

# Assessment of cardinal respiratory symptoms at the internal medicine outpatient clinic of Suhaj Teaching Hospital

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**Background** Assessment of respiratory symptoms is the cornerstone in the accurate diagnosis of various respiratory diseases.

**Objective** This study aimed at evaluating the prevalence of cardinal respiratory symptoms among patients presenting to the internal medicine outpatient clinic of Suhaj Teaching Hospital.

**Materials and methods** A total of 500 consecutive adult patients presenting to the internal medicine outpatient clinic of Suhaj Teaching Hospital and complaining of either respiratory or nonrespiratory symptoms were enrolled in the study. In all patients, the initial symptoms at the time of presentation, the symptoms after history taking, and the management plan were documented.

**Results** The symptomatology of patients at the initial presentation to the outpatient clinic and after history taking were compared; 136 (27.2%) and 148 (29.6%) patients, respectively ( $P < 0.001$ ), had pure respiratory symptoms, 332 (66.4%) and 147 (29.4%) patients, respectively ( $P < 0.001$ ), had nonrespiratory symptoms, and the remaining 32 (6.4%) and 205 (41%) patients, respectively ( $P < 0.01$ ), had mixed respiratory and nonrespiratory symptoms. All individual cardinal respiratory symptoms differed significantly ( $P < 0.001$ ) between the initial presentation

and after history taking. Of the 136 patients presenting with pure respiratory symptoms, only 27 had pure respiratory diseases after history taking, whereas of the 364 patients without pure respiratory symptoms, 325 had pure respiratory diseases. Residents were the medical personnel who took medical decision in 452 patients, specialists took the decision in 37 patients, and consultants in 11 patients. Thirty-five patients (7%) were admitted; 30 of them had pure respiratory diseases, constituting 6% of the total patients and 87.7% of the admitted patients.

**Conclusion** Both respiratory symptoms and diseases are highly prevalent at the internal medicine outpatient clinics and are responsible for a large percentage of hospital admissions. *Egypt J Broncho* 2013 7:67–70

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**Keywords:** cardinal respiratory symptom, chest pain, cough, dyspnea, expectoration, hemoptysis, wheeze

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## Introduction

Respiratory diseases constitute a major cause of morbidity and mortality worldwide [1]. In the UK, respiratory disease is responsible for more primary care consultations compared with any other type of illness [2]. Chronic respiratory diseases are projected to rank as the fifth leading cause of morbidity by 2020 [3].

Despite being responsible for nearly one-third of general practice consultations [4], for one in eight emergency hospital admissions [5], and being the major contributory factor in the winter bed crises [6], respiratory disease did not feature in any of the official documents [7–10]. This lack of national prioritization of respiratory care is reflected internationally [11,12].

This study aimed at evaluating the prevalence of cardinal respiratory symptoms among patients presenting to the internal medicine outpatient clinic of Suhaj Teaching Hospital. The evaluation was carried out in the light of the final clinical diagnosis.

## Materials and methods

This prospective study was conducted on 500 consecutive adult patients presenting to the internal medicine outpatient clinic of Suhaj Teaching Hospital, with either respiratory or nonrespiratory complaints. In all patients, demographic data, comorbidities, detailed medical history taking with thorough clinical examination, and routine laboratory investigation were recorded. Thereafter, the suspected diagnosis by the examining physician and the suggested management plan were documented. The study was approved by the institutional ethics committee.

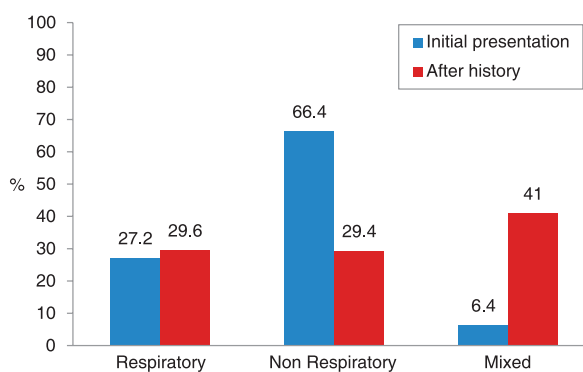
## Statistical analysis

Univariate statistics were presented as frequency and percentage for categorical variables and mean ( $\pm$ SD) for continuous variables.  $P$  values for comparisons of continuous variables between groups were based on the  $t$ -test. The  $\chi^2$ -test was applied to analyze the difference in various groups. Statistical significance was set at  $P$  value less than 0.05. Statistical analyses were performed using Statistical Package for Social Sciences software (SPSS for Windows, version 20.0; SPSS Inc., Chicago, Illinois, USA).

