

AUTHORS' LIST

CHRONIC OBSTRUCTIVE PULMONARY DISEASE COMMENTARY

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MESSAGES

Dr. Saadia Ashraf

Chronic Obstructive Pulmonary Disease (COPD), a major public health concern, is affecting millions of people globally, with the WHO estimating that approximately 65 million individuals suffer from moderate to severe COPD. It is the third leading cause of death worldwide, with over 3 million deaths attributed to COPD in 2019 alone. In low and middle-income countries, the burden of disease and its adequate management is a big challenge. Poor conditions, lack of literacy, exposure to smoking, indoor and outdoor pollution, industrial pollution, lack of robust health infrastructure and lack of resources are important factors contributing to the high burden of disease in these countries.



IRF 2022, is unique in its inception and brought together experts in pulmonology from many countries of the region, mainly from low to middle-income countries, to discuss the challenges faced in managing patients with COPD. Not only physicians but the perspective and challenges faced by other stakeholders like patients, caregivers and policymakers were also discussed in detail and polling was done to gather information.

Thought-provoking data was collected and reflected in this scientific publication, including poor knowledge and misbeliefs on the disease and its therapy, concerns on high costs, poor treatment responses and limited access to healthcare. Challenges and barriers in diagnosis and management of COPD is similar in these countries, hence a multifaceted approach is required, involving education and awareness campaigns, infrastructure development, affordable medication strategies, and comprehensive rehabilitation programs. By addressing these issues, these countries can improve COPD outcomes and enhance the quality of life for individuals living with this chronic condition.

This publication will help better understand the management burden of COPD in our region and will provoke further research and interventions. I'm personally grateful to Getz pharma for providing unconditional support, in arranging this cross countries scientific forum, promoting research and untiring efforts in alleviating the suffering of COPD patients.

MESSAGES

Dr Sumedha Samankantha

COPD remains a global challenge and more so in low and middle-income countries. The reasons for this are multifactorial, high disease burden due to exposures and lifestyle practices, poor health literacy, poor social and economic conditions and limited access to health care are all contributors.

The IRF 2022 brought together experts in pulmonology from many countries of the region and one of the tasks taken up was to identify the challenges that are faced in managing COPD in this region. The deliberations were done by collecting ideas and opinions from all participants, most of whom were clinicians actively involved in managing patients with COPD. The process included obtaining the perspectives from four categories of stakeholders involved in managing COPD, namely the physicians, patients, family members and organizations.

Interesting insights were revealed which are published in detail in this scientific publication. Significant to note are the poor knowledge and misbeliefs about the disease and its therapy by the patients and caregivers concerns about high costs, poor treatment responses and limited access to health care. Of the medical practitioners, lack of access and underuse of investigations, failure to recognize the disease early and failure to refer were noted as significant barriers. For organizations and policymakers, the costs of managing uncontrolled disease were noted as significant.

With these insightful outcomes, I believe this publication will pave the way for a better understanding of the management burden of COPD in our region, and provoke further research on the interventions to help better manage our patients with COPD.

The continued support by GETZ Pharma in promoting research, dialogue and knowledge dissemination is acknowledged with gratitude.



MESSAGES

Dr. Naghman Bashir

COPD Chronic Obstructive Pulmonary Disease, ranks fifth among global burden of Non-Communicable Diseases (NCDs) accounting for almost 153 million Disability-Adjusted Life Years (DALYs), with Pakistan's share of 761 per 100,000 population. A rise in its share of NCDs has been seen consistently over the last decade. Unfortunately, no definitive curative treatment exists for COPD, though it can be very effectively prevented. And the best strategy for its prevention hides in smoking cessation, or more broadly, avoidance of smoke from all resources.



Smoking is the most important cause of COPD, though other factors like ambient particulate matter pollution, occupational particulate matter, gases and fumes, household air pollution from solid fuels, secondhand smoke, and ambient ozone pollution also contribute significantly. Smoking has been consistently on the rise since its introduction to Europe in 1650s, by Vasco De Gama. Despite *capital punishment* for smokers in Turkey and Russia during 1710-1720, smoking habits grew, as tobacco was grown increasingly in Virginia, USA. Smoking habits got a kick with the advent of matchbox around 1820. It is estimated that in 2020, around **5.2 trillion cigarettes** were consumed worldwide. Consumption of cigarettes (and cigars) has shown a small downward trend with the popularity of vaping. In 1976 Professor Michael Russell had written: "*people smoke for nicotine but they die from tar*".

