

# The prevalence of the most respiratory diseases, symptoms and associated factors in Faculty of medicine in Al-Baha University At December 2016

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## Abstract

**Background:** Bronchial asthma is a common chronic respiratory disease affecting adolescents nationality and worldwide.

**Objective:** The aim of this study was to determine the prevalence of asthma symptoms and associated factors in Faculty of medicine

**Methods:** This is a cross-sectional study conducted at Al-Baha University, Al-Baha, Kingdom of Saudi Arabia. The subjects were all the students in the faculty of Medicine. Pre-structured self-administered questionnaire was used to collect the data.

**Results:** One hundred twelve out of two hundred eighty medical students were participated in the study with a response rate of 62.2%. The prevalence of recurrent asthma symptoms was as follow: shortness of breath (SOB) and cough in 70 (31.3%), sleep interruption by SOB (shortness of breath) or cough at night in 40 (17.9%), wheezing in 28 (12.5%). Aggravating factors were: dust in 26 (11.6%), exercise induced in 22 (9.8%) perfumes in 10 (4.5%), smoking in 8 (3.6%), pets in 8 (3.6%). Use of inhalers in 6 (2.7%); and present asthma in 4 (1.8%).

**Conclusion:** The prevalence of asthma symptoms was high corresponding to almost one third of the medical students. The low rate of current asthma diagnosis and inhalers use suggests under-diagnosis and under-management of asthma. Accordingly, proper asthma awareness, diagnosis and management are highly recommended among medical students and health workers.

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## I. Introduction

### Background

Asthma is a common chronic disorder of the airways, which characterized by variable reversible and recurring symptoms related to airflow obstructions, bronchial hyper-responsiveness, and underlying inflammation.[1] With 2 million suffering, it has been ranked as one of the most common chronic diseases in Saudi Arabia.[1] patients' life is disturbed in many ways such as; loss of work and school days, frequent emergency department visits, poor quality of life, hospitalizations, and deaths sometimes. [1] As there is a shift in the world's population life style, it is predicted that the number of individuals with asthma will increase markedly around the world. [2] It has been reported by a community based study in Aseer region (KSA) a prevalence of bronchial asthma of 19.5% at sea level and 6.9% in high altitude areas. [2]

### Problem statement

There is paucity in literature about the prevalence of asthma among medical students. Most of the asthma prevalence studies in Saudi Arabia and other Gulf countries were mainly conducted in children below the age of 15 years [3].

## II. Literature review

Asthma is one of the most common chronic diseases in Saudi Arabia and the reports suggest that the prevalence of asthma is markedly increasing. [1] Despite the abundance of high-caliber medical services and the availability of international guidelines, the recent studies have shown that the burden of the illness might be significantly higher than previously estimated. [1] Fear of use of new drugs, poor knowledge, and the lack of awareness of the importance of controlling of the disease are common among primary care physicians who care for asthma patients in the Kingdom of Saudi Arabia (KSA). These factors are important in contributing to the magnitude of this burden. [1] Consequently, many asthma patients continue to be under-diagnosed, so they are under-treated, and are at a risk of acute exacerbations resulting in missing school or work, increased use of expensive acute healthcare services, and affected quality of life [1]. A recent asthma control survey showed that

64% of patients were uncontrolled, 31% were partially controlled, and only 5% were controlled [1]. Although the prevalence of asthma in Saudi Arabian adults is unknown, based on studies conducted over the past three decades, the prevalence of asthma among Saudi children has been reported to range from 8% to 25%. [1] The highest prevalence of physician-diagnosed asthma in KSA was reported to be 25% in 2004 [1]. Epidemiological studies in the past three decades revealed an increasing prevalence of asthma in KSA, which may be related to rapid lifestyle changes like changes in dietary habits, exposure to environmental factors such as indoor allergens, sand storm, dust, and tobacco. [1] In addition to the previous factors, high prevalence could be attributed to an increase in the disease awareness in both general population and healthcare workers, allowing more individuals to be diagnosed. [1] Another explanation has attributed the increased prevalence of asthma to the hygiene hypothesis, which proposes that there is insufficient microbial exposure early in life due to pharmacological manipulations and vaccines [1].

