

## Knowledge, Attitude and Practice About Allergic Rhinitis in Saudi Arabia, 2017

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### ABSTRACT

**Background:** allergic rhinitis (AR) is considered a worldwide health disease therefore the lack of knowledge would result in poor adherence to management and preventive protocols and increasing the prevalence of AR.

**Objectives:** evaluating the knowledge, attitude and practice(KAP) of Saudi adult subjects toward AR in Kingdom of Saudi Arabia (KSA).

**Methods:** a cross sectional study conducted on 900 Saudi adult subjects admitted to primary health care centers. The subjects were interviewed and filled up a questionnaire including the respondent's demographics, questions related to knowledge, attitude and practice.

**Results:** most of the respondents aged from 31-45 years old, 59.7% were females and 49% were graduated from college. 30% of participants had a family history of allergic rhinitis and 34% suffered from allergic rhinitis. Inadequate KAP was found among the participants with higher KAP scores related with higher educational degree. But there were no association between KAP level and gender or age.

**Conclusion:** an inadequate knowledge was found among most of respondents thus resulting in poor attitude and practice pattern. Also, higher educational levels were associated with higher KAP scores.

**Keywords:** KSA, Knowledge, attitude, practice, Allergic Rhinitis (AR).

### INTRODUCTION

Allergic rhinitis (AR) is a non-contagious disease of nasal hypersensitivity that occurs in response to an offending allergen that mediates the immunological inflammation. The major symptoms of AR are sneezing, nasal obstruction, rhinorrhea, and itching postnasal drip. The symptoms reveal spontaneously or after using medication<sup>(1,2)</sup>.

Allergic rhinitis is a global health disease that affects from 10 up to 20% of population however this is not the true prevalence as many patients don't consider AR as a disease<sup>(3)</sup>.

Despite being a non-severe disease, it impacts the social life, work productivity as well as academic performance<sup>(4,5)</sup>.

The most effective treatment for AR is to identify the allergen and prevent its occurrence. A gap was found between the knowledge about RA and the practice resulting in poor quality of life<sup>(6)</sup>.

The awareness of allergic rhinitis related must comprise the understanding of the etiological factors, treatment and preventive measures.

Adequate knowledge would significantly affect the attitude and practice level that include good relation with the doctor and appropriate management and enhancing the quality of life<sup>(7,8)</sup>.

### Aim of the study

This study aimed at assessing the KAP of adult population toward allergic rhinitis.

### SUBJECTS AND METHODS

After approval of the Faculty of Medicine and ethical committee of Health Care Facilities included in the study, this cross-sectional study was conducted on a random sample of Primary Health Care Centers (PHCCs) in KSA from March 2017 to July 2017. Fourteen Primary health care centers were randomly chosen using the stratified random sampling technique where a representative sample of 900 adult subjects admitted to PHCC for seeking health care during the period of study.

The inclusion criteria were age older than 18 years, both sexes, patients presenting with classic cold symptoms or signs of allergic rhinitis. Patients with chronic sinusitis were excluded from the study. All subjects gave a written informed consent for their approval to participate in the study.

### Study tools

A self-administered questionnaire with simple Arabic form was administered among the participants. The questionnaire was designed after reviewing the online database then the items were collected and revised then was validated after conducting a pilot study among 40 subjects who weren't included in the present study. The final questionnaire was comprised of four items including the demographics, knowledge, attitude and practice pattern of participants about allergic rhinitis.

### Statistical analysis

The data were collected then processed using Statistical Package for Social Sciences (SPSS, version 22) for windows. The responses of participants were represented as frequencies and percentages. The KAP for AR association with demographics of Saudi population was done using logistic regression analyses.  $P < 0.05$  was considered statistically significant.

