

## Knowledge, Attitude and Practices towards Otitis Media in Saudi Arabia Community

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### ABSTRACT

**Background:** otitis media (OM) and its complications resulted in high prevalence of hearing loss and increasing the rates of health care visits with special regard to the developing countries.

**Aim of the work:** this study aimed to evaluate the knowledge, attitude and practice (KAP) toward otitis media among adult teachers in Kingdom of Saudi Arabia (KSA).

**Patients and Methods:** this is a cross sectional questionnaire based study and it was conducted among a random sample of teachers in KSA from March to June 2017. All the teachers were interviewed in their schools during the break period and answered the questionnaire that was comprised of four objects including the socio-demographics of subjects, knowledge, attitude and practice pattern of participants toward otitis media.

**Results:** the overall knowledge about the risk factors, disease prevention and serous type was improper. Also, a poor level of attitude and practice pattern was found among most of the subjects. The overall KAP of the teachers was poor among 58.8%, while 41.2% showed adequate KAP about Otitis media. The good KAP showed a significant association with higher economic level, while other variables showed no association with KAP including age, gender and cigarette smoking.

**Conclusion:** the suboptimal knowledge about otitis media would result in poor attitude and practice pattern which increased the prevalence and complications of otitis media. The economic level was associated with OM, thus it was considered a vital factor in prevention of otitis media.

**Keywords:** knowledge, attitude, practice, otitis media (OM), KSA.

### INTRODUCTION

The ear is responsible for hearing and equilibrium maintenance thus any disorders in the structure as well as function may result in progressive hearing impairment and decreasing the quality of life<sup>(1,2)</sup>.

Otitis media (OM) is defined as a disease of the middle ear associated with a group of multifaceted inflammatory and communicable conditions. The OM and its complications resulted in high prevalence of hearing loss and increasing the rates of health care visits with special regard to the developing countries<sup>(3,4)</sup>.

OM has different types including acute that is a self-limited disease with low mortality rates, but associated with high morbidity especially among children and the chronic type is the most common cause for hearing loss, delay in speech and academic performance<sup>(5-7)</sup>.

The prevalence of OM was reported to be 2-4% in Africa, Southeast of Asia and the countries located in the western pacific region, while it was less than 2% in Europe and Northern America<sup>(8)</sup>.

The risk factors for OM were malnutrition, family history, smoking, low economic studies. High prevalence of lung and

communicable diseases in the region<sup>(9)</sup>. Also, aging process, hypertrophy in adults, head and neck tumors could result in OM among adults<sup>(10,11)</sup>. Although the prevalence of OM among adults is less prevalent than children and most of OM studies concerned with OM in children. This study aimed to detect the KAP toward otitis media among Saudi adult population.

### SUBJECTS AND METHODS

An ethical approval was obtained from the Faculty of Medicine and primary schools included in the present study, then this cross sectional questionnaire based study was conducted among a random sample of teachers in KSA from March to June 2017.

Thirty primary schools were divided as 15 primary schools for girls and 15 primary schools for boys distributed all over KSA that were randomly chosen by multi-stratified randomized technique.

Then, a representative sample of 831 female and male teachers was interviewed during the study period.

All subjects offered written or oral informed approval consent for participating in the study.

**Study tools**

A pre-designed self-administrated questionnaire was written in simple Arabic and distributed among all the teachers who were interviewed in their schools during the break period and answered the questionnaire. After reviewing the data and collection of questionnaire data, the questionnaire was validated by 3 supervisors. The final form of the questionnaire comprised of four objects including the socio-demographics of subjects, knowledge, attitude and practice pattern of participants toward otitis media.

**The study was done after approval of ethical board of Umm Al-Qura university.**

**Statistical analysis**

The Statistical Package for Social Sciences (SPSS, version 22) was used for data analyses, where the descriptive variables were

shown as frequencies and percentage. The correlation was studied between the knowledge level and the demographics of participants using Chi-square test for proportions.  $P < 0.05$  was measured as statistically significant.

