



Non-Pharmacological Treatment in Asthma and COPD

BY

ผู้ช่วยศาสตราจารย์ ดร. บุณยทริกา ชาตรีวัฒนกุล, PhD, RN, MSN
คณะพยาบาลศาสตร์ มหาวิทยาลัยธรรมศาสตร์

Outline



<https://www.metropolisindia.com/blog/preventive-healthcare/everything-about-asthma/>

- **Non-Pharmacological Treatment in Asthma**
- **Non-Pharmacological Treatment in COPD**

Introduction

➤ General 2 principles of Asthma and COPD treatment

1. Pharmacological Treatment

2. Non-Pharmacological Treatment

➤ Non-Pharmacological Treatment

1. Interventions for improving symptom control and/or reducing future risk of exacerbations in Asthma

2. Methods of symptom management in COPD (During stable COPD state for helping to prevent AECOPD & During AECOPD state)

Non-Pharmacological Treatment in Asthma

Non-Pharmacological Treatment in Asthma

➤ 14 interventions for improving symptom control and/or reducing future risk of exacerbations (GINA, 2023)

Intervention

Advice/Recommendation

1. Cessation of smoking,
environmental tobacco exposure
(ETS) and vaping

- Encourage asthma patients who smoke or vape to quit.
- Provide access to counseling and smoking cessation programs (if available).
- Advise parents/caregivers of children not to smoke and not to allow smoking in rooms or cars that their children use.
- Encourage to avoid environment smoke exposure.

2. Physical activity

- Encourage patients to engage in regular physical activity
- Advice about prevention of exercise-induced bronchoconstriction with regular ICS
- Warm-up before exercise
- Regular physical activity improves cardiopulmonary fitness
- Swimming in young patients

Non-Pharmacological Treatment in Asthma (Continue)

Intervention

Advice/Recommendation

3. Avoidance of occupational or domestic exposures to allergens or irritants	<ul style="list-style-type: none">- Ask the adult patients about their work history and other exposures to irritant gases or particles, including at home- Identified and eliminate occupational sensitizers as soon as possible, and remove sensitized patients from any further exposure to these agents
4. Avoidance of medications that may make asthma worse	<ul style="list-style-type: none">- Stop NSAIDs if asthma worsens (การใช้ยา NSAIDs ทำให้เกิด asthma exacerbation ได้ โดยเฉพาะกลุ่ม non-selective COX inhibitors หากจำเป็นควรใช้กลุ่ม selective COXII inhibitors เช่น celecoxib, etoricoxib)

Non-Pharmacological Treatment in Asthma (Continue)

Intervention	Advice/Recommendation
5. Healthy diet	<ul style="list-style-type: none">- Encourage patients to consume a diet high in fruit and vegetables for its general health benefits
6. Avoidance of indoor allergens	<ul style="list-style-type: none">- Remediation of dampness (ความชื้น) or mold (เชื้อรา) in homes- For patients sensitizes (only in children), avoidance dust mite and/or pets
7. Weight reduction	<ul style="list-style-type: none">- For obese patients- Use a weight reduction program plus twice-weekly aerobic and strength exercise

Non-Pharmacological Treatment in Asthma (Continue)

Intervention

Advice/Recommendation

- | | |
|--------------------------------------|--|
| 8. Breathing exercises | <ul style="list-style-type: none">- A useful supplement to pharmacotherapy for symptoms and quality of life- Can not reduce exacerbation risk or have consistent effects on lung function |
| 9. Avoidance of indoor air pollution | <ul style="list-style-type: none">- Encourage to use non-polluting heating and cooking sources, and for sources of pollutants to be vented outdoors where possible |
| 10. Avoidance of outdoor allergens | <ul style="list-style-type: none">- For sensitized patients, when pollen and mold counts are highest, closing windows and doors, remaining indoors, and using air conditioning |

Non-Pharmacological Treatment in Asthma (Continue)

