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Amid COVID-19 pandemic: Challenges with access to care for COPD patients

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ABSTRACT

Chronic Obstructive Pulmonary Disease (COPD) is a chronic inflammation in the lungs that causes obstruction in the airway, poor airflow, and irreversible loss of lung function. In clinical practice, comprehensive care for COPD patients includes the diagnosis using spirometry, clinical examination and comprehensive pharmacological and non-pharmacological management. The diagnosis is based on symptoms, dyspnea and lung function impairment and can be mild to very severe. Symptoms are examined using the COPD assessment test (CAT) score, and dyspnea grade are examined using a modified MRC from GOLD guidelines. When mild, the care includes self-management education, smoking cessation, lifestyle modifications, vaccination, and short-acting bronchodilators. Self-management education involves inhaler device training, breathing technique, early recognition of acute exacerbations and writing action plans. As the disease progresses, other care measures are added. These measures include the addition of long-acting inhaler therapies, pulmonary rehabilitation, oral therapies, oxygen and lung transplantation. During the final stages of COPD, patients receive end-of-life care (Bourbeau et al., 2019).¹

The novel coronavirus disease (COVID-19) is a viral infection caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) that is spread through respiratory droplets. This infectious disease has led to a pandemic and is affecting the lives of many around the world, including Canadians. During this pandemic, the non-essential health services, including caring for patients with COPD, have been put on hold to reduce the risk of spread. Other implications of this pandemic for COPD patients include the health risk in case of infection. A meta-analysis including studies from January to March 2020 in Wuhan showed that pre-existing COPD worsens the risk of COVID-19 progression and leads to poorer prognostics. The sub-group analysis showed a significantly higher risk of ICU requirements and death in COPD patients who are infected with the SARS-CoV-2 virus. Studies suggest strong efforts to mitigate the risk of infection in this population (Zhao et al., May 2020).² This makes caring for this population even more critical during the pandemic.

Introduction

Chronic Obstructive Pulmonary Disease (COPD) is a chronic inflammation in the lungs that causes obstruction in the airway, poor airflow, and irreversible loss of lung function. In clinical practice, comprehensive care for COPD patients includes the diagnosis using spirometry, clinical examination and comprehensive pharmacological and non-pharmacological management. The diagnosis is based on symptoms, dyspnea and lung function impairment and can be mild to very severe. Symptoms are examined using the COPD assessment test (CAT) score, and dyspnea grade are examined using a modified MRC from GOLD guidelines. When mild, the care includes self-management education, smoking cessation, lifestyle modifications, vaccination, and short-acting bronchodilators. Self-management education involves

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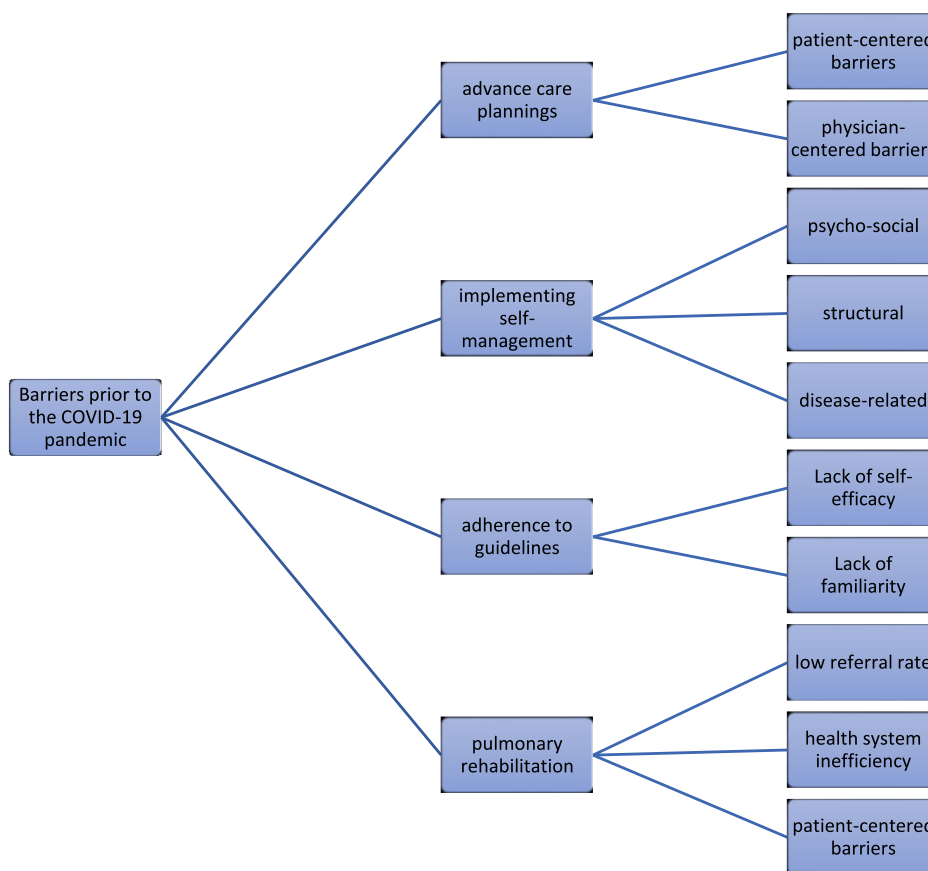