It is encouraging though, that people are becoming more and more aware of risks of smoking due to start of smoking cessation clinics in pulmonology departments all over the country and commemoration of **No Tobacco Days on 31 May** each year. Yet our youths still is attracted to tobacco and its products because it cannot be ignored that *tobacco is the ONLY product in the world which, when consumed according to manufacturers' advice, can be fatal*.

Getz Pharma has taken an active role in addressing the issues, obstacles, myths and finding out-of-box solutions to stop this tobacco epidemic and finding ways of controlling and preventing COPD through its IRF program. It is sincerely hoped that collective wisdom from pulmonologists of Asian developing countries in the form of these publications would find solutions to problems of tobacco and COPD rise.

Significant challenges of COPD Management in developing countries

Abstract

To explore the challenges faced by each stakeholder for COPD management, including the patients, their family/caretakers, healthcare professionals, and healthcare policymakers & organizations, the authors conducted a survey during the International Respiratory Forum conference 2022 in Ho Chi Minh City, Vietnam. A total of 140 pulmonologists from 11 countries participated in the study. A predesigned structured questionnaire was developed pertaining to questions related to challenges faced by each stakeholder for COPD management in Low-middle income countries (LMIC). Each group received one of the four sections of the questionnaire. It was found that 47% of doctors thought that patients couldn't understand the early symptoms as indicators of a serious illness and were afraid of forming a dependency on long-term drugs. According to 64% of doctors, the most frequent implications experienced by caregivers when caring for COPD patients were the financial burden of lifelong therapies and disappointments from treatment failure brought on by a lack of access to high-quality or specialized healthcare. Of the difficulties experienced by healthcare professionals, 50% said that misusing investigations for diagnosis resulted in delayed or underdiagnoses of COPD. The biggest issue with COPD referrals in developing nations was general practitioners' ignorance of recognizing high-risk patients and the need for their referrals. Approximately 80% of respondents said that a sizeable percentage of annual healthcare spending was consumed by expenses related to exacerbations and repeated ER visits. It is concluded that the questionnaire responses reflect physicians' perceptions and experiences in routine clinical practice. Increased knowledge of COPD diagnosis and treatment recommendations, as well as proactive identification of patients at higher risk of developing COPD due to environmental or lifestyle exposures, will help with prompt, accurate diagnoses and efficient treatments, ultimately improving patient outcomes.

Keywords: COPD Management, Challenges, Developing Countries

Introduction

The second most common cause of disability in South Asia, chronic obstructive pulmonary disease (COPD), is

acknowledged as one of the most serious chronic diseases¹. Early diagnosis and consistently accurate therapy throughout the early stages of the disease, when the symptoms are not yet too concerning, are crucial for treating COPD. The development of life-threatening symptoms, including dyspnea, decreased exercise tolerance, and ultimately respiratory impairment, can be postponed; these symptoms greatly lower the quality of life for patients². COPD exacerbations lead to hospital admission and significant financial hardship³. The main objective in managing COPD is the prevention of exacerbations because severe exacerbations are linked to a considerable rise in mortality⁴.

Based on the predominant symptoms of dyspnea and exercise limitation, as well as the persistence of exacerbations while receiving maintenance therapy, the course of treatment may be escalated or sustained⁵. Quitting smoking is the single most important intervention for lifetime risk reduction. Patient education in self-management should begin from the beginning of the disease because of its chronic nature. It has also been discovered that patient knowledge of present symptom levels and evaluations of exacerbation frequency is crucial. For "unstable" COPD, the current management paradigms for individuals with COPD have assumed pharmaceutical-oriented therapy, while for stable COPD, non-pharmacological management plays a more significant role⁶.