Intervention

Advice/Recommendation

11. Dealing with emotional stress - Arrange a mental health assessment for patients with symptom of anxiety or depression

12. Addressing social risk
(การจัดการความเสี่ยงทางสังคม) - In US studies, comprehensive social risk interventions were associated with reduced emergency department visits and hospitalizations for children

Non-Pharmacological Treatment in Asthma (Continue)

Intervention

Advice/Recommendation

13. Avoidance of outdoor air pollutants/weather conditions

- During unfavorable environment conditions (very cold weather or high air pollution), if feasible, to stay indoors in a climate-controlled environment
- Avoid strenuous outdoor physical activity
- Avoid polluted environments during viral infections

14. Avoidance of foods and food chemicals

- For patients with confirmed food allergy, refer for specialist advice if available
- It may reduce exacerbation

Non-Pharmacological Treatment in COPD

Non-Pharmacological Treatment in COPD

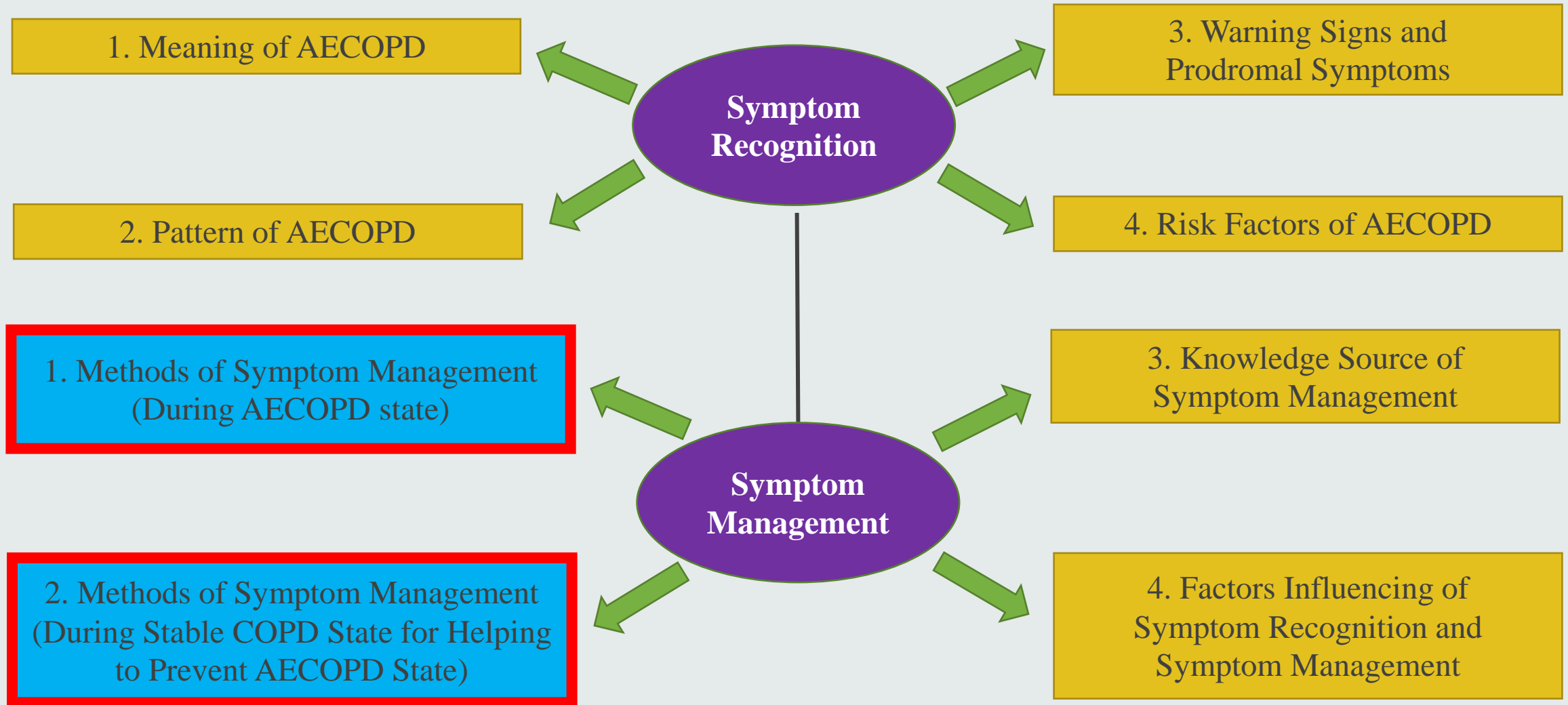


Figure 1. Constitutive patterns and themes of early symptom recognition and symptom management among exacerbation COPD patients (Chatreewatanakul, 2022)

Methods of Symptom Management

(During Stable COPD State for Helping to Prevent AECOPD State)

Methods of symptom management during stable COPD state were described in three categories:

- 1) Non-pharmacological therapy
- 2) Pharmacological therapy
- 3) Alternative medicines/
Therapeutic alternatives



<https://www.verywellhealth.com/copd-treatment-915040>

Methods of Symptom Management

(During Stable COPD State for Helping to Prevent AECOPD State)