**RESULTS**

**Demographics of the studied subjects**

The characteristics of the participants were shown in **table 1**. The age of 37.9% of respondents was ranged from 20 to 35 years old, 47.7% aged from 36-50 years old, while 14.4% were older than 50 years. About 51.4% of subjects were males and 48.6% were females.

The majority of subjects were not smokers and 33.3% were smokers. The economic status was high among 29% of teachers, moderate among 64.6% of subjects and low among 6.4% of them.

**Table 1: socio-demographics characteristics of the included subjects (831 subjects)**

		No.	Percentage (%)
<b>Age</b>	<b>20-35</b>	315	37.9%
	<b>36-50</b>	396	47.7%
	<b>&gt;50</b>	120	14.4%
<b>Gender</b>	<b>Male</b>	427	51.4%
	<b>Female</b>	404	48.6%
<b>Cigarette smoking</b>	<b>Yes</b>	277	33.3%
	<b>No</b>	554	66.7%
<b>Economic status</b>	<b>High</b>	241	54.1%
	<b>Moderate</b>	537	45.9%
	<b>Low</b>	53	45.9%

**Assessment of Awareness of the included subjects:**

The overall knowledge of the respondents was moderate among most of them as indicated in **table 2**. The majority of subjects had adequate knowledge regarding the definition of OM (62.2%) and the higher prevalence among children than adults (58.5%). Also, most of them had good awareness regarding the common symptoms of acute type (51.5%), the complications of chronic type included hear loss and delay in speech and the use of antibiotics for treatment of OM (72.7%).

On the other hand, the poor knowledge was found regarding the causes of OM as only 28.3%

rated recurrent upper respiratory tract infection as the most common cause of OM, 22.6% knew that smoking is a risk factor for OM, 46.7% concluded that family history is a risk factor for OM, and 12.9% had good knowledge about the risks of malnutrition and low economic status on progression of OM.

Also, only 43% knew that OM is preventable disease. In addition, low knowledge about the serous type was found among 54.6% and the surgical intervention for serous type fluid (89.3%).

**Table 2: awareness of respondents according to otitis media (831)**

	Yes	No
1- Otitis media is an infection of middle ear	517(62.2%)	314(38.8%)
2- Otitis media is more prevalent among children than adults	486(58.5%)	345(41.5%)
3- The most common cause of OM is recurrent upper respiratory tract infection.	235 (28.3%)	596 (71.7%)
4- Smoking is a risk factor for OM among children and adult	188(22.6%)	643(77.4%)
5- Family history is a known risk factor for OM	388(46.7%)	443(53.3%)
6- Malnutrition and low socioeconomic status are risk factors for OM	107(12.9%)	724(87.1%)
7- OM is a self-limited disease	251(30.2%)	580(69.8%)
8- Common symptoms of acute otitis media are fever, pain, and irritability	428 (51.5%)	403 (48.5%)
9- Serous otitis media is very serious and associated with exudate from the ear	377(45.4%)	454(54.6%)
10- Chronic type is associated with hearing loss, delay in speech and academic performance	591 (71.1%)	240 (28.9%)
11- OM is preventable disease	357 (43%)	474 (57%)
12- OM is often treated with antibiotics	604(72.7%)	227(27.3%)
13- Fluid buildup in the middle ear can be drained surgically	89(10.7%)	742(89.3%)

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

The attitude toward OM was negative among most of respondents about modifying the lifestyle for protection against OM (71.5%), 59.1% tend to self-use of antibiotics for OM

treatment and 68.1% don't think that prevention was the best choice for OM. While, 68.6% of them were worried from the complications of OM (Table 3).

**Table 3: attitude of participants about OM (n=831)**

	No.	Percentage (%)
<b>Do you tend to modify your lifestyle to protect your-self and your family from OM risks</b>		
Yes	237	28.5
No	594	71.5
<b>Do you tend to use antibiotics for OM by yourself</b>		
Yes	491	59.1
No	340	40.9
<b>Do you feel worried from the complications of OM</b>		
Yes	570	68.6
No	261	31.4
<b>Prevention of the risk factors is the best choice for OM</b>		
Yes	265	31.9
No	566	68.1

**Practice pattern of the included subjects:**

Table 4 reviewed the health practice pattern of the teachers. The majority of subjects showed a good practice level regarding visiting physician for OM symptoms, 75.5% ask their doctors about the

causes of OM and 60% would follow the instructions of their physicians. While, only 33.3% would avoid the house dust, smoking and malnutrition for protection from OM.