It appears that the responsibility for managing patients with unstable COPD falls to the doctors who offer a course of medication and a plan of action for handling exacerbations. It is also crucial to include pulmonary rehabilitation in the treatment of COPD⁶. In the rehabilitation process, the choice of appropriate exercises established while identifying patients in a proper improvement program is crucial. Numerous studies and comprehensive reviews of the literature demonstrate the positive effects of pulmonary rehabilitation on exercise capacity, pulmonary function, muscular strength, and quality of life in people with chronic respiratory disorders⁷. The authors aim to evaluate the challenges faced by each stakeholder in COPD management, including the patients, their family/caretakers, Healthcare professionals, and Healthcare policymakers & organizations.

Methodology

A survey was conducted during the International Respiratory Forum conference 2022 in Ho Chi Minh City, Vietnam. A total of 140 pulmonologists from 11 countries participated in the study. A predesigned structured questionnaire was developed pertaining to challenges faced by each stakeholder for COPD management, including the patients, their family/caretakers, Healthcare professionals, and Healthcare policymakers & organizations. Each sub-section included four questions with possible answers.

Verbal consent was obtained, study participants were randomly divided into four groups, and only one section of the questionnaire was distributed among the participants of each group. The questions and their options in each questionnaire addressed the documented key challenges of disease management and their possible solutions relevant to the assigned stakeholder group. The participants of each group were required to vote on the most appropriate options as per their clinical experience. The statistical analysis was conducted using SPSS Version 22.0. The qualitative data were presented as frequencies and percentages. SLIDO software⁸ was used to present the survey results at the end of the conference.

Results

Of the total, 35 pulmonologists were randomly assigned to each group concerning the challenges faced by each of the four stakeholders. It was observed that 47% of physicians believed that the patients could not comprehend the initial symptoms as signs of a major disease and fear developing the habit of long-term medications. 50% of participants reported that for disease education and better compliance, training on the use of inhalers, smoking cessation counseling, and awareness of disease complications should be initiated for better outcomes. Moreover, 64% of physicians perceived that the financial burden of lifelong treatments and disappointments of treatment failure due to poor access to quality or specialized healthcare was the most common implication faced by caregivers while taking care of COPD patients. Among the challenges faced by healthcare providers, 50% reported that the inappropriate use of investigations for diagnosis caused delayed or underdiagnoses of COPD. Regarding routine clinical practice, 71% believed that the healthcare providers mostly prefer Long acting beta agonist (LABA) + inhaled corticosteroid (ICS) regimen to reduce exacerbations. Moreover, the preferred choice of bronchodilators for immediate symptom relief was Short-acting β 2-agonist (SABA). Lack of knowledge among GPs

to identify high-risk patients and their referrals was determined as the leading COPD referral-related challenge in developing countries. Around 80% believed that costs due to exacerbations and repeated ER visits account for a significant portion of annual healthcare budgets. They also believed that responsible healthcare authorities must limit access to cigarettes/prohibit their sale, or make policy decisions to increase taxes to prevent our generations from smoking.

Discussion

COPD is a progressive disease with recurrent exacerbations, which ultimately leads to a severely impaired quality of life. Since the development of strategies in the management of the disease itself has been mostly static, more attention should be paid to improving the patient's quality of life. According to a survey of outpatients with COPD, higher episodes of dyspnea significantly correlate with low health-related quality of life⁹. We found that patients suffer due to a lack of knowledge among GPs, a major challenge in developing countries, consistent with published literature^{10,11}.

A poorer quality of life was also linked to more severe disease. Studies have examined the role of self-management in enhancing COPD patients' quality of life. In this study, participants reported that COPD is progressive; however, good treatment compliance and quality home care will slow the progression and improve the quality of life. Recent research has proved that disease-specific self-management in COPD patients improves health status and lowers overall hospital admissions. The continuum of care must include health education programs focusing on behavior change. Self-management boosts the patients' knowledge and skills needed to control their illness¹². A systematic review by Bentsen et al. revealed that self-management strategies improve COPD patients' overall health¹³. Consistently, in the present study, 39% of physicians believed that enabling patient self-management could improve the patient's compliance, while 50% promoted the training of inhalers/medications use. Among the non-pharmacological approaches of self-management, smoking cessation was considered the most effective method for preventing and controlling disease progression.