➤ Three methods of Non-pharmacological therapy included:

(1) Exercise

(2) Taking something as directed to prevent flare-ups

(3) Music therapy



<https://copdnewstoday.com/news/tai-chi-improves-copd-patients-respiratory-function-study/>

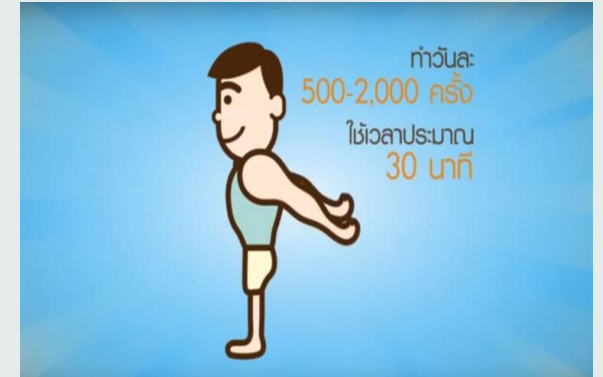


Methods of Symptom Management

(During Stable COPD State for Helping to Prevent AECOPD State)

➤ Types of exercise

- (1) **Swinging arms (แกว่งแขน):** was the type of exercise that most participants used
- (2) Walking (การเดิน)
- (3) Stretching limbs (ยืดเหยียดแขนขา)
- (4) Push-ups (วิดพื้น)
- (5) Hurling around (เหวี่ยงตัวไปมา)
- (6) Spreading arms and tilting (กางแขนและก้มเงย)
- (7) Lifting dumbbells (ยกดัมเบล)
- (8) Jogging (การเดิน-วิ่งเหยาะๆเพื่อออกกำลังกาย)
- (9) Chopping grass and shoveling tree soil (ตัดหญ้าและพรวนดินต้นไม้)



<https://www.thaihealth.or.th>



<https://www.fitnesseducation.edu.au/blog/personal-training/how-to-push-up-proper-bodyweight-push-up-technique/>

Methods of Symptom Management

(During Stable COPD State for Helping to Prevent AECOPD State)

➤ Taking something as directed to prevent flare-ups

- (1) **Avoiding risk factors of AECOPD: the most participants used this method**
- (2) Nasal washing with normal saline
- (3) Always drinking warm water
- (4) Eating lemon slices soaked in honey



<https://vegetarianmamma.com/honeyed-lemons/>

Methods of Symptom Management

(During Stable COPD State for Helping to Prevent AECOPD State)

➤ Music therapy (MT)

Title: “Combined effect of pulmonary rehabilitation and music therapy in patients with chronic obstructive pulmonary disease” (Okamoto et al., 2021).

