period from February 2017 to June 2017. Twenty four health care centers were randomly included in the study using the stratified random sampling technique in which a representative sample of 733 Saudi mothers admitted to PHCC for seeking health care for their children. The mothers were interviewed separately and asked to fill-up a self-administrated

questionnaire to assess their KAP toward ARI in children less than 5 years old. An informed consent was taken from the mothers enrolled in the study.

**Study tools**

A simple form of Arabic language questionnaire was distributed among the included mothers. The review was designed and reviewed in accordance with other published studies. A pilot study was carried out on 20 mothers prior to data collection and the results of this study were not included in the present study. The final questionnaire consisted of 4 parts including the demographics, knowledge, attitude and practice pattern of included subjects regarding ARI in children. The study was approved by the Ethics Board of King Khaled University.

**Statistical analysis**

The Statistical Package for Social Sciences (SPSS, version 22) for windows was utilized for data processing. The quantitative data were shown as frequency and percentage. The association between variables was done by Pearson's correlation coefficient. P<0.05 was considered statistically significant.

**RESULTS**

**Demographics of the studied subjects:**

The characteristics of included mothers are shown in Table 1. The mean age of mothers was 41.3 years old with a range from 24-45 years old. The duration of marriage was less than 10 years in 29.3% and most of mothers (41.9) were married for 10-20 years and 28.8% were married for more than 20 years old. The majority of participants had college degree (53.9%), 33.7% of them had secondary school and only 12.4% of mothers were at primary school. About 44% of subjects were working mothers and the rest (65%) were jobless. The source of knowledge was TV in 32.75% of subjects, 25.2% used internet, 16.4% gained their knowledge from relatives and friends while 25.7% of mothers received their information from health care providers.

**Table (1): Socio-Demographic Characteristics of Respondents (733)**

<b>Age (year)</b>	41.3±2.7	24-45
<b>&lt;10 years</b>	215	29.3%
<b>10-25</b>	307	41.9%
<b>&gt;26 years</b>	211	28.8%
<b>Collage</b>	395	53.9%
<b>Secondary School</b>	247	33.7%
<b>Primary School</b>	91	12.4%
<b>Working</b>	322	44%
<b>Jobless</b>	411	56%
<b>TV</b>	240	32.7%
<b>Internet</b>	185	25.2%
<b>Relatives and friends</b>	120	16.4%
<b>Health care providers</b>	188	25.7%

**Assessment of knowledge of included subjects**

Data presented in table 2 show that the awareness of about 52% of mothers answered correct answers regarding that ARI affects both upper and lower respiratory infection . 48% showed inadequate knowledge with incorrect answers. Only 32.2% of subjects answered correct answers about the proper use of antibiotics for children with ARI and most of subjects (67.8%) had incorrect answers. Also, most of mothers (80.2%) had weak knowledge regarding the causes of ARI and only 19.8% had good knowledge. 68.3% of mothers had good knowledge regarding the pneumonia being the most common complication of ARI. Most of subjects (73.8%) had incorrect knowledge regarding consulting a physician if the child had ARI and only 26.2% had good knowledge. The overuse of antibiotics was regarded to drive bacterial resistance in 64.1% of subjects while 35.9% had poor knowledge. Also, 67.1% answered correctly regarding cough being the most common symptom of ARI and only 32.9% answered incorrectly.

**Table (2): Awareness of mothers regarding the ARI:**

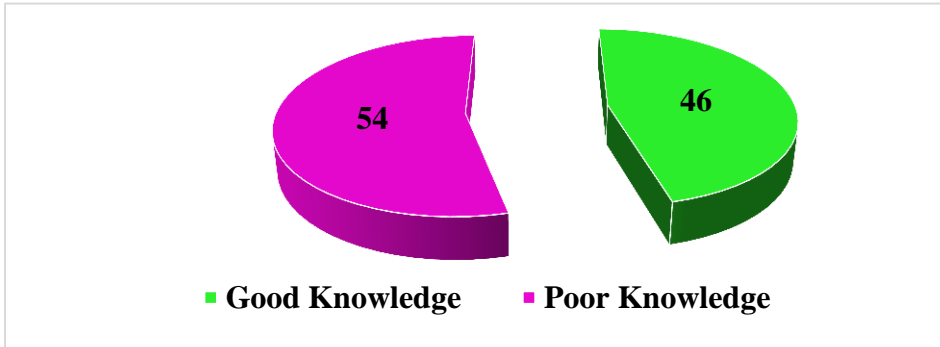
	Correct	Incorrect
<b>Q1:</b> ARI comprises upper and lower respiratory infection	381 (52%)	352 (48%)
<b>Q2:</b> Antibiotics should be used for children with ARI	236 (32.2%)	497 (67.8%)
<b>Q3:</b> ARI is of viral and bacterial causes	145 (19.8%)	588 (80.2%)
<b>Q4:</b> Pneumonia is a major complication of ARI	501 (68.3%)	232 (31.7%)
<b>Q5:</b> ARI necessitates consulting a physician	192 (26.2%)	541 (73.8%)
<b>Q6:</b> Overuse of antibiotic drives bacterial resistance	470 (64.1%)	263 (35.9%)
<b>Q7:</b> Cough is the most common symptom of ARI	492 (67.1%)	241 (32.9%)

**- Assessment of knowledge of the participants regarding to ARI**

The total knowledge score for mothers was good in 46% of subjects and 54% had poor knowledge among subjects (Table. 1&Figure. 1).