### Objectives

General:

To determine the prevalence of asthma in the faculty of medicine in Al-Baha University

Specific:

1. To calculate the prevalence of bronchial asthma among medical students.
2. To identify risk factors for asthma among students.
3. To measure the knowledge and practice of the medical students about asthma.
4. To quantify the level of asthma diagnosis among student.

### III. Methodology

This cross-sectional study was carried out during November – December 2016 ; it covered all students of the faculty of medicine in Albaha town in Saudi Arabia. The response rate of the participants was 62.2%.

### Sample

With students' population of 360, we used a complete census as a sample size required for the study. During the study period 224 students were interviewed. The participants included second year student 62 (27.7%), third year student 54 (24.1%), fourth year student 64 (20.5%), fifth year student 24 (10.7%), sixth year student 38 (17%).

### Study instrument

The study instrument was the Arabic version of pre-structured questionnaire. Background data were also collected about the age of the student, study level, smoking history, family history of bronchial asthma and aggravating factors.

### Data collection

The target population was all students of the faculty of medicine in Albaha over the period (1 November 2016 to 30 December 2016). All the students were invited to participate in the study and their informed consent was obtained. On average, each interview took 10 –15 minutes.

### Analysis

Data were analyzed using *SPSS* version 17. Student's knowledge and behaviors items were included and given dichotomous scores (Yes, No). A p –value of 0.05 or less is considered significant.

### IV. Results

**Table –1:** Base line data of participants

	Yes	No
Shortness of breath	42 (18.7%) (n = 112)	182 (81.3%) (n = 112)
Recurrent coughing	48 (21.4%) (n = 112)	176 (75.5%) (n = 112)
Are smoker	32 (14.3%) (n = 112)	192 (85.7%) (n = 112)
Is your friend smoker	200 (89.3%) (n = 112)	24 (10.7%) (n = 112)
One at home smoker	70 (31.3%) (n = 112)	154 (68.8%) (n = 112)
Food sensitivity	38 (17%) (n = 112)	186 (83%) (n = 112)
Wheezing	28 (12.5%) (n = 112)	188 (87.5%) (n = 112)
Use of medication	6 (2.7%) (n = 112)	188 (83.9%) (n = 112)
Sleep interruption	40 (17.9%)(n = 112)	184 (82.1%) (n = 112)
Diagnosis of asthma by physician	18 (8%)(n = 112)	206 (92%)(n = 112)
Current asthma	4 (1.8%) n = 112	100 (44.6%) n = 112
Use of inhalers	6 (2.7%) n = 112	218 (97.3%) n = 112
Relative with BA	136 (60.7%) (n = 112)	88 (39.3%) (n = 112)

**Table –2:** Aggravating factors of SOB (shortness of breath). Total (n=112)

Risk factor	SOB or coughing		P –value
	Yes	%	
Smoking	8	11.4%	.000
Perfumes	10	14.3%	.000
Dust	26	37.1%	.000
Pets	6	8.6%	.000
Exercise induced	22	9.8%	.000

A total of 360 questionnaires were distributed to the students, and 136 students refused to participate. The overall participation rate was 62.2%. The baseline characteristics of the study population are shown in Table 1. The prevalence of recurrent asthma symptoms was as follow: shortness of breath (SOB) in 42 (18.7%), and recurrent cough in 48 (21.4%), sleep interruption by SOB (shortness of breath) or cough at night in 40 (17.9%), wheezing in 28 (12.5%). Aggravating factors were: dust in 26 (11.6%), exercise induced in 22 (9.8%) perfumes in 10 (4.5%), smoking in 8 (3.6%), pets in 4 (3.6%). Diagnosis of asthma by physician in 9 (8%), use of inhalers in 6 (2.7%) and present asthma in 4 (1.8%).

