The Effect of Evidence-Based Nursing on Pulmonary Function of Patients with Pulmonary Infectious Diseases

Qian Zhang, Xipin Zhang, Shiming Zhang, Weining Li

Shaanxi Provincial People's Hospital, Xi'an 710000, China.

Abstract: Objective To explore the effect of evidence-based nursing on pulmonary function of patients with pulmonary infectious diseases. Methods Eighty two patients with infectious diseases of the lung diagnosed and treated in a hospital from March 2020 to September 2022 were selected as the research objects. They were randomly divided into the observation group (n=41) and the control group (n=41) by using the random number table. The control group patients were given routine care, while the observation group received evidence-based care on the basis of the control group care. Both groups of patients continued to receive care until discharge. Compare the improvement of symptoms and lung function between two groups of patients before and after nursing care. After nursing care, the cough frequency, sputum production, and difficulty in breathing scores of the two groups of patients were lower than before nursing care, and the observation group was lower than the control group, with statistically significant differences (P<0.05); After nursing, the levels of FVC and FEV1/FVC in both groups of patients were higher than before nursing, and the observation group was higher than the control group, with statistical significance (P<0.05). Conclusion Evidence based nursing can effectively alleviate the clinical symptoms of patients with pulmonary infectious diseases, improve lung function, and promote the rehabilitation of patients.

Keywords: Evidence-Based Nursing; Pulmonary Infectious Diseases; Pulmonary Function

Introduction

Pulmonary infection is a highly prevalent disease characterized by high secretion of airway mucus, which can cause airway obstruction and airflow restriction, leading to imbalance of blood oxygen homeostasis and exacerbating pulmonary infection. It is very important to implement high-quality and efficient care for patients with pulmonary infection. This study focuses on 82 patients with COPD accompanied by airway mucus hypersecretion, and analyzes the effectiveness of evidence-based nursing. The relevant situation is now reported as follows.

1. Materials and Methods

1.1 General Information

82 patients with infectious diseases of the lung diagnosed and treated in a hospital from March 2020 to September 2022 were selected as the research objects. They were divided into two groups by random number table method, with 41 cases in each group. There were 21 male and 20 female patients in the control group, respectively; The age range is 24-65 years, with an average of (41.78 ± 6.42) years old. There were 19 male and 22 female patients in the observation group, respectively; The age ranges from 27 to 64 years, with an average of (41.25 ± 5.83) years old. There was no statistically significant difference in general information between the two groups of patients (P>0.05), and there was comparability between the groups.

1.2 Method

The control group received routine nursing interventions, mainly including following medical advice, taking medication on time, keeping the ward clean and tidy, regularly inspecting the room, and monitoring the patient's vital signs.

The observation group carried out evidence-based nursing intervention on the basis of the control group. The details are as follows: (1) Establish evidence-based problems: ① The patients lack basic knowledge of infectious diseases of the lung; ② Due to negative emotions such as inferiority and anxiety in patients with long-term illness, nursing compliance is low; ③ The patient's daily diet is not reasonable. (2) Evidence based support: Search for evidence to address the issues raised above and find the best nursing evidence. (3) Evidence based obser-

vation: The head nurse and one cardiorespiratory expert evaluate the effectiveness and feasibility of the above nursing evidence. (4) Develop a nursing plan: Combine patient needs, clinical experience, and evidence-based evidence to transform them into clinical evidence, and develop a nursing plan that meets the patient's needs. The contents of nursing implementation are as follows: ① health knowledge education, introducing the causes and treatment methods of pulmonary infectious diseases to patients, comprehensively answering questions, emphasizing the precautions in life, and reducing the probability of disease recurrence; ② Psychological counseling: For patients with anxiety, inferiority, and other negative emotions caused by illness and treatment, timely and appropriate psychological counseling should be given to eliminate their negative emotions; ③ Dietary guidance helps patients correct unhealthy dietary habits and adjust their dietary structure, focusing on light and easily digestible foods, eating fewer and more meals, increasing their intake of water, vitamins, and dietary fiber, and avoiding spicy and stimulating foods; Suggest patients to consume foods that have the functions of strengthening the spleen, benefiting the lungs, relieving cough, and resolving phlegm appropriately; ④ Complication care, closely monitoring the patient's vital signs to prevent serious complications such as heart failure or arrhythmia. If serious complications occur, they should be promptly reported to the responsible physician for treatment, and nursing interventions should be taken Cardiopulmonary function training: After the patient's condition stabilizes, they will undergo 10 minutes of breathing exercise every day. If the patient's physical strength allows, they can engage in appropriate cardiopulmonary function exercises.

