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Analysis of the Effect of Specialized Rehabilitation Nursing Combined with Family Support on Cardiac Function and Quality of Life in Patients with Coronary Heart Disease

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Abstract: *Objective:* To explore the actual effectiveness of professional rehabilitation nursing combined with family support in the care of patients with coronary heart disease, and to clarify its specific impact on patients' cardiac function and quality of life. *Methods:* 80 patients with coronary heart disease admitted to our hospital from January 2024 to December 2025 were selected as the research subjects, and divided into a routine nursing group and a combined nursing group using the random number table method, with 40 patients in each group. The routine nursing group adopted routine nursing intervention methods for coronary heart disease, while the combined nursing group used specialized rehabilitation nursing combined with a family support model under the premise of routine nursing. The cardiac function indicators and quality of life scores of the two groups of patients were compared before and after care. *Results:* Before the intervention, the cardiac function indicators and quality of life scores of the two groups were similar ($P > 0.05$); after the intervention, the improvement degree of cardiac function indicators in the combined nursing group was significantly better than that of the routine nursing group, and the total score of CQQC quality of life was significantly higher than that of the routine nursing group ($P < 0.05$). *Conclusion:* Professional rehabilitation nursing combined with family support can effectively improve the cardiac functional status of coronary heart disease patients, significantly improve the quality of life of patients, and has high clinical application value.

Keywords: Coronary heart disease; Specialized rehabilitation nursing; Family support; Cardiac function; Quality of life

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1. Introduction

Coronary heart disease is a very common cardiovascular disease in clinical practice. The onset of the disease is mostly related to the narrowing of the vascular lumen and insufficient blood supply to the myocardium caused by coronary atherosclerosis. Patients often experience symptoms such as chest tightness, chest pain, and shortness of breath after the disease. When the disease is severe, it can also induce secondary diseases such as heart rhythm disorders and heart failure, posing a great threat to the patient's health and life safety [1]. People's living habits are constantly changing, and the aging of the population continues to deepen. The incidence rate of coronary heart disease is increasing year by year, and the

diseased population is gradually becoming younger, which also brings greater challenges to clinical nursing work [2]. The current clinical nursing care for patients with coronary heart disease is mostly based on the conventional nursing model. The nursing content is mostly focused on basic items such as disease observation and medication explanation. There is a lack of targeted rehabilitation interventions and family-level assistance and cooperation. As a result, the rehabilitation effect for patients after discharge is suboptimal, the recovery of cardiac function is slow, and quality of life cannot be effectively improved [3]. Reasonable and standardized rehabilitation care can optimize the myocardial blood supply of patients with coronary heart disease and accelerate the recovery of heart function. Family support is important for patients during their recovery, which can improve their cooperation with care and strengthen their belief in recovery. Based on the above situation, this study selected coronary heart disease patients treated in the hospital as a research sample to analyze the effectiveness of professional rehabilitation nursing combined with family support.

2. Materials and methods

2.1. General information

80 patients with coronary heart disease admitted to our hospital from January 2024 to December 2025 were selected as cases and divided into two groups using the random number table method. Forty patients were selected in the joint nursing group, including 22 men and 18 men, aged 55 to 78 (66.25 ± 5.32) years old. There were 40 patients selected in the routine care group, including 21 men and 19 men, aged 56 to 79 (66.78 ± 5.29) years old. There was no statistical significance in the comparison of general data between the two groups, $P > 0.05$. Inclusion criteria (1) Meet the clinical diagnostic standards for coronary heart disease and be confirmed by electrocardiogram, coronary angiography and other examinations; (2) Have clear consciousness and be able to cooperate in completing nursing and follow-up work; (3) No other serious diseases such as severe liver and kidney insufficiency, malignant tumors. Exclusion criteria: (1) Complicated with severe arrhythmia, heart failure and other complications; (2) Cognitive dysfunction and mental illness, unable to cooperate with care; (3) Dropping out of the study midway or losing contact during follow-up.

