

RESEARCH ARTICLE

The clinical effect of predictive care in alleviating negative emotions in cardiology patients

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Predictive care methods are of great significance in mobilizing nursing enthusiasm and promoting patient recovery. Patients with cardiovascular diseases usually face more severe negative emotions than those with other common diseases. Predictive nursing methods can intervene in the negative emotions of patients in advance, which plays a crucial role in promoting their recovery. To study the effect of predictive care in alleviating negative emotions, and to provide new ideas for clinical nursing of patients with cardiology, this study included 180 hospitalized patients who underwent treatment in the cardiology department of a hospital from June 2021 to March 2022, and randomly divided them into two equal groups with the control group patients receiving routine nursing measures and the intervention group patients receiving predictive care interventions. The entire comparative experiment mainly used a questionnaire survey method to record the basic information of 180 cardiovascular patients. The positive negative emotion scale, anxiety self-assessment scale, and depression self-assessment scale were applied to record the emotional changes of the two groups before and after nursing care. The positive and negative emotional scores, anxiety scores, and depression scores before and after the intervention experiment were compared. The results showed that the three types of emotional scores at admission were statistically insignificant ($P > 0.05$). However, the scores at discharge demonstrated significant differences ($P < 0.05$). After predictive care, the number of patients with severe anxiety and depression decreased. The patients without anxiety and depression increased. The results suggested that predictive care had a significant relieving effect on negative emotions in patients with cardiology, which could effectively improve their psychological state.

Keywords: cardiology; patients; negative emotions; anxiety; depression; predictive care.

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Introduction

The improvement of living conditions and changes in dietary structure have led to an increasing trend in the incidence and mortality rate of cardiovascular diseases in China in recent years. Common cardiovascular diseases include hypertension, angina, coronary heart disease, myocarditis, arrhythmia, myocardial infarction, myocardial ischemia, and a series of

cardiovascular diseases [1]. Currently, hospitalized patients with heart disease may have the following issues. Firstly, patients with visceral diseases often face significant psychological pressure including fear of the disease and concerns about treatment, which may lead to negative emotions such as anxiety and depression. Secondly, patients may have nutritional deficiencies as heart disease patients often need to control their diet and limit their

intake of salt, sugar, fat, and other nutrients. Thirdly, patients may lack exercise. Heart disease patients should avoid vigorous exercise, but long-term lack of exercise may lead to muscle atrophy, weakened immunity, and other problems. Fourthly, patients also face medication side effects such as gastrointestinal discomfort and liver function damage. In addition, patients with heart disease are prone to various complications such as heart failure, arrhythmia, *etc.* In response to the above issues, predictive nursing methods can provide patients with relatively timely interventions to help them recover their health. Therefore, predictive care is of great significance in clinical research. There is currently no clear evidence to suggest that predictive care has been widely applied in cardiology clinics. Although predictive care has many potential benefits in theory such as preventive treatment improving patient quality of life and reducing medical costs, its application in cardiology is still in the early stage because predictive care relies on a large amount of medical data and advanced methods for analysis, which remains a technical challenge. Even with sufficient data and advanced algorithms, it is necessary to have professional personnel to carry out specific operations. At present, there is relatively insufficient talent in this area. Further, the application of predictive care in cardiology clinics also requires a balance between ethical and legal issues. For example, how to balance the privacy and information rights of patients, and how to ensure the reliability of prediction results. Therefore, although predictive care has great potential for application in cardiology, to truly achieve its clinical application, many technical and ethical challenges still need to be overcome.