- randomized crossover comparative study (การทดลองแบบสุ่มไขว้: การสุ่มเปรียบเทียบผู้ป่วยในกลุ่มเดียวกัน โดยผู้ป่วยกลุ่มเดิมได้รับการรักษามากกว่า 1 วิธี ในเวลาแตกต่างกัน)
- The patients were randomly divided into two groups that received either PR only or MT and PR (n=13 each).
- The PR program included conditioning, respiratory muscle training, and endurance training.
- The MT program included vocal, singing, and breathing exercises using a keyboard harmonica.
- The programs = 8 weeks.
- Result: Combining MT with PR improves parameters of pulmonary function. MT is a novel approach that, in combination with PR, may be used in COPD management.

Title: “Early symptom recognition and symptom management among exacerbation COPD patients: A qualitative study” (Chatreewatanakul et al., 2022).

- A qualitative study: Phenomenology approach
- 20 participants
- Result: The participant used MT to prevent flare-ups of AECOPD, as the participant stated: *“Some days, I slept and turned on the radio. The doctor advised me to turn on the radio, to listen the clear sound,.., for me to employ music therapy.”*

Alternative medicines/Therapeutic alternatives

➤ Three methods of Alternative medicines included:

(1) Herbs

- drinking boiled lingzhi juice (ดื่มน้ำเห็ดหลินจือต้มช่วยเสริมสร้างภูมิคุ้มกันของร่างกาย ลดการอักเสบ)
- drinking some Thai brand of herb
- drinking *Andrographis paniculata* boiled water for cold relief (ดื่มน้ำต้มฟ้าทะลายโจรเพื่อบรรเทาอาการหวัด)

(2) Practicing dharma (การปฏิบัติธรรม)

(3) Self-awareness meditation (raising hands to create a rhythm)



https://www.123rf.com/photo_99420073_ganoderma-lucidum-tea-with-ling-zhi-mushroom-.html



<https://www.dreamstime.com/andrographis-paniculata-leaves-soak-hot-water-white-cup-to-drink-to-resist-corona-virus-andrographis-paniculata-image>

Methods of Symptom Management

(During AECOPD State)

➤ **Nine methods included:**

(1) **Sitting: Most participants use sitting to manage exacerbation.**

(2) Taking something as directed for flare-ups: The methods were according to the signs and symptoms of previous experience of AECOPD.

Example: turn on a steam fan when weather was hot, pressing the Adam's apple, moving it, and coughing out sputum.

(3) Reducing activity: reducing activity or stopping activity.

Methods of Symptom Management

(During AECOPD State)

Nine methods included:

(4) Deep breathing and effective cough

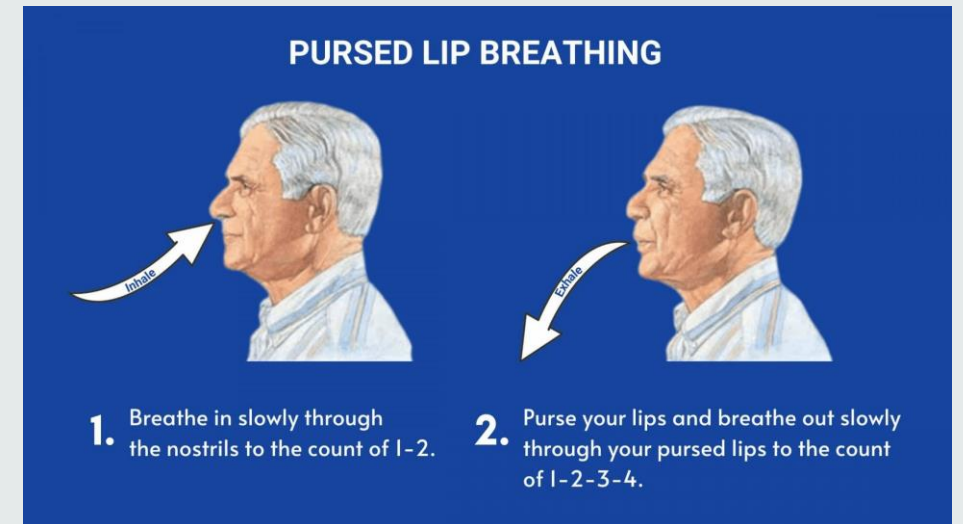
(5) Standing still (ยืนนิ่งๆ)