## Results

The study enrolled a total of 500 patients; the mean ( $\pm$ SD) age was 42.96 ( $\pm$ 16.78 SD) years with a range of 16–90 years, 220 (44%) were male patients and 280 (56%) were female patients. Descriptive data of the included patients, type of physicians, and management are displayed in Table 1. Symptomatology were compared among the 500 included patients at the initial presentation to the outpatient clinic and after history taking; 136 (27.2%) and 148 (29.6%) patients, respectively ( $P < 0.001$ ), had pure respiratory symptoms, 332 (66.4%) and 147 (29.4%) patients, respectively ( $P < 0.001$ ), had nonrespiratory symptoms, and the remaining 32 (6.4%) and 205 (41%) patients, respectively ( $P < 0.01$ ), had mixed respiratory and nonrespiratory symptoms (Fig. 1). Individual cardinal respiratory symptoms at the initial presentation

**Figure 1**



Comparison between symptoms at the initial presentation and after history taking.

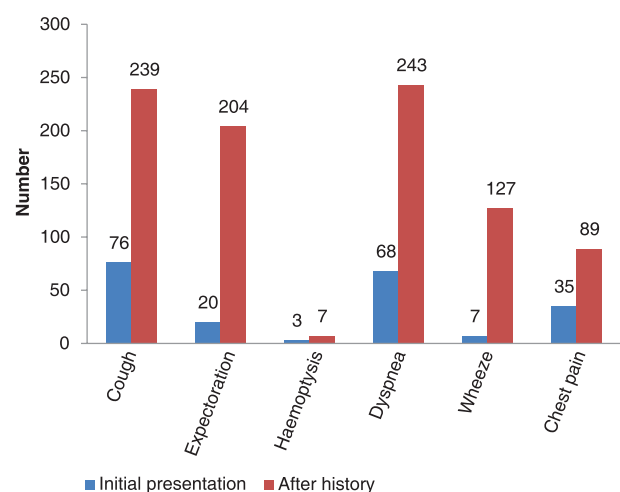
**Table 1 Demographics and characteristics of the patients, physicians, and management**

Age <sup>a</sup> (years)	42.96 $\pm$ 16.78 (16–90)
Sex (M/F) (%)	44/56
Smoking status (%)	
Nonsmoker	72.2
Current smoker	18
Ex-smoker	9.8
Occupation (%)	
Student	6.2
Farmer	9.8
Manual worker	18.4
Office worker	11
Unemployed	54.6
Examining physician (%)	
Resident	90.4
Specialist	7.4
Consultant	2.2
Management (%)	
Medical treatment	76.4
Admission	7
Referral	16.6

<sup>a</sup>Data in parentheses represent range.

to the outpatient clinic and after history taking were compared; all individual symptoms differed significantly ( $P < 0.001$ ) (Table 2 and Fig. 2). Of the 136 patients presenting with pure respiratory symptoms, 27 patients were found to have pure respiratory diseases after history taking, whereas the remaining 109 patients did not have pure respiratory diseases after history taking. Of the 364 patients presenting without pure respiratory symptoms, 325 patients proved to have pure respiratory diseases, whereas the remaining 39 patients did not have pure respiratory diseases (Table 3). The distribution of management among the examining physicians is shown in Table 4; residents were the medical personnel who took the medical decision in 452 patients, specialists took the medical decision in 37 patients, and consultants were

**Figure 2**



Comparison between cardinal respiratory symptoms at the initial presentation and after history taking.

**Table 2 Comparison between cardinal respiratory symptoms at the initial presentation and after history taking**

Symptoms	Initial presentation	After history	$\chi^2$	<i>P</i>
Cough	76	239	97.88	<0.001
Expectoration	20	205	26.76	<0.001
Hemoptysis	3	7	212.56	<0.001
Dyspnea	68	243	73.98	<0.001
Wheeze	7	127	13.63	<0.001
Chest pain	35	89	129.23	<0.001

**Table 3 Pure respiratory complaints at the initial presentation versus pure respiratory diseases after history taking**

Pure respiratory complaints at the initial presentation	Pure respiratory diseases after history taking		Total
	No	Yes	
No	325	39	364
Yes	27	109	136
Total	352	148	500

**Table 4** Distribution of management among the examining physicians

	Medical personnel taking the decision			Total	$\chi^2$	P
	Resident	Specialist	Consultant			
Types of management						
Medical treatment	369	7	6	382		
Admission	11	22	2	35	180.64	<0.001
Referral	72	8	3	83		
Total	452	37	11	500		

in charge of the medical decision in the remaining 11 patients.