The patients with cardiovascular diseases are often accompanied by various diseases such as hypertension and hyperglycemia. Due to the rapid onset and change of cardiovascular diseases, many antiarrhythmic drugs and vasoactive drugs are often used during the treatment process [2]. During the use of such drugs, it is often necessary for nursing staff to accurately administer the dosage, adjust the

infusion rate at all times, and continuously monitor changes in blood drug concentration. The job requirements for nursing staff are relatively high, and it also brings significant pressure to patients. In the traditional treatment process of cardiovascular diseases, surgical and drug treatments are mainly used to avoid or improve critical and severe cases such as myocardial infarction and heart failure, and to improve the quality of life of patients. However, during this treatment process, it is often easy to overlook the patient's psychological issues [3]. A study suggested that healthcare professionals need to pay extra attention to patients' psychological issues while treating cardiovascular diseases. The treatment model of "Psycho-cardiology" was proposed [4]. In recent years, the Psycho-cardiology treatment model has gradually received more attention and development. Most studies believe that timely and effective intervention in the psychological state of cardiovascular patients can effectively improve their prognosis while managing their physical diseases. Previous studies found that while treating patients with coronary heart disease and angina, intervening in their psychological state effectively improved their clinical treatment effectiveness [5]. Therefore, adopting positive psychological intervention measures for patients can improve disease prognosis and achieve better clinical treatment effects. Related studies have shown that patients in solid internal medicine generally experience negative psychological emotions during the treatment process.

Predictive care (PC) is a new concept of advanced care that belongs to modern nursing. PC requires nurses to use nursing related knowledge to comprehensively analyze and judge patients and predict existing risks. Thus, timely and effective nursing measures are taken to avoid nursing complications and improve nursing quality and patient satisfaction [6]. PC in clinical practice mainly includes holistic nursing assessment, nursing risk identification, and nursing activity intervention. This nursing method is patient centered. The patient's condition is predicted,

analyzed, and intervened after evaluation. At present, scholars have applied predictive care to clinical disease intervention. Shi *et al.* applied predictive care in clinical research and postoperative interventions for children with hypospadias. The results showed that patients receiving preventive care had significantly higher postoperative recovery, low or no anxiety and postoperative complications, and high satisfaction compared to conventional nursing methods [7]. Naziya *et al.* applied PC to the clinical care of dialysis patients. This method could better meet the needs of patients and improve clinical treatment effectiveness [8]. From this perspective, the predictive care model has played a considerable role in the treatment of clinical diseases. Therefore, this study mainly explored the intervention effect of predictive nursing in alleviating negative emotions in cardiology patients to improve their rehabilitation quality and provide new ideas for clinical nursing of cardiology patients. It was important to provide personalized nursing services for patients through this study, further alleviate psychological pressure, meet psychological and physiological needs, enhance their mental health level, and enhance the rehabilitation quality of cardiology patients.

Materials and methods

Research objects

A total of 200 hospitalized patients who underwent pathological diagnosis in the cardiology department of the NO. 3 Provincial People's Hospital of Henan Province (Zhengzhou, Henan, China) from June 2021 to March 2022 were recruited in this study. The patients' inclusion criteria for this research were that the patient was over 18 years old, had basic cultural knowledge to complete questionnaire surveys, had no history of mental illness, did not have any self-awareness or consciousness disorders. The exclusion criteria for this study included that the patient had severe heart, lung, and liver diseases, and had severe damage to important organ functions and cognitive impairment and a history

of previous mental illness. After excluding non-compliant cardiology patients, a total of 180 patients were ultimately selected for this research including 61 patients with coronary atherosclerotic heart disease, 37 patients with hypertensive heart disease, 15 patients with rheumatic heart disease, 26 patients with pulmonary heart disease, 22 patients with cardiomyopathy, and 19 patients with congenital heart disease. The procedures of this research was approved by the Institution Review Board of the NO. 3 Provincial People's Hospital of Henan Province (Zhengzhou, Henan, China). All 180 patients were divided into the control group (CG) where the patients received routine nursing measures, and the intervention group (IG) where the patients received predictive nursing care. The specific measures for predictive nursing intervention included (1) on the first day of admission, comprehensively understanding the patient and developing a one-on-one nursing plan. Patients could learn about their own disease related knowledge and subsequent treatment plans; (2) on the third day after admission, observing and recording the psychological changes of the patient within three days, and preliminarily alleviating the negative emotions of the patient in the early stage of hospitalization; (3) in the first week after admission, developing an advanced nursing plan for the patient including diet and daily routine to further helping the patient recover physically and improving their psychological condition; (4) analyzing the psychological changes, physical condition, and mental state of the patient throughout the entire admission stage and before and after admission. It was hope that the patient could be satisfied with the predictive care method and be discharged smoothly.

