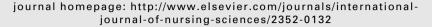


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## **Original Article**

# Transitional care for patients with chronic obstructive pulmonary disease

Jia-Mei Li, Shou-Zhen Cheng\*, Wei Cai, Zhao-Hui Zhang, Qiong-Hui Liu, Bi-Zhen Xie, Mu-Dan Wang

The First Affiliated Hospital, Sun Yet-Sen University, Guangzhou, China

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#### ABSTRACT

Objectives: To observe the effects of transitional care on the quality of life of chronic obstructive pulmonary disease (COPD) patients.

Methods: A total of 114 COPD patients were recruited from the First Affiliated Hospital, Sun Yat-sen University, Guangzhou, China and divided equally into an intervention group and control group. Following discharge, patients from the intervention group recieved three-months intervention in addition to regular nursing care, while control group patients received regular nursing care only. Patients' quality of life was measured using the St. George's respiratory questionnaire (SGRQ), the 12-item General Health Questionnaire (GHQ-12) and body mass index (BMI).

Results: The symptoms section score, the activity section score, the impacts section score, the total score and the rate of mental disorders were significantly changed after the intervention while there was no statistical difference in BMI between groups.

Conclusions: Transitional care can improve health-related quality of life in COPD patients who have recently suffered an exacerbation.

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#### 1. Introduction

Chronic obstructive pulmonary disease (COPD) is a major public health problem characterized by chronic airflow

limitation and a range of pathological changes in the lung, some significant extra-pulmonary effects, and important comorbidities which may contribute to the severity of the disease in individual patients. Thus, both the pulmonary aspect of the disease and significant comorbidities must be

E-mail address: szcheng05@126.com (S.-Z. Cheng). Peer review under responsibility of Chinese Nursing Association



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<sup>\*</sup> Corresponding author.

considered when determining appropriate treatment [1]. COPD patients' quality of life is negatively affected by disease exacerbations, progressive loss of lung function, and unsatisfactory therapeutics. Patients often have low self-esteem, self-blame, anxiety, depression and other psychological symptoms.

According to the American Geriatrics Society, translational care is defined by a continuity of care through a series of actions designed to ensure that patients in different health care settings (e.g. from hospital to home) and the same health care settings (e.g. different hospital departments) receive different levels of collaboration and continuity of care [2]. This care includes family care following hospital discharge and hospital discharge planning [3].

Since the 1990s, major Western countries and Hong Kong began to implement translational care for discharged patients with positive results. Specific to this implementation was early follow-up, development of a detailed evaluation form, a strategic plan to treat high-risk patients including pre-term children, the elderly, and organ transplant recipients [4].

#### 2. Material and methods

#### 2.1. Study population

The study recruited 114 patients who were admitted to the First Affiliated Hospital, Sun Yat-sen University, Guangzhou, China Department of Respiratory Medicine due to acute exacerbation of COPD between September 2008 to March 2011. Inclusion criteria included a diagnosis of COPD characterized by inhaled bronchodilator  $FEV_1/FVC < 70\%$ , FEV 1% predicted percentage < 80%; ability to care for themselves during stable periods; and willingness to sign an informed consent form. Patients were excluded if they had a co-existent medical problem (e.g, bronchial asthma, suspected malignancy, cardiac failure); cognitive impairment or lack of social support; or limb movement disorder.

The 114 COPD patients were divided into an intervention group (57 cases) and control group (57 cases) randomly. The intervention group received follow-up intervention for three months in addition to regular nursing care while the control group received regular nursing care only.

#### 2.2. Data collection and management

#### 2.2.1. Establishing transitional care research team

A transitional care research team was established in 2007 including one full-time staff member in charge of discharged patients' transitional care, three researchers, three nurses working in department of Respiratory Medicine, and 12 community nurses. All members of the team completed a "chronic obstructive pulmonary disease transitional care training course" and successfully passed the examination. In addition, in 2008 the hospital established an outpatient on specialist care of patients with COPD, regular visited by a nurse specialist who is responsible for the patient follow-up after discharge. Researchers and ward nurses are mainly responsible for the assessment and guidance of patients with COPD during hospitalization. The members of transitional care

research team are responsible for patient follow-up after discharge.

#### 2.2.2. Method of transitional care

In this study, transitional care was divided into two phases. The first stage consisted of a comprehensive patient assessment by researchers and ward nurses a week prior to hospital discharge; completing general personal information, St. George's respiratory questionairre (SGRQ), the 12-item general health questionnaire (GHQ-12) and body mass index (BMI), and intervention group treated with targeted health education and guidance; and establishment of a file for discharge planning according to specific needs of patients. The second stage consisted of research team members providing patients with a three-month follow-up after discharge, including phone calls at 3, 5, 7, and 9 weeks after discharge, and home visits at 72 hours and 3 months post-discharge. For telephone follow-ups, we established and used the "telephone follow-up records for patients with COPD" form. This takes into account symptoms and signs of patients, complications or new symptoms, psychosocial, family rehabilitation, health behaviors and environment. By asking and communicating with the patients, we found patient existing health problems and recorded, then provided targeted interventions. For home visits, environmental risk factors of the patients were assessed, along with on-site assessment and health guidance to improve patient self-care skills and enhance patient compliance of discharge planning. Patient information, including the SGRQ, GHQ-12 and BMI, were also collected during the second home visit.

# 2.3. Measures of transitional care — home-based pulmonary rehabilitation

The main goal of pulmonary rehabilitation is through daily activities to reduce symptoms, improve quality, improve and enhance the physical fitness and emotion. The care package provided to patients at home included respiratory muscle training, rehabilitation exercise, home oxygen therapy, nutrition support and psychological support. Respiratory muscle training included: pursed lip breathing where patients preferred sitting, standing or lying, breathing with nasal, shrinking lips like fish head shape, and breathing slowly through the pursed lips with an inspiratory and expiratory ratio of 1:2, exercise 5 minutes, 3 times per day; abdominal breathing where patients were comfortable position, relax, relax the abdomen when inhaling, the abdomen bulge, exhale abdominal contraction, sunken abdomen, exhale push hands as needed ribs and abdomen can be used to promote abdominal contraction, initial stage of abdominal breathing exercises twice a day, every 10-15 minutes. Pursed lip breathing can be applied together with abdominal breathing. Rehabilitation exercise consisted of exercises such as walking, boarding a ladder, and upper limbs exercise, twice per day for 10–15 minutes. Home oxygen therapy consisted of long-term oxygen therapy (LTOT) to improve survival in patients with COPD, improve patient hemodynamics, hematologic characteristics, exercise capacity, lung physiology and mental state [5]. Patients were expected to adhere to oxygen for at least 15 hours per day and when necessary at a rate of 1-2 L/min. Nutrition support was offered to address COPD as a wasting

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