

Evaluation of community pharmacist knowledge towards chronic obstructive pulmonary disease management

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Introduction

Chronic obstructive pulmonary disease (COPD) is a chronic respiratory disease which is characterized by obstruction of airway pathways in the lungs. Usually it is associated with patients' previous history of chronic bronchitis and/or emphysema. The clinical symptoms of COPD include sputum, chronic cough, wheezing, along with slow onset and long duration (Li et al., 2021). If not treated it can seriously impact patient quality of life and progressively lead to severe lung function deterioration. According to WHO, COPD is the third leading cause of death worldwide, causing 3.23 million deaths in 2019. COPD is included in the WHO Global Action Plan for the Prevention and Control of Noncommunicable Diseases (NCDs) and the United Nations 2030 Agenda for Sustainable Development. It includes protocols for the assessment, diagnosis and management of chronic respiratory diseases (asthma and COPD), and modules on healthy lifestyle counseling, including tobacco cessation and self-care (WHO, 2022). FIP in 2019 conducted analysis for role and activities of pharmacists in non-communicable diseases (NCDs) and based on the results encouraged pharmacists around the world to act upon NCDs, from prevention and screening activities, to patient referral when appropriate, and to pharmacist-led, patient-centered NCD management to improve outcomes and quality of life (FIP, 2019). According to Hu et al. (2020) in COPD management community pharmacists as most accessible health workers might play a key role "raising disease awareness, encouraging and supporting smoking cessation, educating about lifestyle options and disease

management, performing COPD screening, referring high-risk patients to doctors, supporting self-management and encouraging flu vaccination, reviewing patients' pharmacotherapy and monitoring patient's technique and adherence, and supporting management plan that minimize exacerbation"

The aim of this study was to evaluate the knowledge of community pharmacists in RN Macedonia about COPD (causes, treatments, management) in order to establish the baseline and identify gap knowledge with the rationale to provide them efficient training and education in order to improve/increase their competence for COPD patients' pharmaceutical care provision.

Materials and methods

A cross-sectional online based survey using Google forms was conducted in the period of 07.05-17.05.2022. The questionnaire was taken from Hu et al. (2020), translated into Macedonian language and slightly modified. There were 24 closed questions in total. The 12 questions were related to demographic factors and the same number, 12 to COPD knowledge. The questionnaire was shared among members of community pharmacists in RN Macedonia using Social networks (Facebook, Viber).

Obtained data were tabulated using Microsoft Excel® (Microsoft Corp. Redmond, WA, USA) and were computed and evaluated using statistical software STATGRAPHICS Centurion XVI evaluation (StatPoint technologies Inc., USA).

Results and discussion

The survey was answered by 148 respondents. Most of them (89.19%) were females. The age range was as follows: 20–30 (8.78%), 31–40 (33.78%), 41–50 (33.11%), 51–60 (22.97%) and 61 years or above (1.35%). Vast majority (89.19%) possessed university diploma for graduated pharmacists, and only 4.05% were pharmacist technicians. The rest were with postgraduate education. Only 0.68% had <1 year working practice. The others had 1–5 (8.78%), 6–10 (16.89%), 11–15 (24.32%), 16–20 (12.84%) and 21 or above (36.49%) years of practice in pharmaceutical sector. Most of them worked between 33–40 hours per week (58.78%) and 41–48 hours per week (31.76%). 48.65% worked in single (monomer) pharmacy, while 25% in small chain (2–4 community pharmacies) and 26.35% in big chain pharmacy (>5 community pharmacies). 96.62% of the community pharmacies dispensed COPD medications. Only, 22.97% of the respondents had some COPD related training during their formal education and 27.7% during their employment. Nearly 1/3 (34.46%) of the surveyed community pharmacists share an opinion that they can be involved in COPD management right away, while 57.43% are willing to be involved but only after additional training. The rest are not sure (6.76%) or refused (1.35%). The risk factors for COPD are smoking, pulmonary infections, air pollution and dust and hyper parasymphathetic regimen. More than 90% of the surveyed answered correctly, when it comes to smoking, pulmonary infections and air pollution and dust. However only 24.32% identify correctly hyper parasymphathetic regimen as risk factor, and unfortunately 81.76% identified wrongly allergic reactions as risk factor. Nearly 1/2 (48.65%) wrongly thought that COPD-induced lung airflow limitation is reversible and only 20.27% answered correctly that it is irreversible. The rest were unsure. 95.27% correctly identified chronic cough, sputum, dyspnea, chest tightness and so on as COPD associated symptoms. 18.24% answered correctly that “If a patient is suspected and has a FEV/FVC <90% from a pulmonary function test, the patient is diagnosed with COPD” is a false statement. On the other side 95.95% knew that the most commonly used international guideline for the treatment of COPD is GOLD. Inappropriately 82.43% thought that inhaled drugs are the first choice for maintenance treatment of chronic obstructive pulmonary disease, such as short-acting β_2 adrenoceptor agonists (SABAs). Also, unfortunately 45.95% share an opinion that inhaled glucocorticoids are not commonly used in the treatment of COPD due to strong adverse drug reactions. 76.35% were right when identify nausea, vomiting, diarrhea, food reflux, and headaches as common adverse reactions to theophylline drugs. 95.95% answered correctly that short-acting bronchodilators are commonly used during the acute

exacerbation of COPD. Similar results were given for the statement that “Short-term oral glucocorticoids can be used during exacerbations, with the aim of shortening the recovery time and reducing the severity of exacerbations and the risk of early relapses” where 93.24% answered correctly. Respondents correctly pointed out that assisting patients to quit smoking (93.24%), recommending patients to receive flu vaccine (87.16%) and encouraging patients to exercise more (78.37%) might help and improve condition in COPD patients. Regretfully, 44.59% thought that advising patients to reduce salt intake will also be beneficial in COPD. 96.62% correctly shared the opinion that pulmonary rehabilitation services for patients with COPD can improve shortness of breath and exercise tolerance.

Conclusion

The study pointed out that community pharmacists in RN Macedonia possess some gaps in their knowledge about COPD treatment and management. It is expected as nearly 2/3 did not have specific training for COPD either during their formal education or employment. There is a need for additional education and training of community pharmacists in RN Macedonia in order to improve/increase their competence for better pharmaceutical care provision in COPD patients.

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