Caring methods

The traditional nursing method was used to care the patients in the control group, which included (1) introducing admission related contents to patients and their families; (2) providing daily medication change and daily care for patients; (3) cooperating with physicians to conduct routine examinations and basic nursing care such as

mental health education, encourage and comfort patients and their families, and alleviate patients' tension and anxiety; (4) timely observing the patient's condition and whether there were accompanying symptoms, helping the patient measuring body temperature, blood pressure, *etc.*, observing changes in the patient's condition. So that, the appropriate clinical treatment measures could be taken in a timely manner based on the patient's condition changes; (5) providing dietary guidance to patients and informing patients to consume low salt, low fat, low cholesterol, digested, and low-calorie foods; (6) providing routine health education to patients including disease introduction, diet, medication guidance, *etc.*

Based on traditional nursing content, predictive nursing was adopted to care for the cardiology patients in the intervention group. The specific contents of predictive care were carried out as follows. Based on existing information and reference experience, combined with the specific conditions of patients in the cardiology department, corresponding predictive nursing plans were designated, which included overall nursing evaluation, nursing risk identification, and nursing interventions. During the overall nursing evaluation process, the nurses should understand the general information of the patient including gender, age, disease history, blood pressure, and other specific information, and then understand the cardiology treatment received by the patient, and evaluate the emotions of the admitted patients by using self-rating anxiety scale (SAS) (<https://m.medsci.cn/scale/show.do?id=87b111489>) and Self-rating depression scale (SDS) (<https://www.wjx.cn/jq/10054221.aspx>). The second stage of predictive nursing was to identify the risk factors of care. After admission, the patient's basic information, physical condition, and condition were analyzed to determine whether they were in a high-risk group. The patient's psychological state was analyzed based on the self-assessment scale filled out upon admission to identify the patient's negative anxiety emotions and the severity of negative

emotions. Finally, the corresponding nursing interventions for patients were implemented to (1) improve patients' daily habits including quitting smoking and drinking and eating a reasonable and correct diet, inform patients of the serious threat that bad lifestyle habits posed to their bodies; (2) develop a reasonable diet for patients by providing them with reasonable food combinations based on the actual situation of the patients. Patients should adhere to healthy eating habits for a long time. Through reasonable diet, they could effectively control the risk factors that triggered diseases; (3) develop a reasonable exercise intervention plan for patients. The core of cardiac rehabilitation was exercise, which provided appropriate exercise plans based on the patient's exercise risk assessment results. Exercise time should be controlled within half an hour. The patient should not experience discomfort such as chest tightness and shortness of breath during exercise; (4) provide targeted education to patients, develop health promotion manuals, increase communication with patients, and promptly answer their questions.

Observed indicators

(1) Questionnaire survey methods

The basic information of 180 cardiovascular patients was recorded. At the same time, the scores of positive and negative emotion scales, anxiety scales, and depression scales of patients before intervention (admission) and after intervention (discharge), as well as the number of patients with different levels of anxiety and depression were counted.

(2) Hamilton Depression Scale (HAMD) and SDS ratings

According to the Hamilton Depression Scale (HAMD) score, the depression level of patient was evaluated. At admission and discharge, the patient's HAMD scores were evaluated to analyze the improvement of their negative emotions. A score of less than 7 indicated no depression, 7-16 stood for mild depression, 17-23 stood for moderate depression, and ≥ 24 was for severe depression. At admission and discharge, the patients in both groups were given a Self-rating

Depression Scale (SDS) form to assess their depression level based on their true feelings in the past week. The total score of the SDS form was 100 and was divided into 20 small items. The scoring criteria for SDS were that the standard value was 53 with a score below 53 indicating no depression, a score of 53-62 for mild depression, 63-72 for moderate depression, and a score above 72 for severe depression.