## V. Discussion and Conclusions

This study has established the prevalence of asthma symptoms and associated factors among medical students at Al-Baha University, Al-Baha area in Saudi Arabia. The prevalence of recurrent asthma symptoms was as follow: shortness of breath (SOB) in 42 (18.7%), and recurrent cough in 48(21.4%), sleep interruption by SOB (shortness of breath) or cough at night in 40 (17.9%), wheezing in 28 (12.5%). Aggravating factors were: dust in 26 (11.6%,  $p < .000$ ), exercise induced in 22 (9.8%,  $p < .000$ ) perfumes in 10 (4.5%,  $p < .000$ ), smoking in 8 (3.6%,  $p < .000$ ), pets in 8 (3.6%,  $p < .000$ ). Diagnosis of asthma by physician in 18 (8%), use of inhalers in 6 (2.7%) and present asthma in 4 (1.8%). The study revealed high prevalence of shortness of breath (SOB) and recurrent cough as (18.7%) and (21.4%) consecutively. Also there was low rate of physician diagnosed asthma (8%), and use of inhalers (2.7%). This study is distinctive in that it is the first assessment of the prevalence of asthma symptoms among medical students in Saudi Arabia. Many of the previous asthma prevalence studies in Saudi Arabia and other Gulf countries were primarily conducted in children below the age of 15 years. [3] In conclusion, the prevalence of asthma symptoms was high corresponding to almost one fifth of the medical students. The low rate of physician diagnosed asthma, current asthma diagnosis and inhalers use suggests under-diagnosis and under-management of asthma. Accordingly, proper asthma awareness, diagnosis and management are highly recommended among medical students and health workers.