**Table (3): Knowledge of mothers toward ARI**

	Knowledge Score
<b>Good Knowledge</b>	337 (46%)
<b>Poor knowledge</b>	396 (54%)



**Figure 1. Respondent’s Knowledge about ARI in children less than 5 years**

**- Association between knowledge and demographics of included participants**

Table 4 reveals the association between knowledge scores and mothers’ demographics using Univariate logistic regression. The younger age, the lower duration of marriage, and higher educational level were significantly correlated with the good knowledge. On the other hand, working status showed no correlation with good knowledge.

**Table. (4): Association between hypertension knowledge and socio-demographic variables**

	Good Knowledge (n=337)	Poor Knowledge (n=396)	P-value
<b>24.00 - 34.00</b>	230 (80%)	90 (20%)	0.055
<b>35.00 - 45.00</b>	103 (31%)	306 (69%)	
<b>&lt;10 years</b>	162 (75.3%)	53 (24.7%)	0.015
<b>10-25</b>	108 (35.2%)	199 (64.2%)	
<b>&gt;26 years</b>	67 (31.8%)	144 (68.2%)	
<b>Collage</b>	211 (53.4%)	184 (46.6%)	< 0.0001
<b>Secondary School</b>	80 (32.4%)	167 (67.6%)	
<b>Primary School</b>	46 (50.5%)	45 (49.5 %)	
<b>Working</b>	(39.1%)	196(60.9 %)	0.521
<b>Jobless</b>	211 (51.3%)	200(48.7%)	

**- Assessment of subject’s attitude:**

Table. 5presents the attitude of mothers. 41.9% of subjects had good attitude toward going to physician when child had symptoms of ARI but the most of them (58.1%) had insufficient knowledge. Most of mothers had wrong attitude toward using antibiotics by themselves for children with ARI. Only 35.5% had positive attitude toward using home remedies for treatment of ARI and 64.55 had no attitude to use home remedies for treatment of ARI. Also, 55.8% of mothers had positive attitude toward using paracetamol and ibuprofen without consulting physician.

**Table (5): Attitude of mothers toward ARI (n=733)**

Every time I would go to the physician if my child have fever and cough	No.	Percentage (%)
Yes	307	41.9
No	426	58.1
<b> </b>		
Yes	428	58.4
No	305	41.6
<b> </b>		
Yes	260	35.5
No	473	64.5
<b> </b>		
Yes	409	55.8
	324	44.2

**Practice pattern of included subjects:**

Table. 6 demonstrates the practice pattern of mothers toward ARI. 53.3% of mothers practiced self-medication without consulting doctors and 46.75 don't practice self-medication. On the other hand, most of the participated mothers (61.8%) had positive attitude toward consulting a pediatrician but 38.2% had poor practice. 54.4% of subjects asked the physician to prescribe antibiotic for ARI. While 45.5% don't ask for antibiotics. 77.8% of subjects don't ask physician about using home remedies and herbs and use them by themselves and only 22.2% of subjects asked the physician about the effect of using herbs and remedies.

**Table (6): Practice pattern of mothers toward ARI (n=733)**

<b>1. Practicing self-medication in ARI</b>	<b>391(53.3%)</b>	<b>342(46.7%)</b>
<b>2. I consult a pediatrician when the signs and symptoms begin</b>	<b>280(38.2%)</b>	<b>453(61.8%)</b>
<b>3. I ask the physician to prescribe antibiotic for ARI?</b>	<b>399(54.4%)</b>	<b>334(45.5%)</b>
<b>4. I ask the physician about the home remedies and herbs</b>	<b>163(22.2%)</b>	<b>570(77.8%)</b>

**DISCUSSION**

Mothers are the caregivers of children and they are responsible for maintaining good health for children than fathers. The good knowledge was related to ARI affects both upper and lower respiratory infection. The pneumonia being the most common complication of ARI, the overuse of antibiotic was regarded to drive bacterial resistance and cough being the most common symptom of ARI. However, poor knowledge was related to using antibiotics and consulting a physician if children had ARI. The knowledge score of mothers was good in 46% of subjects and 54% had inadequate knowledge.

Also, another study conducted in KSA showed that there was a deficiency in knowledge among mothers regarding the antibiotics, physician consultation and ARI's preventive measures<sup>(9)</sup>. Several worldwide studies showed

that most of mothers asked for antibiotics for children with ARI as this misconception may be due to parents fear of severe illness thus thought antibiotic would help them to get better fast<sup>(8, 11-13)</sup>.

The attitude and practice of mothers was poor among more than half of subjects and this could be due to wrong conceptions and knowledge as most of subjects use self-medications at home, don't consult doctors, or ask physician about the importance of home remedies. Also, many mothers ask physician for prescribing antibiotics. Similar results showed higher incidence of self-medication among mothers<sup>(8 {Memon, 2013 #20536})</sup>. Also, many mothers use herbs and home remedies for their children with ARI without consulting doctors<sup>(6, 14, 15)</sup>.

The younger age, the lower duration of marriage, and higher educational level were

significantly correlated with the good knowledge and this could be due to that younger women with lower duration of marriage have more time as well as being aware of new media and internet and thus could gain knowledge easily remove compared to older women.

In contrast, a recent study in KSA found a positive association between the older age, higher duration of marriage with mother's knowledge scores<sup>(9)</sup>.

On the contrary, another study showed that there was no significant association between knowledge score of mothers and their level of education and age<sup>(6)</sup>.

## CONCLUSION

Most of Saudi mothers had inadequate, knowledge, attitude and practice toward ARI. The better knowledge was significantly correlated with being young, lower duration of marriage and higher education. TV and consulting physicians are the most important sources of knowledge. A well planned health educational programs should be conducted.

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