(6) Purse lip

(7) Sleeping

(8) Slow breathing

(9) Relaxing: Example; watching TV



<https://thehomerehabnetwork.com/breathing-exercises-for-copd/>

Conclusions

- เพื่อช่วยให้ผู้ป่วย Asthma สามารถป้องกัน/ลดอาการกำเริบได้ บุคลากรทางการแพทย์ ควรแนะนำ Non- pharmacological treatment ด้วยวิธีการต่างๆที่เหมาะสมกับผู้ป่วยแต่ละราย ควบคู่กับการใช้ Pharmacological treatment ที่ถูกต้องและเหมาะสม
- สำหรับผู้ป่วย COPD การป้องกัน/ลดอาการกำเริบ ด้วยการใช้ Non-pharmacological treatment อย่างเหมาะสม บุคลากรทางการแพทย์ควรดูแล ช่วยเหลือ และให้คำแนะนำเกี่ยวกับการตระหนักรู้ อาการกำเริบเบื้องต้นและการจัดการอาการกำเริบแก่ผู้ป่วยแต่ละรายโดยมีความแตกต่างกัน เพื่อให้ผู้ป่วย **ผ่านการเจ็บป่วยในระยะเวลาช่วงหนึ่งที่จะสามารถเรียนรู้ความรู้นี้ได้ด้วยตนเอง**



<https://trinityfinancial.ie/are-you-happy/>

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Early symptom recognition and symptom management among exacerbation COPD patients: A qualitative study

Buntarika Chatreewatanakul, PhD Candidate, RN^{a,*}, Pranom Othaganont, EdD, RN^{b,*}, Ronald L. Hickman, PhD, RN^{c,*}

^a Faculty of Nursing, Thammasat University, 99 Khlong 1, Khlong Luang, Pathum Thani 12121, Thailand
^b Department of Adult Nursing and the Aging, Faculty of Nursing, Thammasat University, 99 Khlong 1, Khlong Luang, Pathum Thani 12121, Thailand
^c Frances Payne Bolton School of Nursing, Case Western Reserve University, 9501 Euclid Ave., Cleveland, OH 44106, USA

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Heideggerian hermeneutic phenomenology approach

ABSTRACT

Background: An acute exacerbation of chronic obstructive pulmonary disease (AECOPD) is the most cause of death in COPD patient. It induces COPD patients often end in unexpected or unpredictable death.
Objectives: The purposes were to explore the lived experiences of symptom recognition and to explain the pattern of symptom management successfully among exacerbation COPD patients.
Design: A Heideggerian hermeneutic phenomenology approach.
Setting: The interviews took place in participants' home by using android or iOS (iPhone) phone.
Participants: Twenty participants were recruited until saturation by purposive sampling technique.
Methods: The semi-structured interview was used to capture detailed experiences verbatim. Data analysis based on a seven-stage hermeneutical process.
Results: Two constitutive patterns with relational themes were identified. First, symptom recognition, consisted of four themes: meaning of AECOPD, pattern of AECOPD, warning signs and prodromal symptoms, and risk factors of AECOPD. Second, symptom management, consisted of four themes: methods of symptom management (during AECOPD state), methods of symptom management (during stable COPD state for helping to prevent AECOPD state), knowledge source of symptom management, and factors influencing symptom recognition and symptom management.
Conclusions: The use of a Heideggerian hermeneutic phenomenology as a research methodology fulfilled the aims of this study. It will enable healthcare professionals to select and advise the strategies or methods that will be the most likely to appropriate within the limits set by individual capabilities for promoting the best quality of life in COPD patients.

