Journal of Clinical and Nursing Research, 2024, Volume 8, Issue 4
http://ojs.bbwpublisher.com/index.php/JCNR
Online ISSN: 2208-3693
Print ISSN: 2208-3685

Analysis of The Impact of Interventional Nursing on The Therapeutic Effect, Negative Emotions, and Quality of Life of Patients Undergoing Cardiovascular and Cerebrovascular Interventional Therapy

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Abstract: *Objective:* To explore the impact of interventional nursing on the therapeutic effect, negative emotions, and quality of life of patients undergoing cardiovascular and cerebrovascular interventional therapy. *Methods:* A total of 106 patients who underwent cardiovascular and cerebrovascular interventional treatment were collected and randomly divided into Group A (control) and Group B (observation), with 53 cases each. Group A received the routine nursing intervention and Group B received the interventional nursing intervention. The clinical efficacy, complications, negative emotions, quality of life, and nursing satisfaction of the two groups of patients were evaluated. *Results:* The total clinical effective rate of Group B (52/98.12%) was higher than that of Group A (45/84.91%) ($\chi^2 = 4.371$, $P < 0.05$). The total incidence of complications in Group B (2/3.78%) was lower than that of Group A (9/16.98%) ($\chi^2 = 4.970$, $P < 0.05$). The self-rating anxiety (SAS) score and self-rating depression (SDS) of Group B were lower than those of Group A ($P < 0.001$). The quality of life of Group B was significantly higher than that of Group A ($P < 0.001$). The nursing satisfaction of group B (51/96.22%) was higher than that of group A (43/81.13%) ($\chi^2 = 6.014$, $P < 0.05$). *Conclusion:* In the care of patients undergoing cardiovascular and cerebrovascular interventional therapy, interventional nursing intervention effectively improved the patient's clinical efficacy, reduced the incidence of complications, reduced negative emotions, improved the quality of life, and increased nursing satisfaction.

Keywords: Interventional nursing; Cardiovascular and cerebrovascular; Interventional treatment; Efficacy

Online publication: April 19, 2024

1. Introduction

In the past few decades, cardiovascular and cerebrovascular diseases have become one of the major diseases that endanger human health, posing significant challenges to global public health efforts. Cardiovascular and cerebrovascular interventional therapy, including the expansion of the vascular lumen and stent implantation,

has become one of the most commonly used treatment techniques for cardiovascular and cerebrovascular diseases. However, although improvements in surgical techniques can significantly improve the patient's physiological conditions, most postoperative patients often experience negative emotions such as anxiety and depression, and experience a significant reduction in quality of life [1]. Interventional nursing, as a whole-person nursing model, is an indispensable part of the cardiovascular and cerebrovascular interventional treatment process. It uses scientific nursing theories and methods to provide patients with a full range of nursing services, such as psychological counseling, preoperative care, and postoperative care. Proper nursing care can help surgical patients improve their recovery outcomes, effectively regulate negative emotions, and improve their quality of life [2]. This article discusses the effectiveness of interventional nursing in patients undergoing cardiovascular and cerebrovascular interventional therapy to provide a strong scientific basis for clinical practice and promote the continuous improvement of interventional therapy and nursing work in this field.

2. Materials and methods

2.1. General information

A total of 106 patients who underwent cardiovascular and cerebrovascular interventional treatment were selected and randomly divided into groups A (control) and B (observation), with 53 cases each. Group A consisted of 32 males and 21 females aged 46–81 years old, with an average age of 62.39 ± 6.69 years. Group B consisted of 28 males and 25 females aged 51–80 years old, with an average age of 63.65 ± 6.88 years. There was no statistical significance in the comparison of basic information of the two groups of patients ($P > 0.05$).

Inclusion criteria: (1) Patients who meet the diagnostic criteria for cardiovascular and cerebrovascular diseases; (2) patients who receive cardiovascular and cerebrovascular interventional treatments, such as percutaneous coronary intervention (PCI) and cerebrovascular interventional surgery; (3) consented; (4) stable physical condition before and after interventional treatment; (4) absence of other serious diseases. Exclusion criteria: (1) Patients with other serious diseases such as malignant tumors, severe liver and kidney insufficiency, and autoimmune diseases; (2) patients with cognitive impairment; (3) unwilling to participate in the study; (4) contraindications to surgery.

