

Application of Florence Nightingale's Environmental Theory in Home Care Management of a COPD Patient: A Case-Based Review

Rukhsar Qadir¹, Laila Waseem Malik², Sonia Fayyaz³, Anna Rana⁴

¹ MSN Scholar, College of Nursing, The Islamia University of Bahawalpur. Email: rukhsarqadir7372@gmail.com

² MSN Scholar, College of Nursing, The Islamia University of Bahawalpur. Email: lailawaseemmalik@gmail.com

³ MSN Scholar, College of Nursing, The Islamia University of Bahawalpur. Email: soniafayyaz44@gmail.com

⁴ Assistant Professor, College of Nursing, The Islamia University of Bahawalpur Email: annarana@iub.edu.pk

Abstract

Chronic obstructive pulmonary disease (COPD) is a significant respiratory disease which can significantly impact quality of life and may contribute to further hospital admissions and higher health care expenditure. Treatment for COPD is done not only with medicines, but also by focusing on a patient's home and daily routines. Florence Nightingale's Environmental Theory is useful in looking at these factors as it focuses on the patient's environment as the focal point of nursing care and recovery. This case-based review will discuss how the theory relates to the home-care management of a 50-year-old man who has suffered an acute COPD exacerbation. The home assessment revealed sub-optimal conditions which could impact the child's health, such as inadequate ventilation, exposure to smoke and dust, poor hygiene, excess noise, and poor nutrition. Nursing interventions centered on the improvement of the home environment, enhancing the hygiene conditions, giving education and engaging family in care. The case is an example of the way that Nightingale's principles of the environment can be applied today in the management of chronic disease, and in community nursing care.

Keywords: Florence Nightingale, Environmental Theory, COPD, Home Care, Nursing Intervention, Patient Recovery.

Introduction

Nursing theories offer a way to conceptualize patient needs and to direct nursing care toward patients' needs. The Environmental Theory, which was proposed by Florence Nightingale in 1860, identified fresh air, cleanliness, light, nutrition and quietness as key elements affecting health (1). One of the main principles of the theory is that the nurse should establish a favourable environment for the body's own healing process and not just the disease itself. This environmental approach is still relevant to the care of chronic disease. Tobacco smoking, indoor air pollution, poor ventilation and unhealthy housing conditions may exacerbate the challenges faced by people with respiratory diseases like COPD (2). Other important aspects of COPD management include adherence to medications, lifestyle modification, and pulmonary rehabilitation, as well as a suitable home environment (3). This case-based review thus reviews the application of the principles of Nightingale beyond the hospital setting to help support patients' recovery and quality of life after discharge with a COPD diagnosis.

Overview of the Florence Nightingale Theory

Florence Nightingale is known as a pioneer of modern nursing who created an environmental theory of nursing care that connected the patient's environment to health and healing. Her theory was not so much to treat a disease but to change the environment in which it occurs so the patient's natural healing mechanisms can be aided. Some of these are fresh air and ventilation, proper warmth, natural light, cleanliness, quietness, safe water and drainage, clean beds and bedding, personal hygiene, adequate nutrition, and careful observation of the patient (1,19). In this sense, lack of ventilation, noise, crowding, poor nutrition and unclean environment may hinder recovery, and pose a health risk. Practical activities in the nursing care therefore involve maintaining cleanliness, optimizing air flow, lighting, noise, food and fluid intake, and monitoring for any changes in patient's condition. The concept dates back to the nineteenth century, but the focus on hygiene, the safety of the environment, and the prevention of infection is still relevant in both hospital and home and community contexts (2).



Figure 1. 13 canons of Florence Nightingale's environmental theory.

Case Presentation

The patient was a 50-year-old man who presented to the hospital with acute dyspnea, cough that produced copious yellow sputum, wheezing, chest tightness and oxygen saturation of 84% on room air. He was treated for acute exacerbation of COPD with oxygen therapy, bronchodilators, corticosteroid, antibiotics, chest physiotherapy and respiratory rehabilitation. The clinical condition improved after 6 days of treatment, so he was discharged. He was discharged with prescribed medications and inhalers, an exercise program, dietary instructions, and a plan to return to the respiratory clinic.