1. Introduction

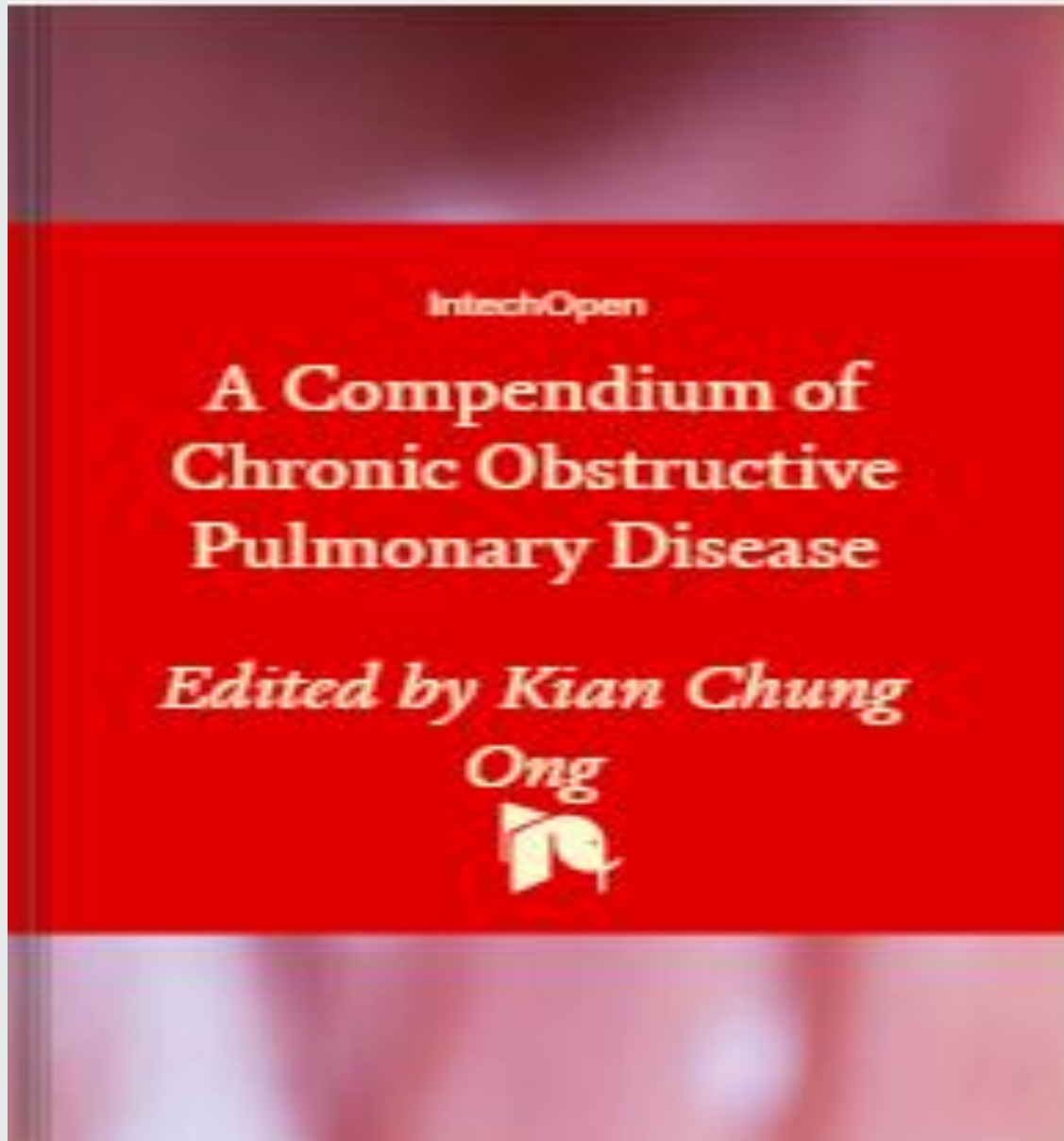
Chronic obstructive pulmonary disease (COPD) is currently a pulmonary problem in public health around the world. It is the fourth leading cause of death (Global Initiative for Chronic Obstructive Lung Disease (GOLD), 2017, 2018, 2019, 2020). This disease is a major cause of chronic morbidity and mortality for the aging society of the world (GOLD, 2017, 2018, 2019). In Thailand, COPD is the fourth most common cause of death and the number of deaths due to this disease is increasing every year. In 2012–2014, there were 1421, 1597, and 1619 COPD-related deaths (Bureau of Non Communicable Disease, 2015). The mortality of COPD patients increased from 7.7 deaths per one hundred thousand people in 2013 to 11.4 deaths per one hundred thousand people in 2017 (Bureau of Non Communicable Disease, 2018).