2.2. Method

The routine nursing team implements routine nursing interventions for patients with coronary heart disease. The nursing content includes real-time observation of the patient's vital signs, such as heart rate, blood pressure, and breathing, and paying attention to the changes in the patient's chest tightness, chest pain, and other symptoms. According to the doctor's instructions, the patient is provided with antiplatelet, blood lipid regulation, myocardial blood supply and other drug treatments, together with guidance on medication use. The patient is explained to the patient the basic content of the disease and matters that need attention, guides the patient to eat scientifically, work regularly, and promptly informs the doctor when abnormal conditions occur.

The joint nursing team carries out specialized rehabilitation care and family support intervention on the premise of routine care. The specific measures are as follows:

(1) Professional rehabilitation assessment. The nursing staff formulates an exclusive rehabilitation care plan for each patient based on the patient's age, severity of illness, cardiac function classification, and body status, and determines the rehabilitation goals, recovery process, and precautions. The patient's recovery status is assessed every week, and the rehabilitation plan is adjusted on time based on the assessment results to ensure that the rehabilitation care is targeted and effective.

(2) Full-time disease monitoring, arrange specialized personnel to be responsible for the patient's condition monitoring, in addition to routine monitoring of vital signs, focus on observing the patient's electrocardiogram changes, myocardial enzyme spectrum related indicators, carefully check whether the patient has angina pectoris attacks, arrhythmias and other abnormal conditions, completely record the monitoring data, and immediately take intervention measures once abnormalities are discovered to prevent the condition from continuing to worsen. At the same time, the monitoring

results are notified to the doctor on time to provide a reference for adjustment of the treatment plan.

(3) Professional rehabilitation training. A progressive rehabilitation training program is developed based on the patient's cardiac function status. In the early stage, the patient is mainly bed-rested and guided to carry out simple physical activities, such as fisting, leg raising, etc. The duration of a single activity is controlled to 5 to 10 minutes, and is carried out 2 to 3 times a day to prevent excessive activities from increasing the cardiac load; until the patient's cardiac function. After improvement is achieved, the intensity of the activity is gradually increased, and the patient is instructed to carry out soothing exercises such as walking and Tai Chi. The duration of a single activity is controlled to 15 to 30 minutes and is carried out 1 to 2 times a day. During the exercise, pay close attention to the patient's physical reaction. If symptoms such as chest tightness, shortness of breath, palpitation, etc. occur, stop exercising immediately and rest to ensure the smooth progress of rehabilitation training.

(4) Professional diet and medication guidance, combined with the characteristics of coronary heart disease, develop exclusive diet plans for patients, guide patients to eat low-salt, low-fat, low-sugar and high-fiber foods, reduce the consumption of spicy, greasy and other irritating foods, control the daily salt intake within 5 g, eliminate excessive eating, and maintain regular meals; at the same time, strengthen medication guidance, fully inform patients of the usage, dosage, duration of medication, and precautions, highlight the necessity of taking medication according to the doctor's instructions, prevent patients from adjusting the dosage or stopping medication without authorization, regularly understand the patient's physical reaction after medication, and promptly deal with discomfort symptoms that occur after medication.

(5) Family support intervention: nursing staff strengthen communication with patients' families, popularize knowledge about coronary heart disease, rehabilitation care priorities, and the important role of family support to family members, and guide family members to assist nursing staff in implementing rehabilitation care work, such as urging patients to take medications on time, eat scientifically, and work regularly. After completing rehabilitation training, provide more care and encouragement to patients to avoid negative emotions such as anxiety and depression, and build a comfortable and harmonious family rehabilitation environment for patients. At the same time, they answer questions raised by family members, improve the level of care and cooperation of family members, and build a care model in which caregivers and family members collaborate.

2.3. Observation indicators

(1) To compare the cardiac function indicators of the two groups of patients before and after nursing, three indicators, including left ventricular ejection fraction, left ventricular end-diastolic diameter, and stroke volume, were selected, all of which were obtained through cardiac ultrasound examination. They were tested before the nursing intervention and three months after the intervention.

