Nursing Evidence:

Qualitative & Quantitative Studies COPD

Mikkel Darzhmeniak

Nursing Department, Alliance University

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Dr. Elenice Lima

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Abstract

The present paper will present a summary of a qualitative and quantitative study regarding Chronic Obstructive Pulmonary Disease. Critiquing and praising the studies. It is imperative to improve the diagnosis and patient care treatment. Therefore, qualitatives and quantitative studies are important research as a vehicle to understand the disease process and management of its causes and symptoms.

In a Globalized society where technology has improved our living conditions and has allowed us to treat and cure diseases. Nowadays, there are an increasing number of Chronic obstructive pulmonary disease (COPD) conditions. The rise of globalization, construction, pollution, and maladaptive behaviors such as smoking has increased the number of people diagnosed with COPD. In this literature review, I will explore qualitative study of COPD, how perception and technology barriers can affect or improve the patient condition. While section II explores a quantitative study of COPD, prevention methods and improving the diagnosis and treatment of the process of the disease can serve as the vehicle to improve patient outcome. The final section summarizes the material and areas for further research.

Section I: Qualitative Study COPD

Chronic obstructive pulmonary disease (COPD) is the fourth leading cause of death in the world. A large part of the COPD burden of illness is due to disease exacerbations that require hospital admissions, which can cost over $40,000 USD per hospitalization (Trout, D, et al 2020). Chronic obstructive pulmonary disease is a manageable, largely preventable respiratory disease. The poor consistency to treatment guidelines and self-management in Chronic Obstructive pulmonary disease (COPD) can lead to poor patient outcomes.

The research objectives of COPD digital health have yet to show significant evidence of improved outcomes for patients, with many user-adoption issues still present in the literature. To help better address the adoption needs of COPD patients, this paper explores their perceived barriers and facilitators to the adoption of DHT. However, digital health technology (DHT) can support patient self-management by improving the patient autonomy over the disease process (Slevin, et al., 2019). Recurrent hospitalizations for COPD patients may indicate poor long-term outcomes, such as end-stage lung disease, where hospital readmissions may not be in the best

interest of the patient. (Trout, D, et al 2020). Utilizing innovative measures such as technologies and follow up nursing care can reduce and potentially prevent hospitalization among COPD patients or patients with high risk of developing COPD.

The research sampling methods were chosen and patients (n=30) were recruited from two city hospitals. For the development of the study each of the participants completed a qualitative semi-structured interview and each of the data was analyzed using a Nvivo 12 software (Slevin, et al., 2019). The study result indicated a lack of perceived usefulness, digital literacy, illness perception, and social context such as facilitator of sub-themes ranging from existing digital self-efficacy, education, and community support (Slevin, et al., 2019). Therefore, these are factors that can limit the patient's health outcome when utilizing technology as one of the vehicles for patient self-management of his/her pulmonary condition. The findings represent a set of key considerations for researchers and clinicians to inform the design of patient-centered study protocols that aim to account for the needs and preferences of patients in the development of implementation and adoption strategies for DHT in COPD (Slevin, et al., 2019). The research's conclusive findings promise to improve self-management and improve the patient outcome (Slevin, et al., 2019). When factors such as education, perception of technology (DHT), and own patient perception regarding the COPD process are understood by the patient. The finding subject that studies of (DHT) in patients with COPD should be considered and further study.

Section II: Quantitative Study COPD

Chronic OBstructive Pulmonary Disease (COPD) is usually caused by prolonged exposure to dangerous chemicals and particles and by individual variables such as early experiences that affect lung development and heredity. Tobacco smoke exposure, indoor air pollution, occupational dust, gasses, and chemicals all contribute significantly to the chance of developing

COPD (Assaf, E., et al. 2022). Therefore, the research objective was to utilize prevention methods and to improve the diagnosis and treatment. The quantitative method of COPD patients were divided into mild ($n = 18$), moderate ($n = 20$), severe ($n = 24$), and extremely severe ($n = 22$) groups for performing high-resolution computed tomography (HRCT) and pulmonary function tests. Serum procalcitonin (PCT) and high-sensitivity C-reactive protein (hs-CRP) were detected, and the occurrence rate of acute exacerbation COPD was recorded during a 12-months follow-up period (Hua, Q., et al. 2022).

The study results shows that with an increase in the severity grade, the HRCT indexes, including emphysema index, 1st and 15th percentile of inspiratory attenuation distribution, the ratio of expiratory/inspiratory mean lung density and lung volume, and ratio of the wall thickness to the outer diameter of the lumen, as well as percentage of the wall area to the total cross-sectional area were increased (Hua, Q., et al. 2022).

These were correlated with the ratio of forced expiratory volume in 1 sec (FEV1) over forced vital capacity (FVC) (FEV1/FVC), the percentage of FEV1 the predicted value (FEV1%), and ratio of residual volume to total lung volume (RV/TLC). Body mass index, $MLD_{ex/in}$, FEV1%, FEV1/FVC, and PCT had a predictive value to AECOPD, with the combined AUC of 0.812. (Hua, Q., et al. 2022). The research conclusion was that HRCT imaging can effectively classify the phenotype of COPD. Combined with serum, PCT can predict the risk of acute exacerbation of COPD. However, the evaluation of the pulmonary function of patients can not completely replace traditional PFT, and HRCT may be a crucial supplementary tool for the overall evaluation of COPD. HRCT imaging can effectively classify the phenotype of COPD. Combined with serum, PCT can predict the risk of acute exacerbation of COPD (Hua, Q., et al. 2022).

All things to consider, Chronic Lung Disease is a public health concern that affects many people in the U.S. Risk factors such as tobacco used and environmental pollution, and generic factors can lead to COPD development and complications. Due to the poor management and treatment of the disease this led to many preventable rehospitalization. Causing a financial burden among those affected. Therefore, qualitatives and quantitative studies are important research as a vehicle to understand the disease process and management of its causes and symptoms. In a globalized society the use of technology has made it possible for people to self-manage COPD in conjunction with medical treatment and follow-up care. Quantitative studies allow scientists to measure biomarkers in order to develop effective methods of treatment and care.

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