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Original Article

Application of humanistic nursing in patients with coronary heart disease and its influence on recovery

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Abstract: Objective: To apply humanistic nursing in patients with coronary heart disease and to analyze its influence on body dysfunction, negative emotions and quality of life. Methods: This prospective study was performed in 114 patients with coronary heart disease. These patients were randomly assigned to the control group and the experimental group (57 patients for each group). Patients in the control group were treated with routine nursing. For the experimental group, patients received humanistic nursing. Variances in clinical indicators (like heart rate, blood pressure, and angina), body dysfunction, negative emotions and quality of life were compared between the two groups. Results: Heart rate, blood pressure, number of episodes of angina pectoris, sickness impact profile (SIP) score in physical function, psychosocial state, SAS score, and SDS score in the two groups after intervention were significantly lower than those before intervention. Meanwhile, the short form 36-item health survey (SF-36) scale in both groups after intervention was significantly increased when compared with those before intervention. All variances in the experimental group were more significant than those in the control group. Conclusion: For patients with coronary heart disease, humanistic nursing can help to relieve clinical symptoms, eliminate negative emotions, and improve body dysfunction and quality of life.

Keywords: Humanistic nursing, coronary heart disease, body dysfunction, negative emotions, quality of life

Introduction

Coronary heart disease is caused by myocardial ischemia and hypoxia, which are related to the narrowing and occlusion of the blood vessel lumen on account of coronary atherosclerosis. Clinical symptoms of the disease include chest pain and discomfort. These symptoms are gradually worsened by the progress of the disease, resulting in a severely influenced quality of life [1, 2]. Coronary heart disease is most commonly observed in the elderly population. Patients with coronary heart disease are prone to angina pectoris, arrhythmia, and even death [3, 4]. Effective nursing of patients with coronary heart disease contributes to the improvement of therapeutic effects, postponement of progression, alleviation of conditions, and improvement of prognosis [5]. In 1976, humanistic nursing was first proposed by Paterson and Zderad. It was emphasized that all required services should be provided, apart from nursing of disease [6]. Thereafter, disease-centered nursing has been successfully transformed into patient-centered nursing. At present, there are many reports on humanistic nursing [7, 8]. However, the number of studies on the recovery of patients with coronary heart disease is only a handful. Here we analyzed, humanistic nursing and its application in patients with coronary heart disease, and its influence on body dysfunction, negative emotions and quality of life.

Materials and methods

General information

In total, 114 patients admitted in the cardiology department of Provincial Hospital Affiliated with Shandong First Medical University (Shandong Provincial Hospital) for coronary heart disease between January 2018 and October 2019 were enrolled in this retrospective study. These patients were randomly allocated into the con-

trol group and the experimental group (57 patients for each group).

Diagnostic criteria: Patients with typical symptoms of angina pectoris but without aortic valve disease; patients with a history of acute myocardial infarction; patients who had a history of previous myocardial infarction; patients with over 70% coronary stenosis, which was examined using coronary angiography (CAG) [9].

Inclusion criteria: Patients who met the above diagnostic criteria; patients aged between 40 and 75 years old; one month before enrollment patients did not take drugs that inhibit platelet function, like aspirin; patients with normal cognition and consciousness; patients actively participated in various clinical examinations; patients who were able to perform sickness impact profile (SIP) independently; patients who had complete medical records.

Exclusion criteria: Patients with congenital heart malformations; patients who had heart failure caused by other reasons; patients who had compromised immune systems; patients with severe liver and kidney dysfunction; patients that could not complete SIP; patients with cognitive dysfunction; patients with diseases such as immune-related diseases, blood-related diseases, acute and chronic infections, and endocrine-related diseases.

This study was approved by the Ethics Committee of Provincial Hospital Affiliated with Shandong First Medical University (Shandong Provincial Hospital). Informed consent was signed by patients or their family members.

Methods

After admission, patients in both groups received routine treatment, such as reduction of myocardial oxygen consumption and antithrombotics, alleviation of angina pectoris, and hypolipidemic therapy.

For the control group, patients were treated with routine nursing, which consisted of medication, diet control, posture correction, daily living care, etc.