**Table 4: practice pattern of respondents regarding AR (n=900)**

	Yes	No
1. I visit a physician when developing OM symptoms	514(61.9%)	317(38.1%)
2. Do you ask your doctor about the causes of OM	627(75.5%)	204 (24.5%)
3. I buy antibiotics for OM by myself	539(64.9%)	292 (35.1%)
4. I avoid house dust, smoking and malnutrition	277 (33.3%)	554 (66.7%)
5. I follow the physician’s instructions	499 (60%)	332 (40%)

**Level of overall KAP of included subjects:**

The KAP of the teachers was poor among 58.8%, while 41.2% showed adequate KAP about otitis media (Table 5).

**Table 5: respondents’ KAP of AR**

KAP level	Frequency	Percent (%)
Poor	489	58.8
Good	342	41.2
Total	831	100.0

**Association between knowledge and demographics of the included participants:**

Table 6 explained the relation between KAP level and participant’s characteristics using Chi-square test. The good KAP showed a significant association with higher economic level, while other variables showed no association with KAP including age, gender and cigarette smoking.

**Table 6: association between AR KAP and socio-demographic variables:**

	Good KAP (n=342)	Poor KAP (n=489)	P-value
<b>Age</b>			
20-35	133(38.9%)	182(37.2%)	0.68
36-50	158(46.2%)	238(48.7%)	
>50	51(14.9%)	69(14.1%)	
<b>Gender</b>			
Male	178 (52%)	249 (51%)	0.27
Female	164 (48%)	240 (49%)	
<b>Cigarette smoking</b>			
Yes	160 (46.8%)	254 (57.6%)	0.66
No	182 (53.2%)	372 (76.1%)	
<b>Economic status</b>			
High	160(46.8%)	81(16.6%)	0.001
Moderate	179(52.3%)	358(73.2%)	
Low	3(0.9%)	50(10.2%)	

**DISCUSSION**

A study showed that the KAP of most of participants was low indicating a lack of knowledge and a need for education enhancement. The overall knowledge about the risk factors, disease prevention and serous type was improper. Accordingly, inadequate knowledge was found among the Indian subjects in Nepal regarding the complications and risk factors of serous type of OM (12). In the same respect, a high prevalence of OM was found in

India and this was attributed to the low knowledge and poor practice pattern (13).

Also, the low knowledge of OM risk factors, prevention and complications was presented in many studies around the world (14-16). Moreover, the Saudi subjects in Riyadh City showed inappropriate knowledge was found among them regarding the risk factors, symptoms and preventive measures of OM (17). On the other hand, a study that was conducted in Rwanda showed adequate knowledge among most of the

caregivers of children about OM<sup>(18)</sup>. The low knowledge resulted in a poor level of attitude and practice pattern which was also shown in other studies<sup>(12, 13)</sup>. The higher economic study was associated with higher KAP scores thus modifying the lifestyle is a vital factor for protection and prevention against otitis media. Similarly, poverty was associated with higher prevalence rates of OM which was associated with low knowledge that would result in poor attitude and practice pattern<sup>(19-21)</sup>. The present study showed some limitations including that all the participants were teachers which means that they were highly educated and didn't resemble the whole population in Saudi Arabia. Also, limitations in transportations make it hard to reach some schools in rural areas. The sample size and sampling method were also major limitations thus the results can't be generalized.

## CONCLUSION

The suboptimal knowledge about OM would result in poor attitude and practice pattern which increase the prevalence and complications of OM. The economic level was associated with OM thus it was considered a vital factor in prevention of OM. There was an urgent need for public health education of Saudi subjects regarding the otitis media symptoms, risks and prevention.

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