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Literature Review

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Older Adults and their Caregivers' Self-Management of COPD Post Covid-19: A Literature Review

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Abstract

Objective: to discuss strategies to support older adults' and their informal caregivers' self-management of chronic obstructive pulmonary disease (COPD) after COVID-19 pandemic.

Background: Evidence amounts in the literature that COPD will be the fifth cause of burden to the healthcare system globally and the third cause of mortality among older adults in 2020 due to ageing population and exposure to tobacco smoke. Similarly, the novel Coronavirus severely affected older adults.

Study design and Methods: This literature review manuscript involves searching databases such as CINAHL, Coronavirus Research Database, and Google Scholar for manuscripts published between 2010 and 2020 using keywords such as older adults, respiratory disease, self-management, and Coronavirus to retrieve appropriate peer reviewed articles in English language.

Results: Most self-management toolkits reported in the literature are general and not designed for older adults living with COPD and their caregivers after COVID-19.

Discussion: Self-management toolkits covering topics such as telehealth, vaccination, and plan for home services will improve older adults' quality of life after the pandemic.

Conclusion: Supporting older adults living with COPD and their caregivers' self-management will reduce the burden and mortality of the disease. Implications for research, policy, and practice: additional research is needed to explore knowledge and skills older adults living with COPD and their caregivers require to engage in self-management after COVID-19.

Keywords: COPD; COVID-19; Caregivers; Older adults; Self-management; Telehealth

Introduction

The proportion of older adults, those individuals age 65 years and above, in the 21st century is increasing worldwide and growing at a faster rate than young adults. The United Nations anticipates that by 2050 all parts of the world will experience a rise in population with one sixth of the world's population being individuals 65 years and older; one quarter of Europe and North

America's population will comprise of older persons 65 years and above [1]. Older adults are reported to have high mortality from respiratory conditions compared with younger population [2]. Chronic respiratory conditions such as recurrent pneumonia and chronic obstructive pulmonary disease (COPD), which includes non-reversible asthma, bronchitis, and emphysema, are commonly reported among older adult population[2,3].Researchers projected that in 2020 COPD will be the fifth cause of burden to the healthcare system globally and the third cause of mortality among older adults globally [2,4]. Furthermore, the novel Coronavirus

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Materials and Methods

The author searched databases including Cochrane Library, CINAHL, Medline (Ovid), Coronavirus Research Database, and Google Scholar for manuscripts published between2010 and 2020 on the topic. Organizations websites such as BREATHE the lung association Saskatchewan were also searched for relevant information on older adults and their caregivers' self-management of COPD. Keywords including older adult or elderly or seniors, respiratory conditions or respiratory disease, COPD, Coronavirus, and self-management or self-care were used to retrieve articles. Full text manuscripts reported in English language and focused on older adults or their caregivers' self-management of respiratory conditions were retrieved and included in the literature review.

Results

Many toolkits were identified on self-management of COPD. However, most of these toolkits were general and created for health professionals to support patient's self-management.

There is limited self-management toolkit designed specifically for older adults living with COPD and their caregivers during or after COVID-19.

Discussion

It is well established in the literature that tobacco smoking and age related changes predispose older adults to COPD which is a preventable and treatable condition; however, the condition has now been declared as a public health emergency [2-4,16]. COPD is associated with progressive and irreversible limitation to airflow as a result of a chronic inflammatory reaction in the lower airways to irritating particles and gases. This process leads to symptoms such as breathlessness, chronic cough, which may be productive in some patients, fatigue, pulmonary hypertension when severe, and exacerbations [4,17]. Other identified risk factors of COPD include prolonged exposure to noxious particles from burning of biomass fuels and woods, exposure to occupational dusts and chemical agents, animal dung, crop residues, and others [4,17]. Genetic constitution and socioeconomic status have been associated with the risk of developing COPD. Researchers have projected that the prevalence and burden from COPD will increase in the next ten years due to population's increased exposure to smoke from tobacco and bush fire in countries like Australia, an ageing population, and emergence of harmful health practices such as vaping which affect lung health [4,18,19]. Furthermore, the emergence of new and infectious respiratory conditions such as COVID-19 will increase the burden of respiratory illness on older adults and will require strengthening the population's selfmanagement of COPD. In remote areas in Canada and Australia where there is high number of ageing population but limited access to health services, the impact of COPD on older adults living with the illness during and after pandemic is very intense [19,20].