Fig. 1. Barriers in providing care to COPD patients before the COVID-19 pandemic.

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Discussion

Barriers to COPD care before COVID-19 pandemic

Various studies have looked at different barriers in providing care for COPD patients. A summary of the findings is illustrated in Fig. 1.

Non-adherence to the guidelines by physicians

A survey study in 2012 suggested that less than 60% of physicians adhere to five out of seven GOLD guideline recommendations when caring for outpatient COPD patients. The adherence to FEV1-directed therapy, and FEV1-directed pulmonary rehabilitation recommendations, counselling about smoking cessation, performing pulmonary function test in smokers, recommending influenza vaccination were examined. Lack of self-efficacy or one's confidence in performance ability and lack of familiarity with the guidelines were the main barriers in adherence to FEV-1 directed recommendations. Lack of perceived benefit was the main barrier in recommending influenza vaccinations. Times constraint was identified as the main barrier in performing PFT in smokers. Low familiarity with the guidelines is related to lack of training, and low self-efficacy is related to a lack of confidence in one's abilities.³ Studies suggest that BTS models, which

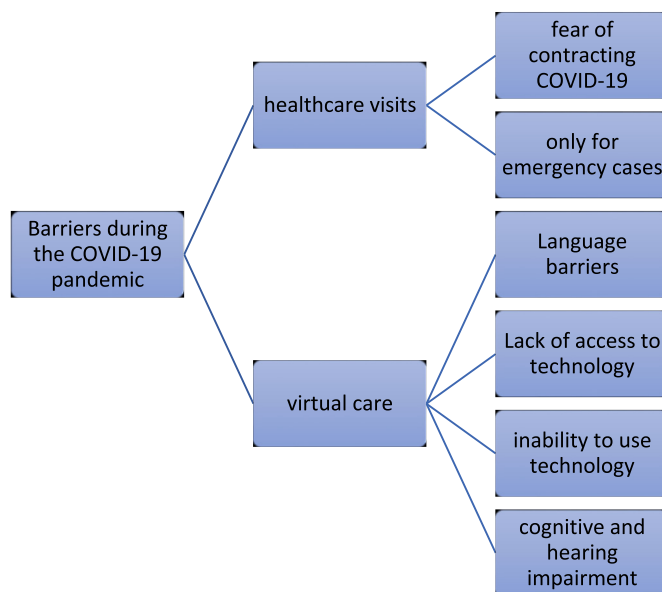


Fig. 2. Barriers in providing care to COPD patients during the COVID-19 pandemic.

are short-term learning practices that help educate healthcare providers are effective in improving physician's confidence and knowledge as well as adherence to GOLD guidelines.⁴

Limitations in self-management

Patient's engagement in self-management is influenced by

psychological, social, disease-related and structural factors. A systematic review looked at the facilitating and limiting factors to implementing self-management in COPD patients. Physicians have addressed the lack of patient's knowledge about the terminology, progressive and irreversible nature as well as recognition and response to acute exacerbations as a potential barrier to patient undertaking self-management. This study also specified the lack of physician's knowledge of self-management. Physicians mostly focus on smoking cessation, exacerbations and medications while not considering life-style modifications such as diet and exercise. Healthcare providers also complained about lack of role clarity and place for referral.⁵

