

Study on the Effect of High-quality Nursing Combined with Breathing Exercises on Patients with Chronic Obstructive Pulmonary Disease

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ABSTRACT

Objective: To study the effect of high-quality nursing combined with breathing exercises on patients with COPD. **Methods:** Using the random number table method of medical experiments, 60 patients with COPD received in our hospital from March 2020 to March 2021 were used as research samples. According to the differences in treatment measures, they were equally divided into control group and intervention group. Symptomatic support treatment and nursing routine, high-quality nursing combined with respiratory function exercise treatment and nursing were given respectively, and the application effects of the two groups were compared and analyzed. **Results:** The controllable rate of disease between the intervention group and the control group was 93.33% (28/30) and 66.67% (20/30) respectively, which was statistically significant ($P < 0.05$). The comparison between the intervention group and the control group on the pulmonary function indexes of VT, TPTEF/Te, VEF/Te, Ti/Te was statistically significant ($P < 0.05$). The results of the intervention group on exercise pulse and 6-minute walking distance were significantly higher than those of the control group ($P < 0.05$). **Conclusions:** The combination of high-quality nursing care and breathing exercises has outstanding disease controllable rate in patients with COPD, especially in improving the lung function of the patients and the level of treatment and care. It can be used as a feasible measure in the subsequent clinical treatment and nursing practice of patients. It is worthy of clinical promotion and implementation.

1. Introduction

Chronic obstructive pulmonary disease (COPD) is a common disease in respiratory medicine, which mostly

occurs in the elderly. The clinical manifestations of patients include chronic cough, sputum expectoration, and obvious shortness of breath during activities, which can cause great harm to the quality of life of patients [1].

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Conventional treatment is mainly symptomatic treatment, but the progressive progress of the disease can cause further damage to the patient's lung function indicators, and the application of respiratory function exercises in conjunction with high-quality nursing methods in the patient's practice will play a role in the patient's disease treatment practice A prominent effect ^[2]. This article is to explore the impact of high-quality nursing combined with respiratory exercises on lung function and exercise endurance of patients with COPD. An experimental study was conducted on 60 patients with COPD from March 2020 to March 2021 in the Department of Respiratory Medicine of our hospital. The relevant information is summarized. as follows:

2. Materials and Methods

2.1 General Information

Using the random number table of medical experiments, 60 patients with chronic obstructive pulmonary disease received in our hospital from March 2020 to March 2021 were used as research samples. All patients included in the research category are in compliance with the *Chronic Obstructive Pulmonary Disease Diagnosis and Treatment Standards (2011 edition)* diagnostic criteria ^[3]. According to the difference of treatment measures, they were equally divided into control group and intervention group. And the comparison of the control group and the intervention group's numerical comparisons on the gender ratio, age, and average age were 12 cases/18 cases: 13 cases/17 cases, (60-72) years: (61-71) years, (65.25±0.35)) Years old: (65.35±0.25) years old. The difference in clinical data between the two groups is relatively small, and the comparability of this study is relatively strong.

2.2 Method

Symptomatic support treatment and nursing routine, high-quality nursing combined with respiratory function exercise treatment and nursing were given respectively, and the application effects of the two groups were compared and analyzed.

2.2.1 Control Group

Stable lung treatment, including low-flow oxygen inhalation therapy, that is, anti-inflammatory, anti-asthmatic, phlegm, relieving cough, symptomatic and supportive treatment. Correct life-threatening hypoxemia, make blood oxygen saturation >90%, and require oxygen therapy, including long-term oxygen therapy. Take a simple ventilator to assist oxygen therapy during

night sleep. Use respiratory stimulants to make the pH value>7.2; give anti-inflammatory, anti-asthmatic, anti-cough, phlegm and treatment of the primary disease. Prevent and treat complications, such as anti-heart failure, improving respiratory failure, etc.

