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Assessment of knowledge, attitude, and behavior about the disease process and physiotherapy management in patients with chronic obstructive pulmonary disease: A qualitative study

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Abstract:

BACKGROUND: Chronic obstructive pulmonary disease (COPD) is a group of progressive lung diseases; the most common are emphysema and chronic bronchitis. It is considered to be the major cause of morbidity and mortality worldwide and is considered to be one of the leading causes of deaths in India, the main reason being misconception/misinterpretation of the disease and unawareness about the risk factors which hinder early diagnosis and its treatment effectively. Therefore, the present study aimed to assess the knowledge, attitude and behavior about the disease process and physiotherapy management in patients diagnosed with COPD.

MATERIALS AND METHODS: Ethical clearance was obtained before initiating the study. It was a cross-sectional, qualitative study. In total, 14 patients of COPD were recruited for the study by convenience sampling. The total study duration was 6 months. Two focused groups (n = 14) were conducted with seven COPD patients (diagnosed by chest physician on the basis of pulmonary function testing) in each after obtaining the written informed consent. Focus group contents were video graphed after obtaining the consent and a focus group discussion (FGD) guide comprising of 15 questions was used for the study. Transcripts were prepared from the audio/video recordings and were analyzed qualitatively by narrative analysis.

RESULTS: The narration transcripted during both the sessions of FGD showed significant negligence about the disease process, its precipitating factors, preventive measures, and physiotherapy management among the patients suffering from COPD in the community. None of the patients were aware even about the term "chronic obstructive pulmonary disease" and only 35.71% of patients were aware of physiotherapy management as a mean of treatment for COPD.

CONCLUSIONS: The present study concludes that there is a lack of knowledge, incorrect attitudes, and flawed behavioral changes which needs to be corrected among the patients with COPD. These patients require correct, detailed, and broad-based information about their condition and availability of treatment options.

Keywords:

Chronic obstructive pulmonary disease, physiotherapy, qualitative research, morbidity

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Introduction

Chronic obstructive pulmonary disease (COPD) is a progressive, chronic inflammatory lung disease; mostly contributed by emphysema and chronic bronchitis and its symptoms include breathing difficulty, wheezing, cough, and mucus production. The trajectory of COPD can be daunting for both patients and clinicians. The WHO has defined COPD as an underdiagnosed, life-threatening lung disease, which is not fully reversible and is characterized by chronic airflow obstruction hampering the normal breathing.[1] The rising prevalence of COPD is generally attributed to smoking. The environmental factors and host predisposition that is alpha-1-antitrypsin deficiency also play an important role in development of the disease process. Apart from smoking/tobacco smoke, the key environmental factors include occupational exposure to irritants, dusts and fumes, and indoor air pollution caused by combustion of biomass/traditional fuels and coal. Other potential contributory risk factors include outdoor air pollution, allergy and bronchial hyper-responsiveness, prematurity, low birth weight, and certain childhood respiratory infections.[2]

The Global Burden of Disease Study reported a prevalence of 251 million cases of COPD globally in 2016.[3] As per the recent estimates from India (2005), COPD accounts for 7% of deaths and 3% of disability-adjusted life years (DALYs) lost, the main reason being misconception or misinterpretation of the disease and the unawareness about risk factors which hinder early diagnosis and its treatment effectively.[4,5]

India has also faced the disgrace of having the utmost occurrence of "loss in potentially productive years of life" worldwide in 2005.[6] COPD contributes to a great extent in increasing percentage of mortality and it accounts for ≥64.7 age-standardized death rate per 100,000 among both males and females in India which is estimated to be among the highest in the world.[4,5] The multidisciplinary management for patients with COPD includes smoking cessation, influenza and pneumonia vaccinations, pulmonary rehabilitation, and pharmacotherapy using inhaled bronchodilators, long-acting inhaled anticholinergics or long-acting inhaled β–agonists, inhaled corticosteroids or continuous oxygen therapy according to disease severity and symptoms, can significantly improve a patient's health-related quality of life, reduce exacerbations and their consequences, and alleviate the functional, care utilization, and financial burden of COPD.[7] Strong evidence exist supporting the crucial role of pulmonary rehabilitation in the management of patients with COPD. Despite this, many people with COPD do not complete their pulmonary rehabilitation program or choose not to attend at all.[8]

