Original Article

Awareness of chronic obstructive pulmonary disease (COPD) among the general population in Aseer Region, Kingdom of Saudi Arabia (KSA)

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Abstract

Background: Chronic obstructive pulmonary disease (COPD) is a common but preventable disease and has a prevalence of 5%–14% in the general population. It is characterized by airflow limitation and persistent respiratory symptoms. In this survey, we aimed to assess the awareness of COPD among the general population in the Aseer Region of the Kingdom of Saudi Arabia (KSA). **Method:** This was an observational, cross-sectional study in which predesigned electronic questionnaires were distributed to 504 randomly selected community personnel utilizing phone services. The collected data were analyzed using the IBM SPSS Statistics software, version 24 for Windows (IBM Corp., Armonk, NY). **Results:** Participants were asked 11 questions with yes-or-no answers based on awareness and symptoms of COPD: 35.5% of participants had heard about the COPD as a term and 72% had no detailed information about COPD. Only 3.5% of participants had relatives with COPD. During the survey on COPD symptoms, 31% of participants chose shortness of breath and the rest chose cough (20%), sputum production (15%), wheezing (14%), and chest pain (19%). Almost two-third of the participants had no idea about COPD symptoms. For the most disease knowledge, majority of the study participants had very poor knowledge about the disease that was evident in the 22 questions intended to assess this domain. Social media sites ranked as the most popular source of information on COPD among the study participants. **Conclusion:** Awareness about COPD among the general population in the Aseer Region in KSA is poor. It is advisable to carry out programs to increase their level of awareness.

Keywords: Awareness, chronic, disease, obstructive, pulmonary

Introduction

According to the Global Initiative for Chronic Obstructive Lung Disease (GOLD),[1] chronic obstructive pulmonary disease (COPD) is a common, preventable, and treatable disease and is characterized by persistent respiratory symptoms and airflow limitation that is due to airway and/or alveolar abnormalities usually caused by significant exposure to noxious particles or gases. The main symptoms include shortness of breath and chronic cough, which may or may not be productive.[2] COPD is the third leading cause of death worldwide, causing 3.23 million deaths in 2019. Approximately 90% of COPD deaths

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occur below the age of 70 and in developing and low-income countries.[3]

The cornerstones of COPD management are appropriate maintenance therapy (that addresses both maintenance pharmacotherapy to maximize bronchodilatation, together with multidisciplinary disease management to reduce exacerbations), promotion of smoking cessation, pulmonary rehabilitation, and regular follow-up monitoring for disease progression.[4]

A previous study was carried out in KSA to evaluate awareness of COPD among smokers and revealed that almost two-third of the participants had weak knowledge of COPD.[5] To our knowledge, no previous studies have been carried out in KSA to investigate the level of population awareness on COPD. We carried out this study to understand the magnitude of the lack of COPD awareness and hence to encourage the development of effective interventions to increase the awareness of COPD among the Saudi population, as acknowledgment of the problem would certainly lead to measures to curb it.

Research Methodology

Material and Method

A predesigned electronic questionnaire (in Arabic language) was distributed to randomly selected community personnel who utilized phone services and were among the general population of the Aseer Region. Consent was obtained from the study participants at the start of the electronic survey. Once the participant agreed to participate, they were directed to complete the questionnaire; they had the right to refuse this by clicking on the option "No".

Setting and design

This study was an observational, cross-sectional study.

Duration

The study was carried out from July 1, 2022, to September 30, 2022.

Sample size and sampling

Multi-stratified randomized technique: Based on previous trials a sample size estimated to be around 500 participants.[6,7]

Data collection and analysis

The collected data were analyzed using the IBM SPSS Statistics software, version 24 for Windows (IBM Corp., Armonk, NY).

Ethical issues

The study was reviewed and approved by the Research Ethics Committee at King Khalid University (HAPO-06-B-001) with approval number (2022-2103) in 6/28/2022.

This study was in accordance with the guidelines outlined in the Declaration of Helsinki.

The questionnaire included a section on demographic data along with sociodemographic information and core questions addressing the knowledge, understanding, and awareness of participants on COPD [Tables 1–3].

Results

A total of 504 participants were enrolled in this survey; the study had a male predominance of 83.5%. Demographic data are

Table 1: Demographic data of study participants

Catigory	Characteristic	No.	%	Catigory	Variable	No.	%
Gender	Male	421	83.5	Income	<5K SAR	169	33.5
	Female	83	16.5		5–15K SAR	259	51.4
Age (in years)	<30	175	34.7		>15K SAR	76	15.1
	30–39	128	25.4	Are you currently smoking?	No	414	82.1
	40–49	104	20.6		Yes	90	17.9
	50–59	58	11.5	How long you have been smoking?	<10 years	47	48.0
	≥60	39	7.7		10-19 years	31	31.6
Geographical distribution	Abha	157	31.2		20-29 years	17	17.3
	Muhayil	128	25.4		30-39 years	3	3.1
	Mushait	48	9.5	How much do you smoke?	<1 pack/day	52	54.7
	Rejal	22	4.4		1–2 packs/day	40	42.1
	Balahmer	14	2.8		>2 packs/day	3	3.2
	Ahad	12	2.4	Job	Teacher	108	21.5
	Bariq	9	1.8		Healthcare	66	13.1
	Balasmar	5	1.0		Soldier	58	11.6
	Sarat	1	0.2		Unemployed	55	11.0
	Other	108	21.4		Retired	52	10.4
Education level	Primary school	22	4.4		Homemaker	25	5.0
	Intermediate school	24	4.8		Engineer	9	1.8
	High school	117	23.2		Other	129	25.7
	University	310	61.5				
	Postgraduate	31	6.2				