**Conflict of Interest:** None declared.

## References

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الأسم (اختياري)	العمر	الجنس
	الحالة الاجتماعي	<input type="checkbox"/> ذكر <input type="checkbox"/> أنثى
	أعزب متزوج <input type="checkbox"/> أرمل/مطلق <input type="checkbox"/>	
	السنة الدراسية	<input type="checkbox"/> أولى <input type="checkbox"/> ثانية <input type="checkbox"/> ثالثة <input type="checkbox"/> رابعة <input type="checkbox"/> خامسة <input type="checkbox"/> سادسة
نرجو منكم وضع علامة (✓) إما الخيار المناسب ،، شاكرين لكم تعاونكم ..		
هل أنت مدخن؟	<input type="checkbox"/> نعم <input type="checkbox"/> لا	
هل أحد من أصدقائك مدخن؟	<input type="checkbox"/> نعم <input type="checkbox"/> لا	
هل أحد في المنزل مدخن؟	<input type="checkbox"/> نعم <input type="checkbox"/> لا	
هل تعاني من حساسية من نوع معين من الغذاء؟	<input type="checkbox"/> نعم <input type="checkbox"/> لا	
هل تعاني أو عانيت صعوبة في التنفس؟	<input type="checkbox"/> نعم <input type="checkbox"/> لا	
هل تعاني أو عانيت نوبة سعال متكرر؟	<input type="checkbox"/> نعم <input type="checkbox"/> لا	
إذا كانت إجابتك بنعم ..		
<p>i. كم مره تقريبا تعاني بضيق تنفس أو نوبة سعال:  <input type="checkbox"/> اقل من مرتين في الأسبوع. <input type="checkbox"/> أكثر من مرتين في الأسبوع. مره واحدة في اليوم. <input type="checkbox"/> دائما.</p> <p>ii. في أي وقت غالبا تصاب بصعوبة تنفس .  <input type="checkbox"/> في الصف <input type="checkbox"/> في المنزل <input type="checkbox"/> في الخارج <input type="checkbox"/> عند ممارسة الرياضة <input type="checkbox"/> أخرى .....</p> <p>iii. ضع علامة (✓) على الأشياء التي تزيد بها صعوبة التنفس أو نوبة السعال لديك .  <input type="checkbox"/> التدخين <input type="checkbox"/> الغبار <input type="checkbox"/> ملامسة الحيوانات <input type="checkbox"/> الحشرات <input type="checkbox"/> الجو البارد <input type="checkbox"/> الزهور <input type="checkbox"/> الإجهاد <input type="checkbox"/> الطباشير <input type="checkbox"/> الاضطراب العاطفي <input type="checkbox"/> العطور/الروائح القوية <input type="checkbox"/> تغير الطقس المفاجئ <input type="checkbox"/> الأغذية مثل.....</p> <p>iv. ماذا تفعل عندما يأتيك صعوبة في التنفس او نوبة سعال شديدة؟  <input type="checkbox"/> أخذ قسط من الراحة <input type="checkbox"/> الشهيق والزفير بسرعة <input type="checkbox"/> التنفس العميق والبطيء <input type="checkbox"/> الاتصال بالطبيب <input type="checkbox"/> الذهاب إلى اقرب مركز صحي <input type="checkbox"/> الذهاب للمستشفى <input type="checkbox"/> أخرى .....</p> <p>v. هل تأخذ أي دواء لمشاكل التنفس أو السعال <input type="checkbox"/> نعم <input type="checkbox"/> لا  أذا كانت الإجابة (نعم) متى تأخذ الدواء <input type="checkbox"/> عندما تسعل او يكون لديك مشكلة في التنفس <input type="checkbox"/> قبل أي نشاط رياضي <input type="checkbox"/> كل يوم حتى وإن كنت على ما يرام</p>		
هل تسمع أزيز في الصدر عند التنفس؟	<input type="checkbox"/> نعم <input type="checkbox"/> لا	
هل تعاني في فترات نومك من الشخير (الصغير)؟	<input type="checkbox"/> نعم <input type="checkbox"/> لا	
هل سبق وان استقضت من نومك بسبب سعال أو ضيق تنفس أو شخير(صغير)	<input type="checkbox"/> نعم <input type="checkbox"/> لا	
إذا كانت إجابتك نعم ..		
<p>i. كم مرة حصل ذلك  <input type="checkbox"/> اقل من مرتين في الشهر <input type="checkbox"/> أكثر من مرتين في الشهر <input type="checkbox"/> أكثر من مرتين في الاسبوع <input type="checkbox"/> كل ليلة</p>		
هل عانيت في مراحل طفولتك الأولى من أمراض الجهاز مثل الربو؟	<input type="checkbox"/> نعم <input type="checkbox"/> لا	
إذا عانيت في طفولتك من مرض الربو ..هل مستمرة إلى الآن؟	<input type="checkbox"/> نعم <input type="checkbox"/> لا	
هل تم تشخيصك كمرضى ربو بواسطة طبيب؟	<input type="checkbox"/> نعم <input type="checkbox"/> لا	
إذا كانت إجابتك نعم ..		
<p>i. هل تستخدم أدوية للربو؟ <input type="checkbox"/> نعم <input type="checkbox"/> لا</p> <p>ii. هل تستخدم بخاخ الربو؟ <input type="checkbox"/> نعم <input type="checkbox"/> لا</p> <p>iii. أين تذهب عادة عند حالة الربو المزمنة؟  متى كانت آخر مرة كنت هناك؟  .....</p> <p>iv. هل لديك طبيب خاص لمتابعة حالتك؟ <input type="checkbox"/> نعم <input type="checkbox"/> لا</p> <p>v. خلال السنة الماضية هل؟  <input type="checkbox"/> بقيت طوال الليل في المستشفى بسبب مشاكل التنفس او الربو .  <input type="checkbox"/> ذهبت إلى الطوارئ بأحد المستشفيات.  <input type="checkbox"/> ذهبت لأحد المراكز الصحية .</p> <p>vi. كم يوم دراسي فاتك بسبب مشاكل الربو والتنفس .  <input type="checkbox"/> ولا يوم <input type="checkbox"/> يوم إلى يومين <input type="checkbox"/> 3-5 أيام <input type="checkbox"/> 6-9 أيام <input type="checkbox"/> 10-14 يوم <input type="checkbox"/> أكثر من 15 يوم</p>		
هل تعرف احد من أقاربك يعاني من الربو؟	<input type="checkbox"/> نعم <input type="checkbox"/> لا	

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