## Discussion

Internationally, respiratory conditions account for eight of the top 10 diagnoses encountered in this setting (including upper respiratory tract infection, tonsillitis, otitis media, pneumonia, acute bronchitis, asthma, and influenza). Among adults, nine of the top 25 diagnoses are also respiratory problems (upper respiratory tract infection, acute bronchitis, influenza, pneumonia, tonsillitis, tuberculosis, asthma, otitis media, and sinusitis) [13]. Cardinal respiratory symptoms include cough, expectoration, hemoptysis, dyspnea, wheeze, and chest pain. These symptoms share high prevalence; about one of the six medical complaints is respiratory complaint. This study has the advantage of focusing on the prevalence of cardinal respiratory symptoms in our community to evaluate the problem of respiratory diseases in Egypt for achieving progression in Egyptian respiratory health services. To our knowledge, previous studies were only concerned with the prevalence of respiratory diseases rather than respiratory symptoms. The choice of the internal medicine outpatient clinic in this study was made to evaluate the prevalence of cardinal respiratory symptoms among patients presenting either because of the cardinal respiratory or nonrespiratory complaints, being unaware of or underestimating their respiratory symptoms. Upon assessing the patients after medical history taking, respiratory symptoms were found to be more prevalent than what was expected. When the frequency of individual respiratory complaints was analyzed at the time of initial presentation and after history taking, all cardinal respiratory symptoms increased significantly after history taking, suggesting lack of community awareness with respect to respiratory complaints. In order of frequency, cough and dyspnea represented the commonest respiratory complaints, being significantly more frequent after history taking when compared with the initial presentation. It is not surprising to know that breathing discomfort is a common symptom experienced by patients and can be quite distressing. As for cough, it represents the

most frequent symptom for which patients visit clinic or hospital worldwide [14], and studies using the International Classification of Primary Care [15] have confirmed that cough is the commonest complaint in primary care and is the single most common symptom for which patients worldwide seek medical attention, with an estimated 84 million consultations in the USA in only 1 year [16]. Furthermore, questionnaire surveys have estimated the prevalence of cough to be as high as 9–33% [17]. The significant increase in these symptoms after history taking is attributable to the assumption that many patients neglect to seek medical advice when complaining from cough or expectoration unless it is associated with more-agonizing complaints. Furthermore, some of the included patients were current smokers who usually consider cough and expectoration as expected usual daily events associated with smoking, which does not necessitate medical consultation. Hemoptysis is a common complaint in the emergency populations, with mortality rates approaching 80% [18]. The alarming nature of this symptom can explain the narrow range between its frequency at the initial presentation and after history taking. Only seven patients in this study presented with chest wheeze at the initial presentation, but after history taking 127 patients were found to have this symptom. The significant increase in wheeze after history taking is assumed to be because of the usual association between wheeze and other more-agonizing respiratory symptoms to which patients are much more concerned with. Chest pain is the chief complaint in about 1–2% of outpatient visits [19]. In our study, 7% of patients presented initially with chest pain, which increased after history taking to 17.8%.

In this study, of the 500 patients enrolled, 35 patients (7%) were admitted; 30 of them had pure respiratory diseases, constituting 6% of the total patients in this study and 87.7% of the admitted patients, reflecting the large contribution of respiratory diseases for hospital admission. Respiratory diseases account for 6.5% of all hospital admissions worldwide.

The residents of the internal medicine at outpatient clinic were the chief controller responsible for the medical management, as they managed 452 patients (90.4%); specialists played the role only in 37 patients (7.4%), whereas consultants were responsible for the decision making only in 11 patients (2.2%). Finally, the decreased participation of both specialists and consultants reflects the combination of lack of interest concerning the respiratory diseases in our health services and lack of awareness of both respiratory diseases and symptoms among health service providers and patients. Other major factors are low salaries, absence of surveillance, and worse mapping for health services.

## Conclusion

Both respiratory symptoms and diseases are highly prevalent in the internal medicine outpatient clinics and are responsible for the large percentage of hospital admissions. More efforts are required to improve the respiratory health services in Egypt, including good evaluation of the respiratory patients and increasing the awareness of the importance of respiratory symptoms and diseases in both patients and physicians.

## Acknowledgements

### Conflicts of interest

None declared.

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