Majority of the patients with chronic respiratory disease are ignorant about their disease, importance of compliance to medicines, and about precautions of the disease.[9,10] It is important for the patients to be aware about their condition as unawareness leads to frequent exacerbations of the disease with the symptoms of excessive breathlessness, cough with expectorations, hypoxemia, depression, recurrent hospital admissions, inappropriate or negligible use of medications, reduced immunity, and restricted participation in recreational and social activities ultimately leading to rapid progression of the disease and reduced quality of life. Identifying the knowledge, attitude, and behavior among the COPD patients about their condition is important as it makes them aware of the disease process and its characteristic features. This helps them to cope up with their problems, create a better outlook toward the future by participating in pulmonary rehabilitation programs, and building up a rapport with the health-care professionals for better prognosis. Therefore, the present study aimed to assess the knowledge, attitude, and behavior about the disease process and physiotherapy management in patients diagnosed with COPD.

Materials and Methods

Ethical clearance was obtained (HMPCMCE/HREC/FCT/45/09) from the Institutional Ethics Committee, H.M. Patel Center for Medical Care and Education. It was a cross-sectional, qualitative study. A qualitative research design using focus group discussions (FGDs) was utilized for the study. The total study duration was 6 months. Fourteen patients diagnosed as COPD by the chest physician based on pulmonary function testing, fulfilling the inclusion and exclusion criteria were recruited for the study by convenience sampling during the 6 months of the study period.

The patients diagnosed as stable COPD (clinically stable without acute exacerbation) by chest physician were included for the study. Unstable COPD patients (patients with acute exacerbations), patients with any other respiratory disease, traumatic chest injury, psychiatric problem who finds difficulty in understanding, and patients who declined to participate were excluded for the study.

Written informed consent was obtained from all the patients before conducting the study including their approval for using the audio and video recordings during the FGDs.

Two FGDs sessions were conducted with the group of seven patients of COPD in each.

Each focus group was lasted for about 60 min and was managed by one moderator (who was not a researcher in the study to avoid bias), one more person even who

was not a researcher for transcripting verbatim, and one audio/video recording person.

An FGD guide was developed to cover the key issues related to the research question which comprised of 15 questions related to disease process, progression, and management.

Each FGD comprised an introduction of the entire team by the facilitator followed by introduction of all the participants.

Transcripts were prepared from the audio and video recordings and were analyzed qualitatively by narrative analysis.

The moderator was free to word and sequence questions in the most appropriate manner and to pursue areas in greater depth. All the patients enthusiastically participated in the study and refreshments were made available for them.

Results

The common threads transcripted were as follows:

About the disease process

After inquiring about the disease process, the most common answer that the study showed about the name of disease was "breathing trouble" and two (14.28%) patients called it "allergy." None of them were aware about the name as COPD, although the participants were sufferer from 6 months to 13 years.

While reporting the causes, four (28.57%) participants suggested dust and allergy being the main reason for the disease. Change in season was reported as causative factor by three (21.42%) participants. The participants even suggested tobacco chewing (eating "mava"), food, coal, and strong smell as the cause. One of the participants stated that "it is due to heavy work" and the rarest cause told by a participant was "it is in my genes." Two (14.28%) participants were completely unaware of the cause of their condition.

Nine (64.28%) patients memorized the advice given by their health-care provider about smoking cessation and seven (77.77%) out of those 9 patients followed it. One of the patients had stopped smoking after looking the influential advertisements about quit smoking.

When they were questioned about the steps they were taking as precautionary measures for their condition, majority of them (85.71%) quoted that they follow doctor's advice and few (50%) said about controlling their diet, wherein they used to be abstemious from taking spicy, oily, and sour food.

Few (42.85%) of the patients quoted to continue home remedies ("DesiVaidu") in which they elaborated as having "ardusi," "haldi milk," "carrot juice," "amla juice," and even "using salt cubes." One of the patients used to walk regularly as his precautionary measure.

Views about the physiotherapy

Except for five (35.71%) patients, none of the other participants were aware about breathing exercises as a mean of treatment for COPD. They stated that limb exercises are the only form of exercises. When they were asked about doctor's advice, apart from regular medicines, avoidance of allergens, diet control, avoidance of alcohol, and tobacco consumption, only three participants were advised for regular exercises.