**RESULTS**

**Demographics of the studied subjects:**

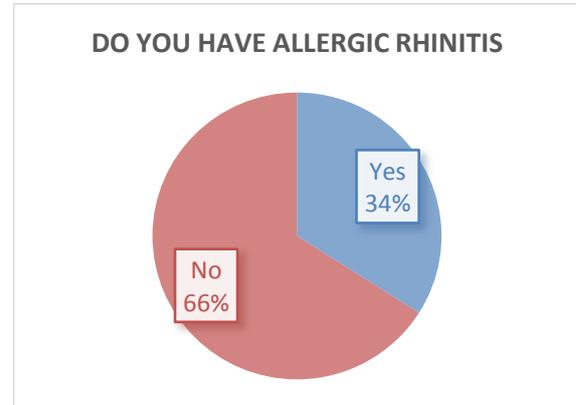
The socio-demographic characteristics of respondents are presented in Table 1. The age of respondents was 18-30 years old in 35.9%, 45.1% of participants were 31-45 years old and 19% were 46-60 years old. 59.7% of subjects were females and 40.3% were males. Most of participants (49%) were graduated from college, 31% of them had secondary school and 20% had a primary school. More than half of the participants were working and 45.9% were jobless. 30% of participants had a family history of allergic rhinitis.

**Table (1): Characteristics of participants(900)**

	No.	Percentage (%)
<b>18-30</b>	323	35.9
<b>31-45</b>	406	45.1
<b>46-60</b>	171	19
<b>Male</b>	363	40.3%
<b>Female</b>	537	59.7%
<b>Collage</b>	441	49%
<b>Secondary School</b>	279	31%
<b>Primary School</b>	180	20%
<b>Working</b>	487	54.1%
<b>Jobless</b>	413	45.9%
<b>Yes</b>	277	30.8%
<b>No</b>	632	69.2%

**Prevalence of allergic rhinitis**

Figure.1 shows the prevalence of allergic rhinitis among included subjects as 34% of participants suffered from allergic rhinitis while 66% declared not signs of allergic rhinitis.



**Figure1:** prevalence of allergic rhinitis among respondents

**Assessment of knowledge of included subjects**

The questions related to the knowledge about allergic rhinitis are shown in table 2. Most of participants has good knowledge regarding the fact that allergic rhinitis is not a contagious disease (63.3%). While, 48.4% of subjects have adequate knowledge regarding the definition of allergic rhinitis. Only, 19.8% of subjects had good knowledge regarding the prevention of allergic rhinitis and 21.8% know that nasal sprays could be used for treatment of AR. Also, 33.6% of participants answered correctly about the genetics role in allergic rhinitis and 66.4% had incorrect answers.

38.4% had adequate knowledge regarding the classic symptoms of AR and the rest 61.6% had a poor knowledge. Only 13.2% had good knowledge about the relationship between asthma, conjunctivitis and AR.

**Table (2): Awareness of respondents about allergic rhinitis**

	Correct	Incorrect
<b>Q1:</b> allergic rhinitis is a contagious disease.	570(63.3%)	330(36.7%)
<b>Q2:</b> allergic rhinitis is a hypersensitivity of nasal mucosa	436(48.4%)	464(51.6%)
<b>Q3:</b> AR could be prevented	290(19.8%)	704(80.2%)
<b>Q4:</b> nasal sprays could be used for treatment of AR	196(21.8%)	704(78.2%)
<b>Q5:</b> it is a genetically inherited disease	302(33.6%)	598(66.4%)
<b>Q6:</b> AR is linked to asthma and conjunctivitis	119(13.2%)	781(86.8%)
<b>Q7:</b> The classic symptoms of AR are nasal congestion, nasal itch, rhinorrhea and sneezing	346 (38.4%)	554 (61.6%)

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

The attitude of respondents is presented in table 3. Most of participants had a poor attitude regarding going to physician if having RA (76.7%), 77.8% don't worry about the side effects of using AR medications for long periods and 75% had negative attitude toward prevention of allergen in AR management. On the other hand, more than half of the participants (55.4%) had positive attitude toward asking the physician about the cause of the symptoms.