2.2. Method

Group A received routine nursing intervention. The patient's condition before surgery was evaluated and their monitor vital signs were monitored during surgery. Drug management, dietary guidance, and health education were also provided after surgery. Group B received interventional nursing intervention, which included the following aspects. During the preoperative preparation, a detailed assessment of the patient's overall health status was conducted, including their vital signs, cardiopulmonary function, and liver and kidney function, to ensure that the patient can tolerate the operation. The purpose, process, and possible consequences of the operation, risks, and postoperative precautions were explained in detail to the patient and their family members to increase the patient's surgical confidence. Necessary preoperative drugs were prepared in advance according to the patient's specific conditions, such as anticoagulants and antihypertensive drugs. During intraoperative care, the patient's vital signs, such as heart rate, blood pressure, and respiration, were continuously monitored and any abnormalities were handled promptly. During postoperative care, the patient's vital signs were monitored and observed for any signs of bleeding, oozing, and infection of the wound. Symptomatic treatment was provided when necessary. Prevention and treatment of complications were carried out by turning bed-ridden patients over regularly to maintain skin cleanliness and prevent complications such as pressure ulcers and deep vein thrombosis. Psychological support and emotional management were provided by having in-

depth communication with patients to help them relieve negative emotions, thereby reducing the burden caused by these emotions. Patients were also taught psychological relaxation techniques and emotion management methods to establish a positive attitude toward treatment. According to the patient's specific situation, a personalized diet and rehabilitation plan was formulated. The name, dosage, drug usage, and possible side effects were explained to the patient in detail to ensure the patient adhered to the doctor's instructions.

2.3. Observation indicators

This study evaluated the clinical efficacy of patients based on their clinical symptoms, evaluated the occurrence of complications in patients based on the incidence of heart failure, arrhythmia, and cardiogenic shock, and evaluated the occurrence of complications using the Self-Rating Anxiety Scale (SAS) and the Self-Rating Depression Scale (SDS). The patient's negative emotions and quality of life were assessed using the Quality-of-Life Measurement Scale Short Form (WHO QOL-BREF), while the patient's satisfaction with care was assessed using a questionnaire.

2.4. Statistical analysis

The SPSS 20.0 software was used to analyze the research data. The measurement data were expressed as mean ± standard deviation and compared using the *t*-test. Count data were expressed as % and analyzed using the chi-squared (χ^2) test. Results were considered statistically significant at $P < 0.05$.

3. Results

3.1. Comparison of clinical efficacy between the two groups of patients

As shown in **Table 1**, the total clinical effective rate of Group B (52/98.12%) was higher than that of Group A (45/84.91%) ($\chi^2 = 4.371$, $P < 0.05$).

Table 1. Comparison of clinical efficacy between the two groups of patients

Clinical efficacy indicators	Group A (n = 53)	Group B (n = 53)	χ^2	P
Markedly effective	25 (47.17%)	45 (84.91%)	-	-
Effective	20 (37.74%)	7 (13.21%)	-	-
Ineffective	8 (15.09%)	1 (1.88%)	-	-
Total efficacy	45 (84.91%)	52 (98.12%)	4.371	0.037

3.2. Comparison of the incidence rate of complications between the two groups of patients

As shown in **Table 2**, the total incidence rate of complications in Group B (2/3.78%) was lower than that of Group A (9/16.98%) ($\chi^2 = 4.970$, $P < 0.05$).

Table 2. Comparison of the incidence rate of complications between the two groups of patients

Complication indicators	Group A (n = 53)	Group B (n = 53)	χ^2	P
Heart failure	3 (5.66%)	1 (1.89%)	-	-
Arrhythmia	4 (7.55%)	1 (1.89%)		-
Cardiogenic shock	2 (3.77%)	0	-	-
Overall incidence	9 (16.98%)	2 (3.78%)	4.970	0.026

3.3. Comparison of negative emotion scores between the two groups of patients

As shown in **Table 3**, after the intervention, the SAS and SDS scores of the two groups of patients both decreased, with a greater decrease observed for Group B than Group A ($P < 0.001$).

Table 3. Comparison of negative emotion scores between the two groups of patients

Indicator	Time	Group A ($n = 53$)	Group B ($n = 53$)	t	P
SAS score	Before intervention	56.38 ± 4.39	56.26 ± 4.47	0.139	0.889
	After intervention	45.87 ± 3.65	38.67 ± 3.52	10.337	0.000
SDS score	Before intervention	57.25 ± 4.51	57.67 ± 4.38	0.486	0.628
	After intervention	46.88 ± 3.41	39.32 ± 3.19	11.787	0.000

3.4. Comparison of quality-of-life scores between the two groups of patients

As shown in Table 4, the quality-of-life score in Group B was significantly higher than that of Group A ($P < 0.001$).