(3) Quality of life

The Short Form 36 scoring standard (SF-36) (<https://www.wjx.cn/jq/12366519.aspx>) was applied to evaluate the quality of life at admission and discharge. The SF-36 scoring standard is applicable to various populations to understand physical, psychological, social function, and overall health status. It includes 8 related indicators including social function, body pain, physiological function, physiological function, emotional function, mental health, psychological health, vitality, and overall health. The scoring range for each indicator is [0, 100]. A higher score means that the impact of related issues is smaller, indicating a higher quality of life for individuals.

(4) Discharge satisfaction

At discharge, the patients in two groups filled out a discharge satisfaction questionnaire, which evaluated the patients' feelings during hospitalization, the service attitude of nursing staff, professional level, and treatment effectiveness. The evaluation results included four levels as very satisfied, satisfied, average, and dissatisfied. The contents of the questionnaire were listed in Table 1.

Statistical analysis

SPSS 26.0 software (IBM, Armonk, New York, USA) was employed for data statistical analysis. If the data conformed to a normal distribution, it was presented as the mean \pm variance. T-test was applied for inter group comparison. On the contrary, it was represented by median. In counting data, frequency (%) was used as a representation and was used to test. $P < 0.05$ indicated the significant difference between the

tested groups [9]. Furthermore, Pearson correlation analysis was used to analyze general patient data.

Table 1. Content of discharge satisfaction evaluation.

Evaluation item	Evaluation content
Medical quality	Doctor's professional level
	Treatment effect
	Diagnostic accuracy
Service attitude	Nurse communication attitude
	Doctor communication attitude
	Concern level
	Response speed
Service attitude	Ward cleanliness
	Toilet cleanliness
	Ward comfort
	Environmental safety

Results

General information comparison

Statistical Pearson correlation analysis showed that the general information of the patients in two groups had no difference ($P < 0.05$) (Table 2).

Comparison of positive and negative emotions between CG and IG at admission and discharge

The patients' positive and negative emotional values of the two groups at admission and discharge were compared (Table 3). The positive and negative emotional scores of the two groups at admission were insignificant ($P > 0.05$). However, there were a significant difference between two groups in positive and negative emotional scores at discharge ($P < 0.05$), which indicated that predictive care could effectively improve the emotional levels of patients in cardiology, leading to an improvement in their negative emotions.

Comparison of anxiety emotions between two groups of patients at admission and discharge

The patients with different levels of anxiety at admission and discharge between the two

Table 2. Basic information of patients.

Contents		Control group (n = 90)	Intervention group (n = 90)	χ^2	<i>P</i>
Gender	Male	48	39	1.35	0.24
	Female	42	51		
Age	Over 60 years old	78	76	0.66	0.41
	Under 60 years old	12	14		
Education level	Primary school and below	58	54	1.01	0.87
	Middle school	26	29		
	High school	5	3		
	Junior college education or above	1	4		
Income (¥) (CNY)	Below 1,500	46	37	2.41	0.76
	1,500-2,500	32	34		
	Above 2,500	12	19		
Whether there is health insurance	Yes	83	78	0.45	0.49
	No	7	12		

Table 3. Comparison of positive and negative emotions between CG and IG at admission and discharge.

Time	Comparison indicators	Control group (n = 90)	Intervention group (n = 90)	<i>t</i>	<i>P</i>
At admission	Positive emotions	25.23 ± 9.89	24.89 ± 9.28	0.22	0.81
	Negative emotions	24.93 ± 9.65	24.23 ± 9.82	0.15	0.85
At discharge	Positive emotions	25.41 ± 9.92	29.91 ± 9.67	-0.21	0.01
	Negative emotions	23.81 ± 8.16	20.13 ± 7.83	2.56	0.01

Table 4. Anxiety emotions between CG and IG at admission and discharge.

Time	Anxiety level	Control group (n = 90)	Intervention group (n = 90)	<i>Z</i>	<i>P</i>
At admission	Severe	13	15	-0.51	0.61
	Moderate	36	37		
	Mild	39	35		
	None	2	3		
At discharge	Severe	13	12	-2.05	< 0.05
	Moderate	32	28		
	Mild	43	42		
	None	2	8		

groups were compared (Table 4). The patients with severe anxiety and those without anxiety in the control group remained the same at admission and discharge. The patients with severe anxiety in the IG significantly decreased, while the patients without anxiety increased, ($P < 0.05$). The anxiety scores of the two groups were

shown in Table 5. The CG and IG at admission were insignificant ($P > 0.05$). After receiving traditional care in the CG and predictive care in the IG, they had a significant difference in anxiety scores at discharge ($P < 0.05$) with the anxiety score in the IG decreased significantly ($P < 0.05$).