While reporting the benefits of exercises in COPD, the participants stated that exercises are helpful to them but they were not aware of actual breathing exercise used for COPD. Two (14.28%) participants stated they used to follow "general breathing exercises" showed on television.

Enlisting the benefits of exercise, four (28.57%) of them reported that exercise relieves the symptoms and improves well-being.

While ending when they were asked that if exercise benefits them whether they would be ready to do, then all the participants agreed. But when reasons were asked for the avoidance of physiotherapy, many issues were stated such as lack of time, lack of money, laziness, forgetfulness, and lack of transport facilities.

One patient informed that he could identify his symptoms by seasonal change as his cough and BLN increases, and thereby he has to get admitted. Many of the participants reported that they had to face problems in carrying out daily activities such as stair climbing, lifting heavy objects, and farming activities. The most awful impact of COPD on patients' life was that two (14.28%) participants changed their profession.

Discussion

The present study reveals the great amount of negligence and unawareness about the disease and its management among its sufferers. While doing the analysis, several themes emerged which can help the health-care providers to understand the mindset of patients and to provide them the utmost education related to disease process and its management and to provide the multidisciplinary care.

As per the report by Salvi and Agrawal, ≥3 million people are being killed every year by COPD, being the 4th largest cause of death in the world, and the mortality

rates due to COPD are anticipated to increase over 160% over the next two decades. The only way found to decline the rate of deaths due to noncommunicable and chronic respiratory diseases is to have a respiratory revolution through intense nationwide effort and appropriate policy decisions in the form of a National COPD Prevention and Control Program.[11]

The present study suggests that people were unaware of their disease process. They did not know even the name of their disease. Few termed it as breathing trouble and few as allergy. Uzel *et al*. identified the awareness of COPD patients regarding their disease and found that 78% of the patients suffering from COPD did not know what COPD means and only 3.5% patients could correctly write "chronic obstructive pulmonary disease."[12] Understanding and basic knowledge concerning the disease are the vital factors in the management of the chronic diseases both in general and disease-specific population. Many studies worldwide have been intended to recognize and fill the gap regarding the awareness of COPD.

Kessler *et al*. detected patients with COPD, having frequent exacerbations had a poor understanding of the term "exacerbation," instead they preferred to use "chest infection" or "crisis." About 59.2% of the patients had never heard of the term or did not know what it meant and only 1.6% could explain its meaning correctly.[13]

In the present study, it was surprising to know that the patients were wrongly aware about the causes of their disease. Many of them said about tobacco chewing, strong smell, food coal, and heavy work. Although majority of the patients were aware of no smoking advice, only half of them followed it.

Beniwal *et al*. conducted a study in patients with chronic diseases for 6 months to see the awareness, attitude, and behavior about their disease, compliance to drugs, and precautions. The results showed that among 29 COPD patients, only 6 (20.6%) knew they had COPD and another 17 (58.6%) knew they had respiratory problem. Only 5 (17.2%) COPD patients remembered the no smoking advice. In his study, he concluded that majority of the patients were unaware about their disease, significance of compliance to medicines, and about safety measures of the disease.[9]

Almost all the behavioral changes that the patients in this study had considered were amiss. They knew about dietary changes but in the form of less oil, less spicy, and less sour food instead of high protein diet, high carbohydrates, and plenty of fluids. Nutrition is one of the key elements in management of patients with COPD. The patients with COPD are at increased risk of developing malnutrition and therefore should always be encouraged to eat a variety of fruits and vegetables, and dairy products and should have regular nutritional screening for the early identification of problems and timely treatment.[14]

A hospital-based survey was carried out on patients with COPD to know their awareness about the disease and pulmonary rehabilitation. Out of total 282 patients, 104 (36.9%) patients believed that a heavy meal could aggravate the symptom of breathlessness pointed out the insufficient importance being given to patient education for COPD patients as a part of health-care intervention.[10] The need for more education on diet and self-care has been also identified by the Scott *et al*. who assessed the information needs and knowledge of COPD patients.[15]