2.2.2 Intervention Group

On the basis of the control group, high-quality nursing combined with respiratory function exercise treatment and nursing; 1) Instruct patients to participate in exercises appropriately daily to enhance body resistance, pay attention to weather changes, add clothing appropriately, and beware of colds. Once the condition worsens, seek medical treatment in time. Take a walk, jogging, Taijiquan, Qigong and other exercises in a planned way every day. It is advisable not to feel fatigued. It can be regarded as proper COPD breathing exercises, which can avoid breathing difficulties caused by overwork and relieve them of strengthening breathing exercises. 2) Inhale through your nose and exhale through your mouth. When you exhale, your lips will shrink and look like a fish mouth. Hold your abdomen with your hand to exhale. Use a deep and slow breathing rate of eight to ten times per minute, daily do several exercises for 10-20 minutes each time. 3) When singing or recitation loudly, it expands and contracts the chest muscles and abdominal muscles rhythmically, enlarges the range of movement of the diaphragm, increases lung capacity, and enhances lung function; the lip-shrinking breathing method helps to improve the patient's lung function. The specific method is to inhale slowly and deeply through the nose until you can no longer inhale; shrink the lip, like a whistle; keep the lip shrinking posture and exhale slowly; abdominal breathing like diaphragm breathing, take a standing position (the weak can take a semi-recumbent/sitting position), Half-bend both knees or a small pillow under the knees to relax the abdominal muscles. Place the left and right hands on the abdomen and chest respectively. Relax your muscles and breathe at rest. Relax the whole body, first exhale and then inhale, inhale the drum and deflate, pass through the mouth during exhalation, pass through the nose during inhalation, exhale deeply, and do not use force. According to the patient's cardiac function, walk slowly (60-80 steps/min, medium-speed 80-100 steps/min, fast 100-120 steps/min. The walking link can be combined with upper limb chest expansion assisting movements to increase the effect. Use ventilators and oxygen generators to help patients with COPD live better. High-quality care, such as opening windows for ventilation. 4) High-quality care: regular indoor air disinfection, such as vinegar, to avoid the stimulation of smoke and dust, smokers. You should

quit smoking. In the cold season or when the climate changes suddenly, keep warm to prevent colds and prevent respiratory infections; pay attention to clean oral skin and wash frequently. When there is a mild oral infection, use normal saline and rinse your mouth before going to bed; excessive sputum Those who cough up sputum as much as possible, especially those who cough early in the morning and have thick sputum, appropriately take expectorants or atomized to dilute the sputum. Elderly or infirm persons should pat their backs and plan daily exercises, such as walking, jogging, and beating. Tai Chi, Qigong, etc., to avoid breathing difficulties caused by overwork; regarding diet, usually pay attention to dietary norms and strengthen nutrition. Mainly use easy-to-digest foods, and eat moderate amounts of high-calorie, high-protein, and rich in various vitamins. Food, it is best to eat small meals, avoid spicy, irritating foods and drink plenty of water.

2.3 Statistical Analysis

SPSS 23.0 (Statistical Software Package for Social Sciences) was used to record and analyze this study. Enumeration data and measurement data were expressed in% and (x±s), respectively. X² and t test were used.

P<0.05 was considered statistically significant.

3. Results

3.1 The Controllable Rate of Diseases in the Two Groups

The controllable rate of disease between the intervention group and the control group was 93.33% (28/30) and 66.67% (20/30) respectively, which was statistically significant (P<0.05). As shown in Table 1:

3.2 The Pulmonary Function Indicators of the Two Groups

The comparison between the intervention group and the control group on VT, TPTEF/Te, VEF/Te/, Ti/Te pulmonary function indexes was statistically significant (P<0.05). As shown in Table 2:

3.3 Two Groups of Treatment Effects

The results of the intervention group on exercise pulse and 6-minute walking distance were significantly higher than those of the control group (P<0.05). As shown in Table 3:

Table 1. Comparison of disease controllable rate between the two groups of patients (%)

group	Number of cases	Take effect	Markedly effective	Bad Disease	controllable rate
Control group	30	9 (30.00)	9 (30.00)	12 (40.00)	20 (60.00)
Intervention group	30	13 (43.33)	15 (50.00)	2 (6.67)	28 (93.33)
t	/	/	/	/	7.458
P	/	/	/	/	0.000