Table 5. Comparison of anxiety scores at admission and discharge.

Time	Control group (n = 90)	Intervention group (n = 90)	t	P
At admission	15.88 ± 7.05	15.62 ± 7.15	0.25	0.78
At discharge	15.08 ± 6.68	10.15 ± 7.13	2.25	< 0.05

Table 6. Comparison of depression at admission and discharge.

Time	Depression level	Control group (n = 90)	Intervention group (n = 90)	Z	P
At admission	Severe	8	11	-1.01	0.31
	Moderate	29	31		
	Mild	42	36		
	None	11	12		
At discharge	Severe	8	7	-2.35	< 0.05
	Moderate	22	25		
	Mild	50	43		
	None	10	15		

Table 7. Comparison of depression scores at admission and discharge.

Time	Control group (n = 90)	Intervention group (n = 90)	t	P
At admission	14.15±7.65	14.51±7.17	0.02	0.89
At discharge	14.08±6.67	10.18±6.34	2.17	< 0.05

Comparison of depression between two groups at admission and discharge

The patients with different depression levels at admission and discharge in two groups were shown in Table 6. Before nursing, the severe depression patients in the CG and IG were 8 and 11, respectively. After intervention, the severe depression patients in the CG remained unchanged, while the IG decreased by 4 people. Before receiving care, the individuals without depression in both groups were 11 and 12, respectively. After intervention, the individuals without depression in both groups were 10 and 15, respectively. The depression scores before and after intervention were listed in Table 7. The depression scores of the two groups at admission were statistically insignificant ($P > 0.05$). After different nursing methods, a significant difference ($P < 0.05$) were observed in the depression scores at discharge with the

depression score of the IG decreased significantly ($P < 0.05$).

Comparison of HAMD and SDS scores at admission and discharge

The HAMD and SDS scores of two groups at admission and discharge were shown in Table 8. The HAMD scores at admission were statistically insignificant ($P > 0.05$). After receiving care, a significant difference in HAMD scores at discharge was observed ($P < 0.05$). The HAMD score of the IG patients was below the CG patients ($P < 0.05$). In the SDS score, there was no significant difference at admission ($P > 0.05$). At discharge, there was a significant difference in the SDS scores with The SDS scores of the IG lower than that of the CG ($P < 0.05$).

Comparison of SF-36 scores at admission and discharge

Table 8. Comparison of HAMD and SDS scores at admission and discharge.

Scores	Time	Control group	Intervention group	t	P
HAMD	At admission	28.97 ± 3.59	29.34 ± 3.16	0.543	0.679
	At discharge	17.64 ± 4.79	11.26 ± 4.42	5.619	0.006
SDS	At admission	67.81 ± 7.33	67.32 ± 6.09	4.071	0.745
	At discharge	54.93 ± 5.81	42.16 ± 5.34	4.628	0.002

Table 9. SF-36 scores of control group patients before and after intervention.

Contents	Before intervention	After intervention	t	P
Social function	58.16 ± 13.08	68.49 ± 15.22	2.507	0.001
Body pain	59.74 ± 11.37	67.21 ± 13.05	2.864	0.001
Physiology	64.74 ± 13.81	71.55 ± 16.49	3.791	0.004
Physiological function	60.01 ± 15.43	72.05 ± 15.98	3.774	0.006
Emotional function	54.84 ± 15.66	64.56 ± 17.11	3.124	0.005
Mental health	62.57 ± 13.81	72.34 ± 17.58	2.759	0.002
Psychological health	51.04 ± 14.92	64.78 ± 15.47	4.961	0.007
Vitality	47.63 ± 12.85	60.23 ± 14.61	5.018	0.005
Overall health	49.18 ± 13.37	62.49 ± 15.88	4.503	0.004

Table 10. Comparison of sleep quality at admission and discharge.