Table 2: COPD disease awareness questionnaire

	Questions	Answer	No.	%
1	Did you hear about COPD?	No	325	64.5
		Yes	179	35.5
2	Do you have any further information or details about COPD?	No	365	72.4
		Yes	139	27.6
3	Is there anyone of your family members has COPD?	No	485	96.2
		Yes	19	3.8
4	COPD patient may have shortness of breath.	No	349	69.2
		Yes	155	30.8
5	COPD patient may have cough.	No	403	80.0
		Yes	101	20.0
6	COPD patient may have sputum.	No	429	85.1
		Yes	75	14.9
7	COPD patient may have wheeze.	No	432	85.7
		Yes	72	14.3
8	COPD patient may have chest pain.	No	409	81.2
		Yes	95	18.8
9	COPD patient may have fatigue.	No	456	90.5
		Yes	48	9.5
10	COPD patient may have weight loss.	No	482	95.6
		Yes	22	4.4
11	I have no idea about the symptoms of COPD.	No	168	33.3
		Yes	336	66.7

shown in Table 1. Smokers made up 17% of the total number of participants in the study: 48% of them had smoked for less than 10 years.

Participants were asked 11 questions with yes-or-no answers on awareness and symptoms of COPD: 35.5% of the participants had heard about COPD as a term and 72% had no detailed information on the disease. Only 3.5% had relatives with COPD. Regarding knowledge of COPD symptoms, 31% of participants chose shortness of breath and the rest choose cough (20%), sputum production (15%), wheezing (14%), and chest pain (19%). Almost two-third of the participants had no idea about COPD symptoms. Regarding the level ofknowledge of the disease, the majority of the study participants had very poor knowledge about the disease, which was evident from their answers to 22 questions that were intended to assess this domain. Social media sites ranked as the top source of information on COPD among the participants [Table 2]. The participants were also asked for the source of their information on COPD, to which 14.7% answered social media, 8.5% answered a doctor, 6.3% answered friends and family, and 70% answered other resources [Table 3].

Discussion

Our data revealed poor awareness on COPD, with 35.55% of our study population recognizing the term "COPD" and only 27.6% knowing what COPD is. Only 3.8% of participants had COPD patients in their families, which represented a very small percentage of patients and did not affect our conclusions. Different countries had different results with regard to the public awarness about COPD, foe example in syria the public awarnes was 25%,[8] Australia (54%),[9] Slovenia (50%),[10] Singapore (35%),[11] Spain (17%)[12] and India (0.9%).[13] This variability in different results may be attributed to the dissimilar educational level of participants and the disparate levels of development of the different countries. The COPD symptom most often recognized by our participants was shortness of breath (30.8%), and only a minority knew that cough, expectoration, wheezing, chest pain, fatigue, or weight loss were also symptoms of the disease. These data corroborate with those reported in previous studies.[12,14] Unfortunately, shortness of breath supposes a more advanced disease stage and is a common symptom in other cardiac and chest diseases. On the other hand, cough and expectoration are early symptoms of COPD and hence allow an earlier diagnosis. Thus, it is important to highlight those early symptoms in future COPD education programs. Demographic data collected in our survey showed diversity in among study participants; however, previous studies[5,8] showed that apart from health-related field population, awareness of COPD did not differ with geographical distribution, gender, smoking, or age. Also, in our judgement, it is not likely that the difference in geographical distribution between participants would have an effect on awareness rates because all areas had the same governorate medical and administrative services. In our study, health care workers accounted for only 13.1% of the study population: this did not affect our results as the number of participants in our study was about 20% more than the calculated sample size. Surprisingly, in contrast to the previous studies and when we reviewed the master database, we found that 65.2% of health care workers in our study lacked knowledge of COPD; this may be attributed to the small sample size of health care workers.