In addition to smoking cessation, pulmonary rehabilitation was suggested as the effective non-pharmacological self-management approach for COPD patients to slow down the disease progression. Recent

Table 1: Responses obtained from the healthcare providers for COPD management.

Questions	Responses	%
Patients		
What are the most crucial patient-related barriers leading to the adversities of COPD?	Unable to comprehend the initial symptoms as a sign of a major disease	47
	Fear of developing the habit of long-term medications	47
	Considering it a part of aging or smoking habits and not consulting the physician	37
	Self-medication, considering it seasonal flu or mild chest infection	21
What should be emphasized in the patients of COPD for their disease education and better compliance?	Training on the use of inhalers/medications	50
	Enabling patient self-management by providing monitoring and documenting tools	39
	Smoking cessation counseling to slow down the progression of the disease	50
	Awareness of disease complications and possible exacerbations due to poor treatment compliance	50
For newly reported COPD patients, conveying a complete drug/smoking/addiction history is difficult because?	The patient is reluctant to share information due to fear of being judged	47
	Fear of forced smoking cessation	42
	Fear of getting diagnosed with a chronic, incurable disease and its negative social impact	47
	Unable to explain the severity and frequency of the symptoms	5
Regarding the non-pharmacological self-management of COPD by the patients, which are the easiest and most effective ways recommended to all the patients in order to slow down the progression of the disease, in your opinion?	Physical exercise	26
	Pulmonary rehabilitation	63
	Smoking cessation	68
	Flu, COVID 19 and pneumococcal vaccinations	37
Family & Caretakers		
From the caregivers' perspective, what are the most common implications they face while caring for COPD patients?	Unable to socialize properly due to constant caregiving of their dependent patients	20
	More prone to psychological disorders	20
	Professional shortcomings due to unpredictable patient care	12
	Financial burden of lifelong treatments and disappointments of treatment failure due to poor access to quality or specialized healthcare	64
What are the essential measures that caregivers should take in order to efficiently support their COPD patients?	Encourage smoking cessation	60
	Avoid passive smoking and provide healthy air quality at home to slow down the disease progression and avoid any chances of exacerbations	40
	Be aware of the situations that can trigger exacerbations and must know how to handle them initially before proper medical care is provided	60
	Focus on providing a healthy diet to the patient	16
Which are the most important instructions that physicians must convey to the caretakers of dependent COPD patients?	COPD is a progressive disease; however, good treatment compliance and quality home care will slow the progression and improve the quality of life	96
	COPD can cause frequent infections and episodes of acute symptoms	20
	Must keep strong follow-ups with the primary physician as advised in order to get the treatment titrated timely	40
	Mental stress and poor diet can increase the disease progression	12
Regarding palliative care of COPD patients, what should be the primary concerns of the caregivers, and which of the following is the most advised and recommended remedy?	Balanced nutritional support has been shown to improve the strength and function of respiratory muscles	44
	Mind-body interventions not only treat disease-related depression and anxiety but also improve the physical status like lung functions, exercise capacity, and fatigue	40
	Fans blowing air into the face have been shown to relieve breathlessness to some extent	8
	Pulmonary rehabilitation, acupuncture, and acupressure are non-pharmacological interventions that can be regularly used to avoid or reduce breathlessness and improve quality of life	52
Healthcare Professionals		
What could the reasons be behind delayed or underdiagnoses of COPD?	Physicians focus solely on smokers	46
	Inappropriate use of investigations for diagnosis	50