Patients in the experimental group received humanistic nursing which was composed of 6 aspects. First, knowledge propagation: Patients received training about knowledge related to coronary heart disease, like its causes, prevention, treatment, clinical manifestations, and precautions, every month. The training was performed through face to face teaching, video-based education, and reading of brochures. In order to reduce the risk of adverse events, patients were educated about emergency treatment. Second, guidance on medication: Nursing staff frequently communicate with patients to make them aware of the importance of taking medicine in accordance with doctors' advice. In addition, nursing staff prepare patients' daily drugs in advance, and carefully check these drugs before they were taken by patients. Third, diet control: A reasonable diet plan was made according to patients' daily eating habits. Cautions were listed as following: no smoking and no alcohol; reduce the intake of high-calorie and high-cholesterol foods; salt control; eat more fiber-rich foods such as fruits, vegetables, and coarse grains; have more lean meat and less fat meat. Fourth, exercise guidance: According to the recovery of patients, nursing staff make a reasonable and personalized exercise plan. Patients do more aerobic exercises like brisk walking, and less strenuous exercise. Patients were also supposed to do exercise step by step instead of trying to build Rome in a day. Fifth, psychological nursing: Nursing staff communicate with patients frequently to discover their emotional fluctuations as early as possible. The reason of emotional changes is discovered, and targeted psychological guidance is made. Nursing staff inform patients of the importance of maintaining a positive and peaceful mentality. Meanwhile, they tell patients how to eliminate negative emotions, like pessimism and anxiety. In order to relieve patients' psychological burden and increase their confidence in overcoming disease, family members were advised to provide patients with more care, understanding, and support. Lastly, other aspects: Patients were instructed to do more clockwise massage of the abdomen to maintain smooth stool. Forced defecation should be avoided to reduce myocardial oxygen consumption and worsen condition.

Outcome measures

Basic data were compared between the two groups.

Clinical indicators, like heart rate, blood pressure, and number of episodes of angina pecto-

Table 1. Comparison of basic data

Group	Control group (n=57)	Experimental group (n=57)	t value	*P* value
Gender (n)			0.882	0.348
Male	24	29		
Female	33	28		
Age (years)	49.65±6.24	48.86±5.89	0.695	0.488
BMI (kg/m^2)	22.48±2.77	22.93±2.09	0.979	0.33
SBP at admission (mmHg)	130.12±11.87	128.43±13.39	0.713	0.477
DBP at admission (mmHg)	101.40±12.34	98.93±10.46	1.153	0.251
Heart rate at admission (times/min)	93.07±7.20	92.20±6.78	0.664	0.508

Note: BMI, body mass index; SBP, systolic blood pressure; DBP, diastolic blood pressure.

ris in the two groups before and after intervention were analyzed and compared.

SIP was used to evaluate body dysfunction of patients in the two groups before and after intervention [10]. The profile consisted of 136 items, which were divided into 3 categories concerning 12 aspects: physical function (ambulation, body movement, mobility), psychosocial state (social interaction, alertness behavior, communication, emotional behavior), and other activities (sleep and rest, home management, work, eating, recreation and pastimes). The total score was 1003 points. The body dysfunction was greater when the score was higher.

Self-rating anxiety scale (SAS) and self-rating depression scale (SDS) were applied to assess the anxiety and depression of patients in the two groups before and after intervention [11, 12]. For SAS score, 50 points was the cut-off value, and the higher the score, the more sever the anxiety. For SDS score, 53 points was the cut-off value, and the higher the score, the more sever the depression.

Short form 36-item health survey (SF-36) scale was used to evaluate life quality of patients in the two groups before and after intervention. SF-36 scale consisted of 8 items: role-emotional, social functioning, role-physical, physical functioning, vitality, body pain, mental health, and general health [13]. The quality of life was better when the score was higher.

Statistical methods

The data was analyzed using SPSS statistical software version 20.0. The measurement data were calculated as mean ± standard deviation ($\bar{x}$ ± sd). Independent sample t test was used for inter-group comparison, while paired t-test was applied for before-after comparison within the same group. The enumeration data were expressed as number/percentage (n/%); comparison was compared with chi-square test. The difference was statistically significant when the *P* value was less than 0.05.