Score	Time	Control group			Intervention group		
		Scores	t	P	Scores	t	P
PSOI	At admission	14.56 ± 2.03	4.675	0.514	14.14 ± 2.37	3.266	0.602
	At discharge	9.47 ± 1.82	3.926	0.004	5.01 ± 1.58	3.088	0.001

The SF-36 score of the patient includes social function, body pain, physiology, physiological function, emotional function, mental health, psychological health, vitality, and overall health. The SF-36 scores of the CG patients before and after intervention were shown in Table 9. After receiving routine care, the SF-36 score of the control group patients improved, indicating a certain improvement in their negative emotions ($P < 0.05$). The SF-36 scores of patients in IG before and after intervention showed that there were significant differences in social function, body pain, physiology, physiological function, emotional function, mental health, psychological health, vitality, and overall health among patients before and after receiving predictive care ($P < 0.05$) (Figure 1). Compared with the SF-36 scores of CG, the IG patients had higher scores after treatment than the CG patients ($P < 0.05$).

Comparison of sleep quality at admission and discharge

The sleep quality at admission and discharge was shown in Table 10. At admission, the sleep quality scores of patients in CG and IG were insignificant ($P > 0.05$). At discharge, there was a statistically significant difference in sleep quality scores between two groups ($P < 0.05$). The sleep quality score of the IG patients outperformed the CG.

Comparison of discharge satisfaction

The patient's satisfaction of two groups at discharge was displayed in Figure 2. The satisfaction rate in the intervention group reached 96.7%, which outperformed the CG ($P < 0.05$). Meanwhile, the highly satisfied and satisfied patients' numbers in IG exceeded the CG ($P < 0.05$).

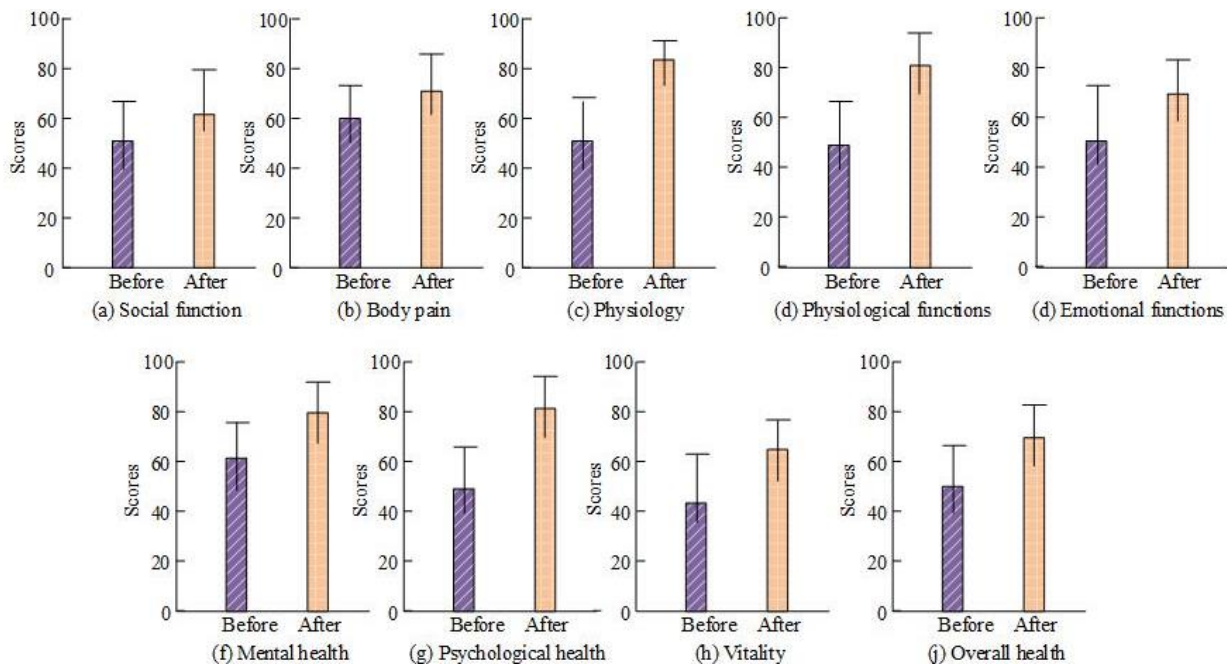


Figure 1. SF-36 scores of two groups at admission and discharge.