Five days after discharge, a home visit was done to check on the patient's progress. He was alert and oriented, but became short of breath on walking a few steps. Productive cough was mild with small amount of white sputum was present. His oxygen saturation was 92% while he was

on the required home oxygen. His pulse was 108 per minute, respiratory rate was 26 per minute, blood pressure was 140/84 mmHg and temperature was 102°F.

During the home assessment it was found that there were some environmental and self-care concerns that may hamper the recovery process. There was a lack of ventilation and the windows were seldom opened during the day. There was a son of the patient who would smoke in the house occasionally. The thick curtains and carpets in the bedroom were filled with dust, and a wood-burning stove in the kitchen caused smoke to fill the home. There was not much natural lighting in the patient's room and furniture restricted patient movement. Television noise was still loud during the day and was noticed to disrupt sleep at night. Bed linen was changed seldom. Unclean clothing was worn and personal hygiene was inadequate; patient's hair was unkempt, and general appearance was unkempt. He was also having poor appetite and water intake, and he was eating high fat and high salt food. His techniques for using the inhalers were wrong and his wife did not know some of the warning signs that she should watch for that may signal that COPD is getting worse. The general assessment suggested environmental modification, education on better hygiene, better self-care education and better family support.

Discussion and Analysis

Case studies suggest that there are a number of environmental and self-care factors that could have negatively impacted the patient's recovery. These were related to poor ventilation, hygiene, exposure to indoor smoke, inappropriate living conditions, and home care knowledge. According to Nightingale's Environmental Theory, the recovery process can be helped by setting up a clean, safe and supportive environment to decrease preventable complications (1,2).

Personal Cleanliness

Safe home care and recovery includes personal hygiene. In this instance, low level of hygiene and poor care practices were potentially modifiable risk factors. Cleanliness of the body, skin, clothing and hands was a focus for Nightingale as a key factor in keeping people in good health. Proper dressing of wounds, hand hygiene, clean clothes and baths can help keep the patient comfortable and prevent unnecessary complications (1,6). Washing hands before and after coming in contact with patient, wounds or medical equipment is particularly significant. Good hygiene habits are therefore an important component of the prevention of infection and supportive nursing care, both for the nurse and for the patient (6).

Ensure the Room and Environment Is Kept Clean

The patient's room and the household environment are also important to recovery. In this instance, lack of dusting, cleaning and hygiene can impact on the quality of the home care setting. The Nightingale theory focuses on having clean surfaces, furniture, bedding and surrounding areas for a better recovery (1,2). Some of the most useful nursing considerations regarding routine care to help ensure a safer environment include: appropriate disinfection (as needed), safe disposal of wastes, and attention to household hygiene (1,6).

Ventilation and Fresh Air

The provision of fresh air and ventilation is a key component of Nightingale's environmental approach. Closed windows and smoke from a wood-burning stove in this instance provided the conditions that may affect patient comfort and indoor air quality. Therefore, improving air circulation and minimizing indoor sources of pollution make it better for the environment. Poor air quality is also recognized as a health problem by the World Health Organization (4). Because of the importance of ventilation, and avoidance of indoor pollutants, the subject of supportive home care is especially applicable to the patient with COPD.

Bed and Bedding

Bed and bedding provide comfort and cleanliness. Worn down mattresses will not be comfortable and can cause skin issues or increase the risk of infection. Nightingale linked the comfort, cleanliness and dryness of beds with recovery from illness and comfort from pain (1). Therefore, changing the linens regularly and proper maintenance of bedding should be taken care in a regular basis in home nursing care.

Acknowledging That the Sick Are Present

Regular monitoring is required for early identification of change in patient. In this instance, checking general health status, temperature, pain, signs of infection, respiratory symptoms and other changes would assist in the identification of deterioration and indicate the need for further evaluation. Nightingale emphasized the importance of careful observation of patients, and she believed it was a primary duty of a nurse, and that this observation would aid in making timely decisions and providing appropriate care (1,18).