(2) Compare the quality of life of the two groups of patients before and after nursing, using the Chinese Quality of Life Questionnaire for Cardiovascular Patients (CQQC). The questionnaire has a total score of 0 to 154 points. The higher the score, the better the quality of life of the patient. It was evaluated before the nursing intervention and three months after the intervention.

2.4. Statistical methods

SPSS 24.0 was used to analyze the data. Measurement data that conformed to the normal distribution were expressed as mean plus or minus standard deviation and a t-test was performed; count data were expressed as percentages and χ^2 test was performed. $P < 0.05$ represents a significant difference.

3. Results

3.1. Comparison of cardiac function indicators between the two groups before and after care

After the intervention, the left ventricular ejection fraction and stroke volume of the combined nursing group were significantly higher than those of the routine nursing group, and the left ventricular end-diastolic diameter was significantly smaller than that of the routine nursing group ($P < 0.05$). See **Table 1** for details.

Table 1. Comparison of cardiac function indicators between the two groups before and after nursing (mean ± SD)

Group	Left ventricular ejection fraction (%)		Left ventricular end diastolic diameter (mm)		Stroke volume	
	Before nursing	After nursing	Before nursing	After nursing	Before nursing	After nursing
Routine nursing group (n = 40)	52.36 ± 4.12	56.78 ± 4.25	58.65 ± 3.42	55.42 ± 3.31	58.25 ± 5.36	62.34 ± 5.42
Combined nursing group (n = 40)	52.45 ± 4.08	63.56 ± 4.31	58.72 ± 3.38	49.87 ± 3.26	58.32 ± 5.31	70.65 ± 5.38
t	0.098	7.084	0.092	7.555	0.059	6.882
P	0.922	0.000	0.927	0.000	0.953	0.000

3.2. Comparison of quality of life scores between the two groups before and after nursing

After the intervention, the total score of cqqc in the combined nursing group was significantly higher than that in the conventional nursing group ($P < 0.05$), see **Table 2** for details.

Table 2. Comparison of quality of life scores between the two groups before and after nursing (mean ± SD, points)

Group	Before intervention	After intervention
Routine nursing group (n = 40)	78.56 ± 8.42	89.65 ± 8.38
Combined nursing group (n = 40)	78.62 ± 8.39	108.72 ± 8.45
t	0.032	10.135
P	0.975	0.000

4. Discussion

Coronary heart disease is a chronic progressive cardiovascular disease. The core of its treatment is not only to alleviate clinical symptoms and control the development of disease, but also to improve the patient's cardiac function, improve the quality of life, and help the patient return to normal living conditions [4]. Impaired cardiac function is one of the main pathological characteristics of patients with coronary heart disease. Left ventricular ejection fraction, left ventricular end diastolic diameter and stroke volume are important indicators for evaluating cardiac function. Their level changes can directly reflect the patient's myocardial blood supply and cardiac systolic and diastolic function, and the quality of life can comprehensively reflect the patient's physical, psychological and social adaptation, which is an important reference for evaluating the nursing effect. Under the conventional nursing mode, the nursing work is mainly focused on basic condition monitoring and medication guidance, lacking targeted rehabilitation intervention and family-level support, which can not meet the rehabilitation needs of patients with coronary heart disease, resulting in slow recovery of cardiac function and no obvious improvement of quality of life. Full-time rehabilitation nursing combines family support mode, combines full-time rehabilitation intervention with family support, and provides comprehensive and personalized nursing services for patients

from the perspective of individual needs of patients, can effectively improve patients' cardiac function and quality of life.