The level of knowledge of COPD across our cohort was generally poor in terms of epidemiology, mortality rate, progression, prevention, likelihood of curableness, and its relation to bronchial asthma, airway obstruction, pulmonary vessel obstruction, smoking, air pollution, wood smoke, dust and chemicals, vitamin deficiency, alcohol drinking, and possible genetic predisposition. Similarly, a low level of awareness was shown in our study regarding the recognition of COPD symptoms, whether its severity increased in the early morning, whether bronchial asthma mimicked COPD, and whether influenza vaccine played a role in COPD prevention. Public surveys with a structured COPD awareness questionnaire in Italy,[15] India,[7] South Korea,[16] Japan,[17] and Australia[9] used different COPD awareness questionnaires and obtained similar results of poor public awareness. Also, it was reported that patients with poor COPD knowledge were more likely to have poor adherence to medication that would reduce treatment outcomes.[18] These results highlight the need for urgent interventions to improve public awareness of COPD for early detection and treatment of the disease. Furthermore, although it was reported in a previous study[6] that 45.0% of smokers showed a desire to stop smoking after being aware of its causal relationship to COPD, smokers of more than 20 years expressed a more negative attitude toward COPD management. Thus, undertreatment could still be a problem even after early diagnosis of COPD. This may

Table 3: COPD knowledge questionnaire and participants' sources of information

	Question	Answer	No.	%		Question	Answer	No.	%
1	COPD is a common disease	Agree	87	17.3	12	Exposure to woods smoke may cause COPD.	Agree	175	35.6
		Disagree	70	13.9			Disagree	15	3.1
		No idea	347	68.8			No idea	301	61.3
2	COPD has high mortality rate.	Agree	97	19.2	13	Exposure to dust and chemicals may cause COPD.	Agree	184	36.5
		Disagree	26	5.2			Disagree	14	2.8
		No idea	381	75.6			No idea	306	60.7
3	COPD worsens after every exacerbation.	Agree	141	28.0	14	Vitamin deficiency may cause COPD.	Agree	61	12.1
		Disagree	11	2.2			Disagree	51	10.1
		No idea	352	69.8			No idea	392	77.8
4	COPD is a preventable disease	Agree	162	32.1	15	Alcohol drinking may cause COPD.	Agree	101	20.0
		Disagree	13	2.6			Disagree	38	7.5
		No idea	329	65.3			No idea	365	72.4
5	COPD can be cured.	Agree	151	30.0	16	Some people have genetic tendency to develop COPD.	Agree	100	19.8
		Disagree	33	6.5			Disagree	34	6.7
		No idea	320	63.5			No idea	370	73.4
6	COPD & bronchial asthma are the same.	Agree	43	8.7	17	People at risk to develop COPD may present with no symptoms.	Agree	73	14.5
		Disagree	90	18.3			Disagree	55	10.9
		No idea	360	73.0			No idea	376	74.6
7	COPD develops if there is airways obstruction.	Agree	124	24.6	18	Cough/sputum are the most important COPD symptoms.	Agree	156	31.0
		Disagree	39	7.7			Disagree	14	2.8
		No idea	341	67.7			No idea	334	66.3
8	COPD develops if there is pulmonary vessels obstruction.	Agree	130	25.8	19	COPD symptoms usually most severe in early morning.	Agree	95	18.8
		Disagree	42	8.3			Disagree	32	6.3
		No idea	332	65.9			No idea	377	74.8
9	Patient may develop COPD when breathes in the smoke from other people's cigarettes, cigars or pipes.	Agree	152	30.2	20	Bronchial asthma is one of the most important mimickers of COPD.	Agree	174	34.5
		Disagree	26	5.2			Disagree	7	1.4
		No idea	326	64.7			No idea	323	64.1
10	Smoking cessation will prevent development of COPD.	Agree	167	33.1	21	Influenza vaccine is one of the most important preventive measures in COPD patients.	Agree	85	16.9
		Disagree	23	4.6			Disagree	40	7.9
		No idea	314	62.3			No idea	379	75.2
11	Exposure to outdoor air pollutions may cause COPD.	Agree	183	36.3	22	What is the source of your information regarding COPD.	Friends/family	32	6.3
		Disagree	16	3.2			Physician	43	8.5
		No idea	305	60.5			Social media	74	14.7
							None	355	70.4

be another reason to enhance awareness of COPD through an educational program to boost smoking-cessation willingness.

In our study, social media ranked as the top source of information about COPD, followed by physicians then friends and family. Social media presents as a versatile platform that can provide people with topics related to health, with people who are increasingly active online seeking for health information.[19] Moreover, using social media to investigate different health-related issues has been shown to be feasible.[20] The utility of social media, to our knowledge, by health care authorities to understand and improve COPD awareness remains untapped.

We did not notice any study limitation that may represent weaknesses within the research design and may influence outcomes and conclusions. However, our study population was limited to a subset of participants with higher socioeconomic and educational standards who could use internet tools. As a result, the participants may not truly represent the entire population, and we expect lower COPD knowledge in the general population. Thus, further studies are warranted by conducting direct interviews with populations that do not have access to internet tools. Nevertheless, this is the first study that has measured COPD knowledge in Saudi Arabia and provides some helpful insights for further dedicated research that will include all population standards and extend to different areas in KSA to help elucidate a plan of management of COPD in our population.

In conclusion, there is poor awareness and knowledge of COPD among the population of the Aseer Region in KSA, and social media is the top source of their information on said disease. Continuous efforts to increase awareness and knowledge of COPD among them is warranted.

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Conflicts of interest

There are no conflicts of interest.

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