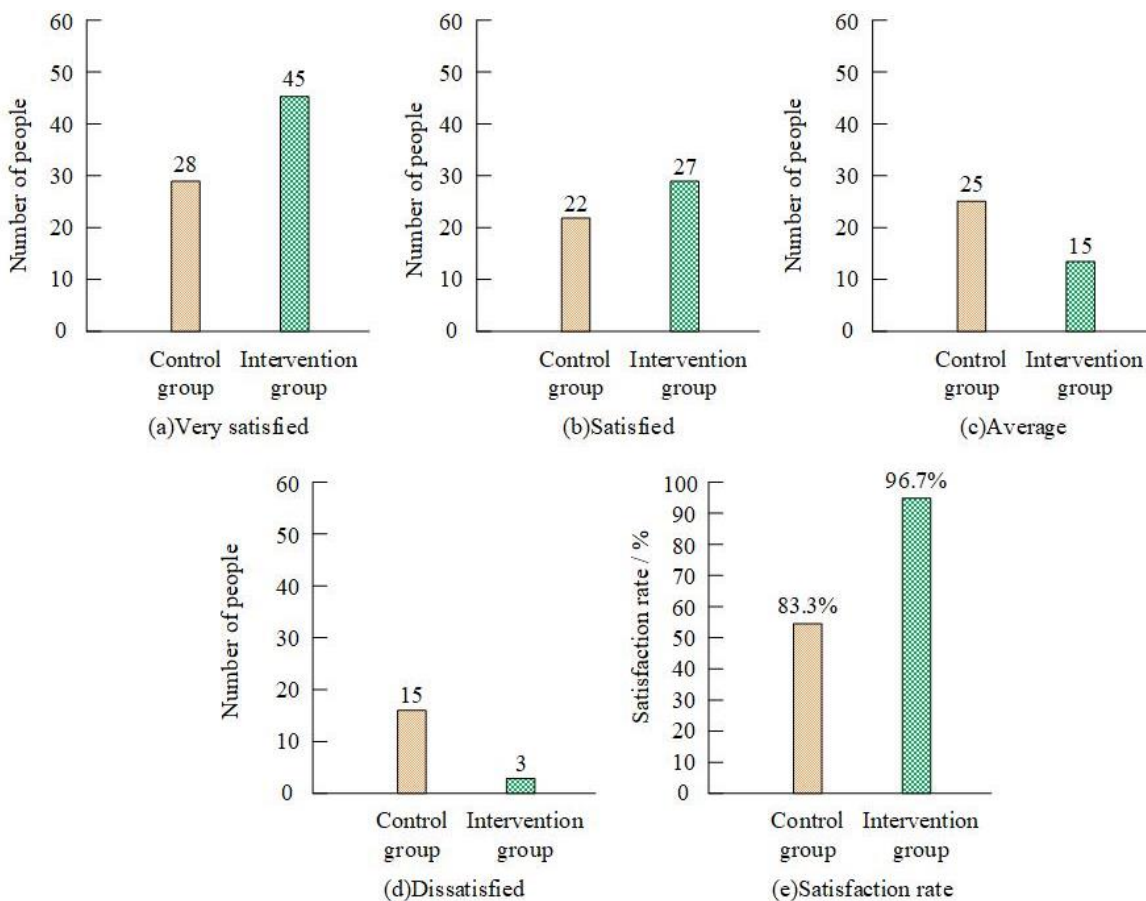


Figure 2. Comparison of discharge satisfaction between two groups.