The patients in the present study were still following the home remedies which may yield them to symptomatic relief but do not help them to cure the disease or to prevent progression. They were also not aware about precautionary measures such as avoid exposure to allergens and use of face mask. The unawareness about the precautionary measures may lead the patients to be less alert in identifying the warning signs of exacerbations and deprive them of the skills to self-manage their condition.[10]

The patients in the present study did not know how to relieve their symptoms, how to reduce BLN and removal of secretion by adopting positioning and using pursed-lip breathing instead they knew only to take medicines and get admitted. Furthermore, very few were advised for physiotherapy treatment. The similar results were observed in a study carried out in South India where majority of the patients were unaware about the positioning (70.9%), secretion removal techniques (80.5%), relaxation techniques (83.7%), smoking cessation (71.3%), and suggested the provenance to pulmonary rehabilitation being less emphasized in the existing health-care system.[10]

A study done by Bulley *et al*. suggests that when considering rehabilitation attendance, potential participants are able to identify possible benefits, but previous experiences of symptoms and attitudes toward their condition can influence the views both positively and negatively. Information and enthusiasm conveyed by the referring clinician, as well as previous interactions with health professionals can have powerful impact on views about attending. Referral practices should be informative and enthusiastic to increase the likelihood of uptake.[16]

Probably, it may be the other way round. The patients may not be giving priority to exercises, which can be

demonstrated in the presented study by the reasons given for avoidance of physiotherapy treatment through ignorance, lack of time, laziness, having transport problems, and forgetfulness.

This issue is clearly proved by a study carried out by Taylor *et al*., which concluded that many patients with COPD avoids to participate in pulmonary rehabilitation program by just perceiving the ineffectiveness of the program. Difficulties with travel to the program and being unwell are barriers to both uptake and completion. Improving attendance at pulmonary rehabilitation requires consideration of how information regarding the proven benefits of pulmonary rehabilitation can be conveyed to eligible patients, along with flexible program models that facilitate the access and accommodate comorbid disease.[17]

Keating *et al*. carried out a systemic review to determine the factors related with uptake and completion of pulmonary rehabilitation for patients with COPD. The study identified the travel and transport being the consistent factors as barriers for the uptake and completion of rehabilitation program. Apart from this, interference to the accustomed schedule, influence of the references made by the doctors, program timing, and lack of perceived benefit were also found to influence the compliance for the pulmonary rehabilitation. The smokers and patients suffering from depression were found to be at higher risk for the noncompliance and so to increase the turnout in pulmonary rehabilitation will necessitate focusing on these issues by better involvement of patients in decision-making for the overall treatment.[8]

The other possible reason might be illiteracy among the patients with COPD. Impaired health literacy is considered to be an extensive problem affecting the whole community and all races; greatly affects the elderly and low-income populations.

Nicola J Roberts in "Health literacy in COPD" has mentioned that the health literacy meaning "ability to read, understand, and act on health-care information" has a considerable impact on the disease outcomes and the delivery of the health care can be improved by making the patients aware of their problems, providing information related to disease process, progression and treatment in various different forms, and by emphasizing the verbal communication with pictorial diagrams.[18] Inadequate health literacy creates a major barrier for the better understanding of the disease[19] and is independently associated with poor health[20,21] and higher hospital costs.[22]

Majority of the patients suffers difficulty in activities of daily living (ADL) and may opt to change their profession. Knowing about the disease process, progression, and treatment approaches used to treat the disease will help them to learn adequate self-management strategies and delay the progression of the disease, thus, helping them to cope up with the daily activities, and continue job routine; and improve the quality of life.

Thus, the above discussion lead toward the fact from the patients' point of view for our objective of assessing knowledge, attitude, and behavior regarding disease process and physiotherapy management in COPD patients and hence helps us in concluding our study.

Conclusions

The results of the study conclude that a significant lack of knowledge, wrong attitudes, and flawed behavioral changes exist among the COPD sufferers regarding the disease and physiotherapy management. It is an imminent need to educate the community about the disease and scope of physiotherapy as a part of overall management of COPD. The patients of COPD should be provided with correct, detailed, and broad-based information about their condition and treatment going to be provided during their routine consultation through which they can delay the progression of disease, improve self-management strategies and can have a better quality of life.

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Conflicts of interest

There are no conflicts of interest.

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