Results

Basic data

There were no significant differences concerning gender, age, body mass index (BMI), systolic blood pressure (SBP) at admission, diastolic blood pressure (DBP) at admission, and heart rate at admission between the two groups (all P>0.05, **Table 1**).

Clinical indicators

As shown in **Table 2**, heart rate, blood pressure, and number of episodes of angina pectoris in both groups after intervention were significantly decreased when compared with those before intervention (all P<0.05). Compared with the control group, all variances in the experimental group were significant (all P<0.001).

SIP score

As displayed in **Table 3**, SIP score in physical function, psychosocial state, and other activities in both groups after intervention were significantly lower than those before intervention (all P<0.05). All variances in the experimental group were significant when compared with the control group (all P<0.05).

Table 2. Comparison of clinical indicators

Group	Control group (n=57)	Experimental group (n=57)	t value	*P* value
Before intervention				
Heart rate (times/min)	93.07±7.20	92.20±6.78	0.664	0.508
SBP (mmHg)	130.12±11.87	128.43±13.39	0.713	0.477
DBP (mmHg)	101.40±12.34	98.93±10.46	1.153	0.251
Number of episodes of angina pectoris (times/m)	5.94±1.35	5.33±1.05	1.621	0.108
After intervention				
Heart rate (times/min)	84.08±6.24**	75.49±5.90**	7.552	<0.001
SBP (mmHg)	125.48±8.50*	115.57±10.90**	5.413	<0.001
DBP (mmHg)	93.67±6.07**	85.40±7.95**	6.242	<0.001
Number of episodes of angina pectoris (times/m)	3.46±1.04**	1.10±0.52**	15.324	<0.001

Note: Compared with patients in the same group before intervention, *P<0.05, **P<0.01; SBP, systolic blood pressure; DBP, diastolic blood pressure.

Table 3. Comparison of SIP score

Group	Control group (n=57)	Experimental group (n=57)	t value	*P* value
Before intervention				
Physical function	215.09±28.40	218.87±20.20	0.819	0.415
Psychosocial state	271.50±27.55	268.69±24.30	0.578	0.565
Other activities	338.58±32.24	335.09±38.40	0.526	0.6
After intervention				
Physical function	204.50±21.57*	197.08±17.94**	1.997	0.048
Psychosocial state	259.40±22.50*	239.96±19.07**	4.976	<0.001
Other activities	325.60±28.50*	301.06±19.66**	5.351	<0.001

Note: Compared with patients in the same group before intervention, *P<0.05, **P<0.01; SIP, sickness impact profile.

Table 4. Comparison of SAS and SDS score

Group	Control group (n=57)	Experimental group (n=57)	t value	*P* value
Before intervention				
SAS score	53.20±7.09	54.49±8.58	0.875	0.383
SDS score	50.43±6.10	49.09±5.60	1.222	0.224
After intervention				
SAS score	49.78±6.93*	43.50±6.55**	4.972	<0.001
SDS score	47.88±5.55*	35.60±6.04**	11.303	<0.001

Note: Compared with patients in the same group before intervention, *P<0.05, **P<0.01; SAS, self-rating anxiety scale; SDS, self-rating depression scale.

SAS and SDS score

As shown in **Table 4**, SAS and SDS score in both groups after intervention were significantly reduced when compared with those before intervention (all P<0.05). Compared with the control group, both variances in the experimental group were significant (both P<0.001).

SF-36 scale

SF-36 scale in both groups after intervention was significantly higher than that before intervention. Variance in the experimental group was more significant than that in the control group (all P<0.01, **Figure 1** and **Table 5**).

Discussion

With the improvement of life quality and the enhancement of humanitarian consciousness, requirements for the quality of clinical nursing are increasing. Coronary heart disease is a common chronic disease, which means that the treatment is a long-term process. The improvement of clinical symptoms is the priority of traditional treatment, while psychological state and body function are often ignored [14]. The progress of medical science and development of various nursing concepts have made the medical system gradually aware of the importance of improving psychological state and quality of life, in addition to alleviating pain.