Impact of COPD on Older Adults and their Caregivers

Findings in the literature indicate that older adults living with COPD and their caregivers are severely affected by the condition. Patients reported high costs associated with managing the condition, frequent hospital visits, complex medication regimes, and recurrent breathlessness [10]. Furthermore, patients report alteration in normal life pattern, which they described as "being *imprisoned*" due to their physical limitation from lack of the ability to breathe [17]. Other effects of COPD on patients are: fear of death from suffocation, dependence on others for performance of daily activities, reduced self-esteem, and presence of depressive symptoms, loss of muscular mass, and stigmatization of patients [17]. Informal caregivers who are one of the key support people for older adults with COPD also express the effect of the condition on their lives.

Informal caregivers are mainly family members and friends who provide physical and emotional support to patients, assist patients to meet their daily needs, such as meal preparation, housekeeping, laundry, bills settlement, grooming, bathing, walking, monitoring, and motivating patients in their selfmanagement practices [10,21]. Many older adults' caregivers are spouses who are older adults themselves, thus intensifying the burden of the caregiving role, including physical, psychological, social, and economic impact on caregivers [10,17,21,22]. Lack of prediction on when exacerbation will occur and caregivers'

fear of their family member or friend dying from suffocation intensify the psychological impact of the illness on caregivers [10]. COVID-19 physical distancing intensified caregivers' and older adult's anxiety due to reduction of professional services as well as informal support [11]. The distress associated with living with COPD during lockdown calls for a proactive solution such as patient and family involvement in self-management to reduce the burden of living with the condition.

Strategies to Support Self-Management of Older Adults Living with COPD and their Caregivers after COVID-19 Pandemic

Older adult patients living with COPD and their caregivers have expressed a need for a COPD self-management toolkit covering areas such as exercise, diet, smoking cessation, treatment of exacerbation, resources in the community, and coping with negative emotions, such as anxiety and depression [10,12,21,23-26]. COVID-19 presented extreme challenges on the mental health, physical health, and function of older adults with COPD [11]. To meet the self-management needs of older adults and their caregivers after COVID-19, service providers must be familiar with factors such as personal and lifestyle characteristics, health status, resources, environment, and the health care system which impact self-management [8]. Personal and lifestyle characteristics, such as knowledge about the condition, management of symptoms, medication, commitment to health, and perceived self-efficacy facilitate self-management.8In the context of living with COPD, the debilitating effects of the conditions on individuals compromise their ability to engage in self-care [27]. It is this context of reduced strength and motivation to engage in self-management that needs to be recognized and potential solution identified. Furthermore, inadequate resources including lack of insurance or limited coverage decreases the older adults' access to health care, medication and participation in self-management [8]. Assistive equipment, including use of the Internet, may enhance older adults and their caregiver's self-management of chronic conditions, however some older adults may not have access to internet due to their location or affordability. Psychosocial factors, including support from families and friends motivate individuals to engage in self-management while depression negatively influence self-management [8]. Environmental factors, including the presence of smokers at home, inflexible work schedules, limited transportation, poor weather, limited access to specialists and educational materials, have been documented to negatively impact self- management [8,17,20].

