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.[5] 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.[3] 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

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

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

<table>
<thead>
<tr>
<th>Risk factor</th>
<th>SOB or coughing</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Smoking</td>
<td>8</td>
<td>11.4%</td>
</tr>
<tr>
<td>Perfumes</td>
<td>10</td>
<td>14.3%</td>
</tr>
<tr>
<td>Dust</td>
<td>26</td>
<td>37.1%</td>
</tr>
<tr>
<td>Pets</td>
<td>6</td>
<td>8.6%</td>
</tr>
<tr>
<td>Exercise induced</td>
<td>22</td>
<td>9.8%</td>
</tr>
</tbody>
</table>

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 follows: 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 follows: 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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