In modern nursing, humanistic nursing has been transformed from disease-centered nursing into patient-centered nursing. This novel

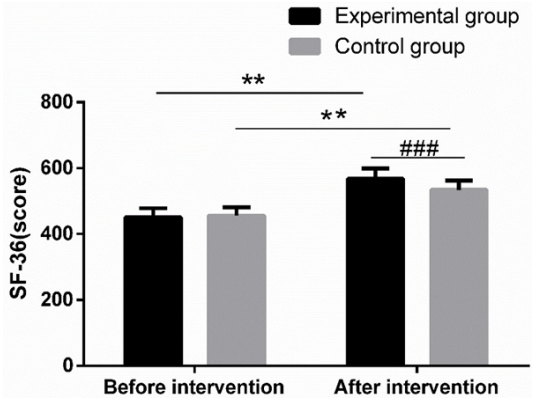

Figure 1. Comparison of SF-36 scale. Compared with patients in the same group before intervention, **P<0.01; compared with patients in the control group after intervention, ###P<0.001; SF-36, short form 36-item health survey.

nursing is not only individualized but also integrated. Principles of humanistic nursing are being human-oriented and patient-centered. In this model, in the nature of humanity patients are treated with respect and human dignity are protected. Nursing is not carried out until the physiological needs of patients are met. Nursing staff should be both responsible and kind hearted to provide patients with comprehensive services on disease, psychology, mentality, and emotions [15]. Humanistic nursing is a method that tightly integrates noble service concepts, such as communication skills, life caring, and physical and mental health nursing all together [16]. In recent years, humanistic nursing has been more and more widely applied in clinical practice. For patients with coronary heart disease, humanistic nursing contributes to improved clinical symptoms, reduced number of episodes of angina pectoris, and increased quality of life living with disease [17].

The middle-aged and elderly populations are at high risk of coronary heart disease. As a chronic disease, coronary heart disease cannot be cured. Therefore, it is very important to maintain body function [18]. SIP is widely used to evaluate the loss of body function. The higher the score, the more sever the loss of body function [9]. In our study, heart rate, blood pressure, number of episodes of angina pectoris, SIP score in physical function, psychosocial state, and other activities in the experimental group after intervention were significantly decreased when compared with those in the control group. These results suggest that humanistic nursing of patients with coronary heart disease can help to improve clinical symptoms and body function.

Patients with coronary heart disease are accompanied with reduced body function and quality of life. In addition, the treatment of coronary heart disease is a long-term process. Therefore, patients are prone to negative emotions (like irritability, anxiety, and depression), which are induced by pain and hopelessness [19]. Golimbet et al. reported that 5% to 30% of patients with coronary heart disease were accompanied with different levels of anxiety, while 40% to 70% of patients were combined with various degrees of depression [20]. Therefore, nursing staff are need to pay more attention to the changes of psychological state during the treatment of patients with coronary heart disease. In humanistic nursing, psychological nursing was especially emphasized. Nursing staff communicate with patients frequently to discover their emotional fluctuations as early as possible. Targeted psychological guidance and instruction on how to eliminate negative emotions like pessimism and anxiety are performed. In our study, SAS score and SDS score in the experimental group after intervention were significantly lower than those in the control group. Meanwhile, SF-36 scale in the experimental group after intervention was significantly increased when compared with the control group. These results indicate that humanistic nursing of patients with coronary heart disease can significantly relieve anxiety, depression and other negative emotions, and can help to improve the quality of life. It is consistent with the conclusion reported by Qin et al. [21].

However, the sample size of this study is inadequate. In addition, this is a single-centered study and no long-time follow up was performed. A multi-centered and long-time follow up study will be conducted in amplified number of patients to provide more scientific results.

In summary, humanistic nursing of patients with coronary heart disease may contribute to relieved clinical symptoms, eliminated negative emotions, and improved body dysfunction and quality of life, which is worth promoting in clinical practice.

Table 5. Comparison of SF-36 scale

Group	Control group (n=57)	Experimental group (n=57)	t value	*P* value
SF-36 scale before intervention	456.47±25.04	450.70±27.69	1.167	0.246
SF-36 scale after intervention	524.50±27.67**	567.89±30.80**	7.912	<0.001

Note: Compared with patients in the same group before intervention, **P<0.01; SF-36, short form 36-item health survey.

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Disclosure of conflict of interest

None.

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