Table 2. Comparison of lung function indicators between the two groups (x±s)

group	Number of cases	VT (ml/kg)	TPTEF/Te (%)	VEF/Te/ (%)	Ti/Te
Control group	30	8.52±0.19	30.04±6.19	31.15±5.06	10.62±0.14
Intervention group	30	13.46±0.27	33.13±4.60	36.37±13.18	39.25±12.07
t	/	81.954	2.194	2.025	12.991
P	/	0.000	0.032	0.047	0.000

Table 3. Comparison of treatment effects between the two groups (x±s)

group	Number of cases	Exercise pulse (times/min)	6 minutes walking distance (m)
Control group	30	118.49±6.82	384.57±3.65
Intervention group	30	140.81±7.96	457.29±2.43
t	/	11.485	87.309
P	/	0.002	0.000

4. Discussion

The combination of high-quality nursing care and breathing exercises has played a prominent role in the clinical application of COPD patients, which has been fully confirmed in the above-mentioned studies in Table 1, Table 2, and Table 3.

The research results of previous studies on this topic further show that the standing Baduanjin exercise applied to patients with stable COPD can improve their lung function, reduce clinical symptoms, improve mobility and quality of life; especially after 6 months of intervention, FEV1, FVC, FEV1/FVC, FEV1% level, 6 min walking distance, sputum expectoration, dyspnea, housework, energy, total score of CAT, difference in activity ability, symptoms, life impact, quality of life total score after 6 months of intervention Outstanding ($P < 0.05$)^[4]. Nursing follow-up for patients with chronic obstructive pulmonary disease can improve health behaviors and effectively improve lung function; especially in FEV1(L) and PEF, it has more application value, and it can also improve patients' respiratory function training, smoking cessation, physical exercise, nutrition supply, etc. Health behaviors have been significantly improved ($P < 0.05$)^[5]. Multiple methods such as breathing exercises and diet care can effectively improve the adverse symptoms of patients with COPD and promote the recovery of the disease as soon as possible; especially in the overall effect of the patient's psychological, physical, and social functions; it has a significant effect on the comparison of ventilation function and hospital recovery time ($P < 0.05$)^[6].

In general, improve the high-quality nursing service management system, and actively provide patients with high-quality nursing services through disease observation, life care, health education, etc.; implement continuous scheduling and flexible scheduling to reduce the number of shifts and ensure patients Get continuous, full, and efficient care; it also provides the possibility to improve the enthusiasm of patient caregivers; breathing function

exercise can improve the prognosis of patients and enhance the effect of disease control.

To sum up, the combination of high-quality care and breathing exercises has outstanding disease controllability rates for COPD patients, especially in improving the lung function of patients and the level of care, which can be used as a follow-up clinical treatment and nursing practice for patients. Feasible measures should be promoted and implemented.

References

- [1] Xie, Y.H., 2018. Analysis of the impact of high-quality nursing on lung function and quality of life in elderly patients with chronic obstructive pulmonary disease. *Chinese and Foreign Medical Research*. 16(18), 74-76.
- [2] Rao, Sh., 2021. The clinical nursing value of respiratory function exercise combined with diet nursing in patients with chronic obstructive pulmonary disease. *Kang Yi*. (11), 97.
- [3] Huang, A.H., Xu, J., Jin, L.J., 2021. Analysis of the nursing effect of the health belief model applied to elderly patients with stable chronic obstructive pulmonary disease. *Chinese and Foreign Medicine*. 40(5), 128-131.
- [4] Yu, P., Jiang, X.F., 2021. Analysis of the effect of standing Baduanjin exercise in patients with stable COPD. *International Journal of Nursing*. 40(3), 493-496.
- [5] Zhang, L.Y., 2020. The effect of nursing follow-up on the health behavior and lung function of patients with chronic obstructive pulmonary disease. *Family medicine. Seeking medicine*. (6), 327.
- [6] Shao, Ch.F., 2020. Application of lip-shrinking abdominal breathing combined with vertical breathing exercises in the community nursing of patients with chronic obstructive pulmonary disease. *Friends of Health*. (24), 10.