Most patients have rated their experience with their HCPs as positive and these interactions were more efficient when a multidisciplinary team was involved. However, efficient relationships with the HCPs were impeded by lack of opportunities to ask questions, lack of faith in physicians, long wait times and conflicting information.⁵

Barriers in access to pulmonary rehabilitation

Pulmonary rehabilitation is an intervention that focuses on patient-centered therapies for COPD including self-management, exercise training and education aiming to improve adherence of patients to healthy behaviors. Its implementation involves a variety of healthcare professionals. Pulmonary rehabilitation has shown to have psychological as well as physical benefits for patients with COPD. This includes reducing symptoms of anxiety and improving dyspnea, health status and exercise tolerance.⁶ Despite its shown benefit, it is used in less than 10% of COPD patients who could benefit from it. Access is challenging in rural areas and the frequent travels to these programs lowers the attendance of patients.⁷ A cross-sectional study showed that low adherence to PR programs was associated with limited cognitive function, smoking and moderate adherence was associated with low socio-economical status.⁸

In Canada, pulmonary rehabilitation is mostly delivered in out-patient hospital setting.⁹ Clinical trials in 2017 showed that home-based PR is better than center-based PR in improving health-related quality of life (HRQoL) as well as 6-m walking distance (6MWD). The barriers in accessing PR include low referral rates and health system inefficiency; however, patient related barriers also play an important role. By implementing the home-based program, many of the patient-related barriers including attendance and adherence to the program were lifted and most patients completed this program. This study suggested that home-based programs require minimal resources and supervision, but provide better short-term health outcomes and a comparable 12-month QoL to center-based PR.⁷

Barriers in advance care planning

The physician-centered barriers in advance care planning for patients with COPD include late diagnosis of COPD, unique disease progression, comorbidities that cause changes in progression, difficulty determining prognosis, limited physician's skills and reluctance in initiating ACP, inadequate environments for discussing ACPs, time and reimbursement limitations and incorrect notion that ACPs should be initiated at end-of-life care.¹⁰

The patient-centered barriers include lack of insight about the disease progression, anxiety and fear, cognitive impairment, assumption that HCPs initiate ACPs as needed, not disclosing acute exacerbations, and misperceptions that ACP discussions deny life-supportive care.¹⁰

Barriers to COPD care during COVID-19 pandemic

Barriers in in-person care.

Given that many elective surgeries and non-essential in-person healthcare visits have been put on hold, COPD patients cannot receive care unless due to an emergency. The fear of contracting coronavirus

may keep many away from hospitals even in cases of acute exacerbations. Other barriers to COPD care that existed before COVID-19 continue to exist. For instance, the wait times at the hospitals become much longer, communication and relationships with healthcare providers become much less efficient due to time constraint, and the stress from the pandemic may result in less adherence to self-management measures.

Barriers in use of virtual care

To reduce the in-person doctor visits and risk of virus spread, Canada Health Infoway has been accelerating its shift to virtual care that provides e-visits and e-consults, online mental health services as well as tele-triaging for COVID-19 tests.¹¹ The older studies that focus on telephone-linked computer systems to deliver COPD care specified some limitations. Cognitive or hearing impairment, lack of access to the technology, language barriers, and difficulty in navigating the systems had previously been identified as limits of virtual care.¹²

As the prevalence of COPD increases with age, the number of seniors who will require virtual COPD care is higher than the younger generations.¹³ The elderly population commonly has a harder time navigating new technologies and may not be as open to virtual care as the younger generations (see Fig. 2)

CRediT authorship contribution statement

Ali Elbeddini: Writing - review & editing, Conceptualization, Data curation, Formal analysis. **Yasamin Tayefehchamani:** Conceptualization, Data curation, Formal analysis, Writing - review & editing.

Declaration of competing interest

No known competing interest to declare

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Appendix A. Supplementary data

Supplementary data related to this article can be found at <https://doi.org/10.1016/j.sapharm.2020.06.002>.

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