**Table (3): Attitude of respondents regarding AR (n=900)**

<b>Yes</b>	210	23.3
<b>No</b>	690	76.7
<b>Yes</b>	499	55.4
<b>No</b>	401	44.6
<b>Yes</b>	200	22.2
<b>No</b>	700	77.8
<b>Yes</b>	225	25
<b>No</b>	675	75

**Practice pattern of included subjects**

Table 4 shows the practice pattern of respondents. The practice pattern was poor among most of participants as only 29.4% will go to physician seeking for medication for AR symptoms. Also, only 32.1% would use nasal sprays for treatment. 22.2% of subjects will avoid house dust and smoke as preventive methods for AR and only 15.7% of subjects strictly follow the doctor's instructions. About 57.4% of respondent buy over the counter drugs without consulting a physician.

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

<b>1. I usually visit physician when developing symptoms</b>	<b>265 (29.4%)</b>	<b>635 (70.6%)</b>
<b>2. I may use steroid nasal sprays</b>	<b>289 (32.1%)</b>	<b>611(67.9%)</b>
<b>3. I buy over the counter drugs without consulting a physician?</b>	<b>517 (57.4%)</b>	<b>383(42.6%)</b>
<b>4. I avoid house dust and smoke</b>	<b>200(22.2%)</b>	<b>700(77.8%)</b>
<b>5. I strictly follow the doctor's instructions</b>	<b>141 (15.7%)</b>	<b>759(84.3%)</b>

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

Most of participants (70%) had inadequate KAP toward AR and 30% had good KAP about AR (Table 5).

**Table (5): Respondents' KAP of AR**

<b>KAP level</b>	<b>Frequency</b>	<b>Percent (%)</b>
Poor	630	70
Good	270	30
Total	900	100,0

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

Table6 illustrated the association between KAP scores and participants’ demographics using Univariate logistic regression. There was no association between the KAP with age and gender. But, the higher educational degree was significantly associated with good KAP.

**Table (6): Association between AR KAP and socio-demographic variables:**

	<b>Good Knowledge (n=270)</b>	<b>Poor Knowledge (n=630)</b>	P-value
<b>18-30</b>	79 (24.5%)	244 (75.5%)	0.52
<b>31-45</b>	135 (33.3%)	271 (66.7%)	
<b>46-60</b>	56 (32.7%)	115 (67.3%)	
<b>Male</b>	131 (36.1%)	232 (63.9%)	0.15
<b>Female</b>	139 (25.9%)	398 (74.1%)	
<b>Collage</b>	187 (42.4%)	254 (57.6%)	0.05
<b>Secondary School</b>	44 (15.8%)	235 (84.2%)	
<b>Primary School</b>	39 (21.7%)	141 (87.3 %)	

**DISCUSSION**

The prevalence of allergic rhinitis is global health concern as it affect about 10-45% around the world with wide spread variation <sup>(9, 10)</sup>. Across Europe, the AR prevalence is about 23% <sup>(11)</sup>while in the middle-east countries is 9% and the major allergen was dust <sup>(4)</sup>.

In Saudi Arabia, the prevalence of AR is significantly increased <sup>(12)</sup> which was in consistent with our results as 34% of subjects were found to suffer from allergic rhinitis. However, the results of the present study could not be generalized as all the participants were older than 18 years old.

Also, most of participants have a poor knowledge regarding the etiology and preventive measures of AR. In the same respect, Valli & Pujar <sup>(13)</sup> showed that most of Saudi subjects have inadequate knowledge about the classical symptoms, definition and preventive measures of AR and this was also presented in Denmark <sup>(14)</sup>. Also, the knowledge about risks of asthma in AR patients was found to be inadequate in carillon *et al.* <sup>(15)</sup> study.

Another consistent study in the United States found a poor knowledge and practice pattern among respondents regarding AR and the causative allergens <sup>(16)</sup>. A present survey also showed an inadequate perception and practice pattern regarding the AR <sup>(17)</sup>.

The higher educational level were associated with higher KAP scores thus education is an essential part for AR management and prevention.

**CONCLUSION**

An inadequate knowledge was found among most of respondents thus resulting in poor attitude and practice pattern. Hence, education is recommended for raising the awareness and promoting a good quality of life. Also, educational programs regarding AR would maintain the allergic patients’ needs. Physicians also must inform the patients about the risks, etiology and preventive measures of the disease for increasing their attitudes and beliefs.