Nutrition and Taking Food

The right kind of nutrition provides for the body's normal operation, its immune response, tissue repair and recovery. These processes can be affected by inadequate diet intake and thereby nutritional assessment is an important consideration in care planning (7). The poor appetite along with the high fat, high salt diet found in this patient's home assessment requires dietary education and use of appropriate nutrition support as a part of the overall plan for recovery.

Psychological and Social Environment

The psychological and social context may affect the patient's ability to engage in treatment and adherence to recommended interventions. Self-management can be challenging due to anxiety, lack of support and poor communication. The recovery process can be fostered in a more supportive environment through emotional support, clear communication, patient education, and family involvement (1,8,9). It was really important that the patient's wife was involved in this, as she was required to provide daily care and to be able to recognise when the COPD was worsening. The use of Nightingale's theory in this case is summarised in the accompanying figure.

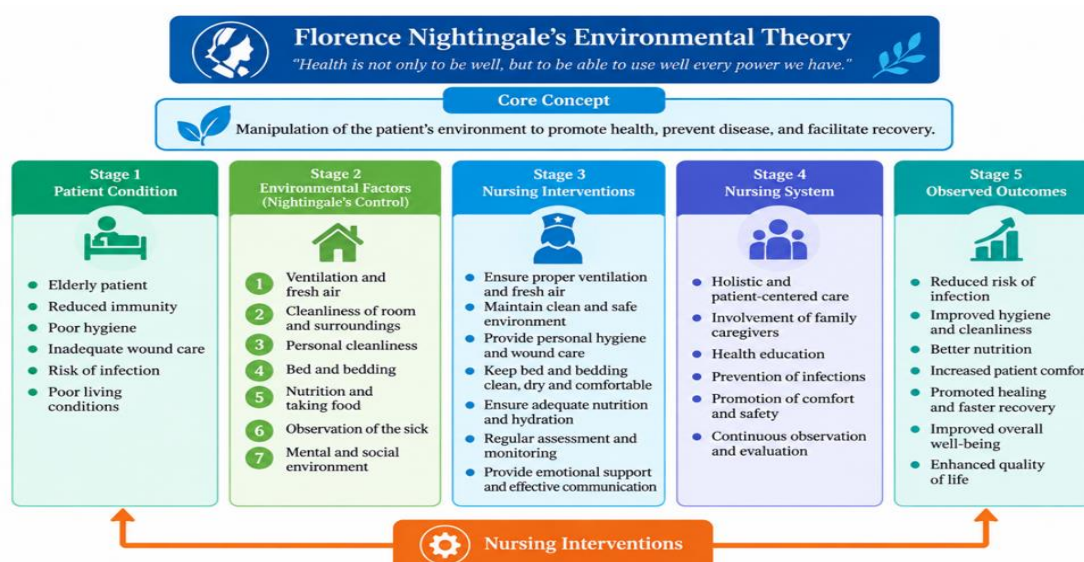


Figure 2. Clinical application of Florence Nightingale's environmental theory in the case.

Conclusion

The theory of Florence Nightingale (Environmental) is still considered a basic nursing theory. The COPD case is used to show how the environment, ventilation, cleanliness, hygiene, nutrition and support in the family can affect recovery. Nurses have the ability to identify risk, improve living conditions and provide holistic patient-centred care by applying Nightingale's principles.

Recommendation

It is recommended that education of patients and caregivers should be practical, covering how to care for their personal hygiene, wound care (if applicable), infection prevention and clean home environment. Nurses should evaluate the ventilation, bedding, nutrition, hygiene and general condition of the patient when planning for home care, consistent with Nightingale's environmental principles. Discharge education should also enable the patient and family to understand how to follow the treatment plan, maintain good hygiene, attend the follow-up appointments and identify when they are experiencing symptoms that need medical intervention. These can help to facilitate recovery, avoid unnecessary complications and make the patient more comfortable (1,6). The continued application of the environment in nursing practice can enhance home management of individuals with a chronic respiratory illness and illustrate the ongoing relevance of nursing theory in practice.

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