The results of this study showed that after the intervention, the left ventricular ejection fraction and stroke volume in the combined nursing group were significantly higher than those in the conventional nursing group, while the left ventricular end diastolic diameter was significantly smaller than that in the conventional nursing group, indicating that professional rehabilitation nursing combined with family support can effectively improve the cardiac function of patients with coronary heart disease. The reasons were analyzed. In full-time rehabilitation nursing, the nursing staff formulated an exclusive rehabilitation nursing plan for the patients. Through the full-time condition monitoring, the changes of the patients' cardiac function and the development of the disease could be grasped in time, and the rehabilitation plan and nursing measures could be adjusted in time to prevent the aggravation of the disease. Professional rehabilitation training follows the principle of gradual progress, and appropriate exercise programs are formulated according to the patient's cardiac function. In the early stage, simple limb activities are mainly used and the amount of activity is gradually increased. Mild exercise can promote the patient's systemic blood circulation, improve myocardial blood and oxygen supply, and enhance myocardial contractility, thereby improving left ventricular ejection fraction and stroke output, while promoting the recovery of left ventricular diastolic function and reducing left ventricular end diastolic diameter [5]. In addition, professional diet and medication guidance also provide an important guarantee for the recovery of cardiac function. A low salt, low fat and low sugar diet can reduce the cardiac load, and avoid further aggravation of coronary atherosclerosis due to improper diet, which leads to increased blood lipids and blood pressure fluctuations; Standardized medication guidance can ensure that patients take medicine according to the doctor's advice, effectively control the disease and improve myocardial blood supply, laying the foundation for the recovery of cardiac function. The participation of family support can improve the compliance of patients' rehabilitation training and medication. The supervision and encouragement of family members can make patients more actively cooperate with rehabilitation nursing work, and avoid the effect of unauthorized interruption of training or withdrawal of drugs on the recovery of cardiac function. At the same time, the care and support of family members can relieve the psychological pressure of patients, reduce the impact of adverse emotions on cardiac function, and promote better recovery of cardiac function [6].

The improvement of quality of life in this study is also an important goal of rehabilitation nursing for patients with coronary heart disease. After the intervention, the total score of cqqc in the combined nursing group was significantly higher than that in the conventional nursing group, indicating that professional rehabilitation nursing combined with family support can effectively improve the quality of life of patients with coronary heart disease. Patients with coronary heart disease are troubled by symptoms for a long time. They often have chest distress, chest pain and other discomfort and worry about the aggravation of the disease. They are prone to anxiety, depression and other negative emotions. These factors will seriously affect the quality of life of patients. In the process of full-time rehabilitation nursing, nursing staff not only pay attention to the physical rehabilitation of patients, but also pay attention to the psychological state of patients. Through communication with patients, they can timely understand their psychological needs, give psychological counseling and support, help patients relieve bad emotions and enhance their rehabilitation confidence. Personalized diet and rehabilitation training programs can effectively reduce the clinical symptoms of patients, reduce the impact of discomfort on life, gradually restore the normal diet and activities of patients, and improve physical comfort [7]. Family support plays an obvious role in improving the quality of life of patients. The company and care of family members can make patients feel warm care and reduce loneliness. At the same time, family members can help nurses do well in patients' daily nursing and rehabilitation training, and help patients better adapt to the disease and restore the normal rhythm of life. In addition, professional rehabilitation nursing can help patients master disease-related knowledge and self-care skills, so that patients can also effectively self-care after discharge, reduce disease recurrence and further improve the quality of life. The core reason is that it can fully combine the disease characteristics and rehabilitation needs of patients with coronary heart disease, and realize the pertinence of nursing. As an important extension of nursing work, family support can make up for the shortage of hospital nursing, enable patients to obtain continuous nursing and support after discharge, form a good model of hospital family collaborative nursing, and effectively improve the continuity of nursing [8].

5. Conclusion

In a word, professional rehabilitation nursing combined with family support can effectively improve cardiac function of patients with coronary heart disease and significantly improve quality of life of patients. This nursing model meets the rehabilitation needs of patients with coronary heart disease, is scientific and feasible, and has high clinical promotion value. It can provide effective reference for the nursing work of patients with coronary heart disease, and help more patients with coronary heart disease recover to health and return to normal life.

Disclosure statement

The author declares no conflict of interest.

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