Toolkits available on self-management of COPD aremostly designed to assist health professionals provide self-management support to patients and their caregiver's [13]. These existing self-management toolkits are general, not self-administered and do not address older adults and their caregiver's needs for selfmanagement during and after pandemic. There is dearth of toolkits designed for older adults living with COPD and their care givers self-management of the illness. It is evident after COVID-19 that innovative self-manage toolkits must be developed for older adults and their caregivers as well as existing ones reviewed for relevance, clarity, cultural appropriateness, and clinical accuracy [28]. The toolkits must be self-administered, informative by including website resources and information on what to expect with the condition. In addition, the material must be flexible, be at a grade five reading level with pictures and quotes; the toolkit must be portable, address cultural and language barriers [29]. The selfmanagement toolkit designed for older adults and their caregivers should have a section where older adults indicate their plan on what to be done when they are sickand a plan for visitors including in-home support workers such as having hand sanitizers for visitors to use before and after visiting [6]. Older adults and their caregivers should ensure there is enough supplies of medication and household items for two weeks; practice social distancing and not social isolation; maintain routine including physical activity [6,11]. The toolkit should address safety measures including older adults wearing mask when in public spaces, hand sanitizing and hand washing. In addition, individuals who are sick or showing symptoms of respiratory illness such as cough, fever, shortness of breath, and difficulty breathing should stay away from visiting older adults. Health professionals must intensify education on older adults taking the influenza vaccine based on what is known about the severe effect of influenza outbreak on older adults [3]. It is prudent that all older adults take an annual influenza vaccine [3] and a Coronavirus vaccine when it becomes available.

Furthermore, innovative strategies in providing health care to older adults such as telehealth and artificial intelligence must be supported [19]. Telehealth benefits in the society during pandemic are many not excluding increase access to health care, decrease loneliness, maintain independence and improve health outcome [14,30]. Many nations are investing in this model of health delivery. For example, in March 2020, the Australian government invested \$669m dollars to telehealth [30]. Older adults can employ different telehealth modalities including telephone, video calls, artificial intelligence, and Apps such as FaceTime, SKYPE to meet their daily needs. Older adults can employ these Apps to order daily delivery of meal at home, request for home services and assistance with management of medication [11,14]. Besides the application of Apps in meeting self-care needs, community members could also be trained as peer workers to help older adults especially in rural areas [19]. The evidence supporting telehealth as the new approach to provide healthcare, strengthen older adults and their caregivers' self-management of COPD is enormous. However, many older adults are at their early stage of learning how to use Apps and technology to maintain their self-care which have implications for health professionals [30].

Implications of Telehealth as a Self-Management Interventionto Older Adults Living with COPD and their Caregivers

Global experience during COVID-19 provides clear evidence that older adults with limitation in information literacy need to be trained to acquire the skill in order to engage in selfmanagement. Whilst Apps are inexpensive and accessible, many older adults are new to this mode of accessing health care and must be educated on its usage. Furthermore, caregivers must be trained on the technology and be close to assist the older person such as focusing their camera during consultation with a specialist.

Another implication in substituting in-person support with telehealth is the financial cost of the technology. Although many older adults in the 21st century possess cellphones, not many of them have access to internet connection either due to the cost of the service or their location. Telecommunication organizations must subsidize internet services for the older adult population and government insurance policies extended to cover telehealth. In addition, licensure bodies need to review restriction on

healthcare providers' license regarding jurisdictions they can practice telehealth in order for providers to deliver care outside the geographical boundaries where they hold a practice license.

Conclusion

The emergence of new infectious respiratory illness such as COVID-19 has created additional challenge to the older adult population living with COPD. The challenges and new norms created by COVID-19 call for innovative self-management toolkits to support older adults living with COPD and their caregivers. Older adults must have a well laid out plan on how to manage their daily lives. Telehealth is a promising strategy to support older adults and their caregivers' self-management. However, many older adults are new to the technology and would need education on its usage. Supporting this group's self-management of the condition will reduce the anxiety and stress they experience during an outbreak. In addition, self-management will increase older adults' confidence to come out of their homes and contribute to their community which will inadvertently improve their healthy ageing in place as well as quality of life. Future research is needed to explore knowledge and skills to be included in a self-management took it for older adults living with COPD and their caregivers after COVID-19.

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