Discussion

PC, as a preventive nursing method, has played a considerable role in the prevention and treatment of various diseases. As a new nursing model, it has been widely applied in the intervention of clinical disease care. This nursing method dynamically develops corresponding nursing interventions based on the actual condition. Based on clinical experience, potential risks for patients are predicted to provide more targeted and reasonable nursing measures. With the rapid progress of medical level, PC has been vigorously promoted in various hospitals as a nursing method with better nursing effectiveness and stronger professionalism [10]. Patients in cardiology often experience various psychological problems during the treatment process. Among them, psychological anxiety and depression are the most common ones [11]. Timely and effective psychological intervention for patients can effectively improve the recovery effect of intracardiac diseases. This study attempted to use PC as an intervention method to explore the clinical effect of PC in alleviating negative emotions in patients with cardiology.

Currently, research has shown that patients with coronary heart disease experience severe anxiety during the treatment process. Reasonable intervention can effectively improve their prognosis [12]. Another study suggested that some heart disease patients might experience severe depression during treatment, exacerbating the condition [13, 14]. Many antiarrhythmic drugs and vasoactive drugs are often required during the treatment process, stimulating patients' emotions [15, 16]. Therefore, for the care of patients in cardiology, it is not only necessary to observe their onset but also to pay attention to their psychological changes [17]. To explore the advantages of PC, this research investigated the role of PC in alleviating negative emotions in patients with cardiology. The study compared the positive and negative emotional changes of patients in the CG and the IG at admission and discharge and found that the positive and negative emotional scores

of the two groups at admission were statistically insignificant ($P > 0.05$). However, there was a statistical difference in the scores at discharge ($P < 0.05$). The changes in anxiety and depression between the two groups at admission and discharge were also compared and the results showed that, after predictive care, the patients with severe anxiety and depression in the IG decreased, while the patients without anxiety and depression increased. Although the anxiety and depression scores of the two groups at admission were statistically insignificant ($P > 0.05$), the significant difference of anxiety and depression scores at discharge was observed ($P < 0.05$). Patients in the cardiology department were severely affected by their physical and psychological functions due to severe disease stress. The scores of social function, body pain, physiology, physiological function, emotional function, mental health, psychological health, vitality, and overall health indicators of patients before and after receiving predictive care were significantly improved ($P < 0.05$). In PC interventions, patients had a clearer understanding of the disease and daily rehabilitation. At the same time, through appropriate exercise and proper diet, patients' cardiovascular nutrition could be effectively improved, enhancing myocardial function. Therefore, when facing diseases, their stress and negative emotions were alleviated to a certain extent. After nursing intervention, the quality of life and social activity were significantly improved, which proved that patients' negative emotions were alleviated [18, 19]. Compared with the SF-36 scores of the CG, the IG had significantly higher scores after treatment than that of CG patients ($P < 0.05$). At admission, the sleep quality scores of patients in CG and IG were statistically insignificant ($P > 0.05$). At discharge, they had a statistically significant difference in sleep quality scores ($P < 0.05$) with the sleep quality score of the IG patients outperformed the CG patients. After treatment, the negative emotions of patients in the cardiology department were effectively improved. Patients had a more positive attitude when facing diseases. At discharge, the satisfaction rate of

patients in the IG reached 96.7%, significantly higher than that of patients in the CG ($P < 0.05$). Meanwhile, the numbers of highly satisfied and satisfied patients in IG exceeded CG ($P < 0.05$), indicating that PC could better meet the psychological and physical needs. The PC approach focuses on the potential risk factors of patients in advance. Timely intervention and prevention measures are taken to reduce the occurrence of risk factors. The development of the condition is reasonably controlled. Based on achieving good intervention effects, patients' trust in medical staff has increased. They can actively cooperate in completing various examinations and treatments, further improving patients' compliance [20, 21]. The results of this study confirmed that PC can improve the positive and negative emotions of patients in cardiology. Meanwhile, predictive care can effectively reduce the number of patients with severe anxiety and depression and increase the number of patients without anxiety or depression. Comparing the anxiety and depression scores of patients before and after nursing, there was a significant decrease in both anxiety and depression scores after PC. The intervention effect of PC method is significantly superior to traditional conventional intervention methods, improving the quality and effectiveness of nursing. Therefore, PC can be used as a psychological intervention method to improve the patient's psychological state. It can be promoted in the clinical application of cardiology patients.

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