Most deaths of COPD patients were caused by worsening of symptoms, or/referred to acute exacerbation or exacerbation of COPD or AECOPD (Chen et al., 2017) or COPD flare-up (National Institutes of Health, 2019; WebMD, 2019). COPD patients usually have dyspnea every day in different level individually. Dyspnea is the most common symptom that triggers the occurrence of AECOPD. When COPD patients are triggered by an infection with bacteria or viruses or environmental pollutants or unknown factors, airway inflammation will be increased

* Corresponding authors.
E-mail addresses: buntarika0029@gmail.com, tsajung@hotmail.com (B. Chatreewatanakul), otpranom@gmail.com (P. Othaganont), rlh4@case.edu (R.L. Hickman).

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References



Chapter

Early Warning Signs and Prodromal Symptoms of AECOPD Patients

Buntarika Chatreewatanakul

Abstract

An acute exacerbation of chronic obstructive pulmonary disease (AECOPD) is a major problem leading to the most cause of death in chronic obstructive pulmonary disease (COPD) patients. Most cases of AECOPD occurred at home and outside the hospital. The COPD patients have the pattern of AECOPD according to their individual experiences. When the patients had AECOPD, also the warning signs and prodromal symptoms were happened differently. However, the characteristics of warning signs and prodromal symptoms could be described in three categories: 1) early signs and symptoms, 2) signs and symptoms that make the patients worse, and 3) time of occurrence. If the patients have been ill with COPD for a period of time until they can learn his/her early warning signs and prodromal symptoms of AECOPD by themselves or/and with their caregivers or/and with healthcare professionals, they will be able to quickly recognize their signs and symptoms when they occur and will be able to manage them as soon as according to their competency individually.

Keywords: early warning signs, prodromal symptoms, an acute exacerbation of chronic obstructive pulmonary disease (AECOPD), chronic obstructive pulmonary disease (COPD), characteristics

1. Introduction

Chronic obstructive pulmonary disease (COPD) is currently a pulmonary problem around the world. It is the third leading cause of death in 2020 [1] and now is one of the top three in 2022 [2]. Most deaths of COPD patients are a cause of worsening of symptoms which it was called acute exacerbation or exacerbation of COPD or AECOPD or COPD flare-up. Exacerbations were cause of respiratory failure that induced the COPD patients to receive life support. Most of AECOPD patients have to receive mechanical ventilator and difficult to wean. It effects to prolong intubation and have low quality of life until those patients die. Moreover, more than 50% of COPD treatment costs were related to exacerbations [3, 4] and they are cause of the slow decline of the disease trajectory that make COPD patients often end of life.

An acute exacerbation can be met in all levels of COPD severity, but it usually occurs in the late stage of it. In 2013, forced expiratory volume in one second (FEV₁) is not suggested for categorizing the severities of COPD. In 2016, the exacerbation

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