**REFERENCES**

- Min Y-G (2010):** The Pathophysiology, Diagnosis and Treatment of Allergic Rhinitis. *Allergy Asthma & Immunology Research*, 2: 65-76.
- Small P, Kim H (2011):** Allergic rhinitis. *Allergy, Asthma, and Clinical Immunology: Official Journal of the Canadian Society of Allergy and Clinical Immunology*, 7: S3-S3.
- Bousquet J, Khaltaev N, Cruz AA, Denburg J, Fokkens W, Togias A et al. (2008):** Allergic rhinitis and its impact on asthma (ARIA) .*Allergy*, 63: 8-160.
- Abdulrahman H, Hadi U, Tarraf H, Gharagozlu M, Kamel M, Soliman A et al. (2012):** Nasal allergies in the Middle Eastern population: results

- from the "Allergies in Middle East Survey". American journal of rhinology & allergy, 26 (1): 3-23.
5. **Hadi UHRahman HA (2013):** The impact and treatment of allergic rhinitis in the Middle East: a comparison with the landmark allergy surveys from other worldwide regions. American journal of rhinology & allergy, 27: 490-494.
  6. **Sobki SHZakzouk SM (2004):** Point prevalence of allergic rhinitis among Saudi children. Rhinology, 42: 137-140.
  7. **Zahradnik A (2011):** Asthma education information source preferences and their relationship to asthma knowledge. Journal of health and human services administration, 34: 325-351.
  8. **Yilmaz O, Eroglu N, Ozalp DYuksel H (2012):** Beliefs about medications in asthmatic children presenting to emergency department and their parents. Journal of Asthma, 49: 282-287.
  9. **Keith PK, Desrosiers M, Laister T, Schellenberg RRWaserman S (2012):** The burden of allergic rhinitis (AR) in Canada: perspectives of physicians and patients. Allergy Asthma Clin Immunol., 8: 7.
  10. **Strachan D, Sibbald B, Weiland S, Ait-Khaled N, Anabwani G, Anderson HR et al. (1997):** Worldwide variations in prevalence of symptoms of allergic rhinoconjunctivitis in children: the International Study of Asthma and Allergies in Childhood (ISAAC). Pediatric allergy and immunology : official publication of the European Society of Pediatric Allergy and Immunology, 8: 161-176.
  11. **Bauchau VDurham SR (2004):** Prevalence and rate of diagnosis of allergic rhinitis in Europe. The European respiratory journal, 24: 758-764.
  12. **Al Frayh AR, Shakoor Z, Gad El Rab MOHasnain SM (2001):** Increased prevalence of asthma in Saudi Arabia. Annals of allergy, asthma & immunology : official publication of the American College of Allergy, Asthma, & Immunology, 86: 292-296.
  13. **VALLI RAJASEKARAN PG (2017):** KNOWLEDGE, ATTITUDE AND PRACTICE ABOUT ALLERGIC RHINITIS IN A RURAL POPULATION. International Journal of Otorhinolaryngology and Head & Neck Surgery, 2: 3-8.
  14. **Nolte H, Nepper-Christensen SBacker V (2006):** Unawareness and undertreatment of asthma and allergic rhinitis in a general population. Respiratory medicine, 100: 354-362.
  15. **Carrillo Zuniga G, Kirk S, Mier N, Garza NI, Lucio RLZuniga MA (2012):** The impact of asthma health education for parents of children attending head start centers. Journal of community health, 37: 1296-1300.
  16. **Gupta RS, Kim JS, Springston EE, Smith B, Pongracic JA, Wang X et al. (2009):** Food allergy knowledge, attitudes, and beliefs in the United States. Annals of allergy, asthma & immunology : official publication of the American College of Allergy, Asthma, & Immunology, 103: 43-50.
  17. **Kalpakioglu AF, Kalkan IK, Akcay A, Reisli I, Can D, Uzuner N et al. (2011):** (Un)Awareness of Allergy. The World Allergy Organization journal, 4: 170-178.