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	Use of domestic remedies during the initial course of disease without a diagnosis	39
	Disregard/nihilism for treatment effectiveness	7
For reduction in exacerbations, which regimen is most preferred?	LABA monotherapy	4
	LABA + ICS	71
	LABA + LAMA	39
	LAMA monotherapy	7
What is the physicians' perception regarding the regular use of oral glucocorticoids or corticosteroids in COPD?	Very beneficial in reducing exacerbations	54
	There are no clinical benefits	0
	Can increase the risk of repeated pneumonia in patients with severe disease	46
	Provide good anti-inflammatory benefits	18
What is the most preferred choice of bronchodilators for immediate symptom relief?	SABA	54
	SAMA	4
	SABA + SAMA	36
	ICS	21
Should the long-term use of Azithromycin and Erythromycin be considered for a reduction in exacerbations in spite of the increased risk of bacterial resistance?	Yes	68
	No	32
Healthcare policymakers & organizations		
What could be the major culprit/s behind the high prevalence and mortality rate of COPD in Low and middle-income countries?	Uncontrolled industrial air pollution	15
	Patients' poor access to healthcare and affordable medications	35
	Smoking and household pollution	65
	Undermining the disease progression by physicians and patients	10
What are the major challenges of COPD referrals in developing countries leading to delayed access to diagnosis and treatment, causing early mortalities?	Lack of knowledge among GPs to identify high-risk patients and refer them to the specialists	70
	Lack of pulmonologists in the community, especially in remote rural areas	30
	Lack of screening methods, communication, and coordination with specialists	45
	Treatment attempts for alternate diagnoses due to similar and atypical clinical presentation of the disease	20
How can responsible healthcare authorities prevent our generations from smoking?	Limiting access to cigarettes/prohibition of their sale or Policy decisions to increase tax	70
	Setting up smoking cessation units in every tertiary and secondary care hospital	35
	Increasing awareness about health risks from smoking with practical and safer alternatives for smoking cessation	65
	Allowing smoking in designated areas only to avoid the risks associated with passive smoking	10
According to the GOLD report in 2022, COPD is still a leading cause of death globally and accounts for a significant portion of annual healthcare budgets. This economic burden is mainly due to the following:	High ambulatory oxygen costs	10
	Hospitalizations and palliative hospice care costs	50
	Drugs costs	10
	Costs due to exacerbations and repeated ER visits	80

Long acting beta agonist (LABA); Short-acting β_2 -agonist (SABA); inhaled corticosteroid (ICS); long-acting muscarinic antagonist (LAMA); short-acting muscarinic antagonist (SAMA); Chronic Obstructive Pulmonary Disease (COPD); corona virus disease (COVID).

data unambiguously demonstrates the advantages of pulmonary rehabilitation, and its inclusion in the management of COPD by primary care doctors may rise by educating all the stakeholders about its elements and advantages¹⁴. Xu and colleagues¹⁵ researched modified pulmonary rehabilitation effects on individuals with moderate to severe COPD. For 12 weeks, the patients of the interventional group received traditional therapy, nursing care, and modified pulmonary rehabilitation. While the control group, on the other hand, received

standard care and training in pursed-lip breathing, nursing, and abdominal breathing. It was found that the patient's pulmonary rehabilitation had significantly improved physical abilities and dyspnea episodes.

As costs due to exacerbations and repeated ER visits accounted for most of the economic burden on the annual healthcare budgets, limiting access to cigarettes or policy decisions to increase tax was perceived as the principal action that should be taken by the healthcare

authorities in order to prevent our generations from this illness and its associated consequences. Price hikes on tobacco products are one of the most efficient ways to reduce cigarette smoking, according to the World Health Organization¹⁶. A multitude of actual data backs up this claim¹⁷⁻¹⁹.

Although the study findings are based on a small sample size, the perspective is obtained from clinicians of diverse healthcare facilities. Hence this pilot project collectively highlighted the challenges faced by the major stakeholders related to COPD management as per the perception of participant pulmonologists/physicians.

Conclusion

In conclusion following key points were identified from this physician-based survey 1) Lack of awareness and education among patients and their caregivers, 2) Smoking cessation and pulmonary rehabilitation was perceived as the easiest and most effective non-pharmacological self-management ways to prevent disease progression. 3) For reduction in exacerbations, LABA + ICS is the most preferred regimen. 4) Oral glucocorticoids or corticosteroids are beneficial in reducing exacerbations, as per the physicians' perception in LMICs. 5) SABA is the most preferred choice of bronchodilators for immediate symptom relief in developing countries. 6) Long-term use of Azithromycin and Erythromycin be considered for a reduction in exacerbations. 7) Lack of knowledge among GPs is the major challenge of COPD referrals in developing countries. 8) Limiting access to cigarettes/prohibition of their sale or Policy decisions to increase tax to prevent smoking.

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