1.3 Observation indicators

Compare the symptom improvement of two groups of patients before and after nursing care: evaluate the cough frequency, sputum production, and degree of difficulty breathing of the two groups of patients. The symptoms are divided into 0 points (asymptomatic), 2 points (mild), 4 points (moderate), and 6 points (severe). The higher the score, the more severe the patient's symptoms are; Compare the lung function of two groups of patients before and after nursing care: lung function indicators include forced vital capacity (FVC) and forced expiratory volume (FEV1)/FVC level in the first second.

1.4 Statistical methods

The data was statistically analyzed using SPSS 26.0, with count data represented by (%) using x2 for statistical testing, measurement data represented by (mean ± standard deviation) using t-values for statistical testing, and P<0.05 indicating statistical significance of the study.

2. Results

2.1 Comparison of symptom improvement between two groups of patients before and after nursing care

After nursing, the cough frequency, sputum production, and difficulty in breathing scores of the two groups of patients were lower than before nursing, and the observation group was lower than the control group, with statistically significant differences (P<0.05), as shown in Table 1.

Comparison of symptom improvement between two groups of patients before and after nursing (points)

Group cough frequency, sputum production, difficulty in breathing

Pre care, post care, pre care, post care, pre care, post care

Control group (n=41) 4.19 ± 0.48 2.74 ± 0.32 * 4.35 ± 0.45 3.05 ± 0.39 * 4.06 ± 0.41 2.80 ± 0.36*

Observation group (n=41) 4.36 ± 0.54 1.56 ± 0.21 # 4.51 ± 0.50 1.71 ± 0.27 # 3.91 ± 0.37 1.64 ± 0.24#

T 1.507 19.740 1.523 18.089 1.739 6.512

P 0.136<0.001 0.132<0.001 0.086<0.001

Note: * represents the comparison between the control group and pre care, P<0.05# Compared with the pre care group, the representative observation group showed P<0.05.

2.2 Comparison of lung function between two groups of patients before and after nursing care

After nursing, the levels of FVC and FEV1/FVC in both groups of patients were higher than before nursing, and the observation group was higher than the control group, with statistical significance (P<0.05), as follows.

Group FVC (L) FEV1/FVC (%)

Pre care Post care Pre care Post care

Control group (n=41) 2.15 ± 0.30 2.42 ± 0.33 * 49.35 ± 2.95 64.15 ± 3.59*

Observation group (n=41) 2.04 ± 0.26 2.98 ± 0.37 # 49.86 ± 3.12 68.41 ± 3.75#

T 1.774 7.233 0.604 5.254

P 0.080<0.001 0.548<0.001

Note: * represents the comparison between the control group and pre care, P<0.05# Compared with the pre care group, the representative observation group showed P<0.05.

3. Discussion

From the results of this study, it can be seen that the cough frequency, sputum production, and difficulty in breathing scores of the observation group patients after nursing care are lower than those of the control group, with statistically significant differences (P<0.05); After nursing, the FVC and FEV1/FVC of the observation group patients were higher than those of the control group, with a statistically significant difference (P<0.05). This fully indicates that the application of inquiry nursing intervention measures can significantly improve the clinical symptoms and lung function indicators of patients, promote disease prognosis, and promote patient recovery.

To sum up, in combination with the physical conditions and disease conditions of patients with pulmonary infectious diseases, in the process of giving positive symptomatic treatment, joint implementation of inquiry nursing intervention measures can significantly improve their symptoms and signs and promote the recovery of patients.

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About author:

Qian Zhang(1988-), female, nurse in charge, master. Research interests: adult and pediatric respiratory disease nursing, geriatric nursing, critically ill patient nursing.