Table 4. Comparison of quality-of-life scores between the two groups of patients

Indicator	Time	Group A ($n = 53$)	Group B ($n = 53$)	t	P
Quality of life	Before intervention	11.39 ± 3.27	11.48 ± 3.32	0.141	0.889
	After intervention	17.55 ± 5.45	23.78 ± 5.59	5.810	0.000
Self-feeling	Before intervention	17.67 ± 5.26	17.75 ± 5.31	0.078	0.938
	After intervention	26.78 ± 5.69	33.17 ± 5.77	5.741	0.000
Daily life	Before intervention	21.73 ± 6.48	21.58 ± 6.49	0.119	0.905
	After intervention	29.92 ± 8.57	35.17 ± 8.76	3.119	0.002
Health status	Before intervention	9.47 ± 3.29	9.45 ± 3.17	0.032	0.975
	After intervention	13.31 ± 4.51	17.57 ± 4.79	4.714	0.000

3.5. Comparison of satisfaction with nursing care between the two groups

As shown in **Table 5**, the nursing satisfaction in Group B (51/96.22%) was higher than that of Group A (43/81.13%) ($\chi^2 = 6.014$, $P < 0.05$).

Table 5. Comparison of satisfaction with nursing care between the two groups of patients

Satisfaction indicator	Group A ($n = 53$)	Group B ($n = 53$)	χ^2	P
Very satisfied	36 (67.92%)	43 (81.13%)	-	-
Generally satisfied	7 (13.21%)	8 (15.09%)	-	-
Not satisfied	10 (18.87%)	2 (3.78%)	-	-
Overall satisfaction rate	43 (81.13%)	51 (96.22%)	6.014	0.014

4. Discussion

Cardiovascular and cerebrovascular diseases have been gaining attention as growing threats to human health. Such diseases mainly involve lesions of the heart and brain blood vessels, including but not limited to coronary heart disease, stroke, etc. The common feature is that they all have a major impact on the whole body's health

by affecting the cardiovascular and cerebrovascular systems. Cardiovascular and cerebrovascular diseases are related to unhealthy living habits, environmental factors, genetics, and other factors. Timely interventional treatment is one of the important means of dealing with such diseases. Advanced medical technology is normally used to diagnose and treat diseased areas accurately through non-thoracotomy and minimally invasive methods. Interventional treatment has the advantages of reducing trauma, fast recovery, and ideal outcomes. It can effectively relieve patients' pain and improve their quality of life [3,4]. With the continuous advancement of medical technology, the application of cardiovascular and cerebrovascular interventional treatment is also expanding, offering promising news to affected patients.

Interventional nursing intervention is a proactive nursing strategy that aims to positively impact the patient's disease through planned and purposeful interventions, thereby improving the patient's health status, enhancing treatment effects, and enhancing their quality of life. This strategy covers basic nursing work, such as observing changes in the patient's condition and providing drug treatment, but also involves comprehensive attention and support for patients' psychology, health education, and other aspects.

Interventional nursing intervention can significantly improve the clinical efficacy of patients. Nurses can more accurately understand the patient's disease status and treatment needs and develop a personalized care plan. These plans ensure that patients receive adequate support and care, thereby accelerating the recovery process of the disease and improving clinical treatment outcomes. In this study, Group B, who received interventional nursing intervention, had a higher total clinical effective rate (52/98.12%) as compared to Group A, who received routine care (45/84.91%) ($P < 0.05$). Secondly, interventional nursing intervention can help reduce the incidence of complications. During cardiovascular and cerebrovascular interventional treatment, patients may suffer from various complications, such as bleeding, infection, and subcutaneous hematoma [5,6]. Implementing interventional nursing intervention can promptly detect and deal with the potential risks of these complications through comprehensive care and monitoring, thereby effectively reducing their incidence and ensuring patient safety. This was consistent with the conclusion in this study where the total incidence of complications in Group B (2/3.78%) was significantly lower than that in Group A (9/16.98%) ($P < 0.05$). At the same time, interventional nursing intervention can reduce patients' negative emotions. Cardiovascular and cerebrovascular diseases often bring huge psychological pressure and negative emotions to patients, such as anxiety and depression. Psychological support and care in interventional nursing intervention can help patients alleviate these negative emotions and increase their confidence in treatment [7].

After the intervention, the SAS and SDS scores of both groups of patients decreased, with a greater decrease observed in Group B than in Group A. Interventional nursing interventions also play an important role in improving the patient's quality of life. Through comprehensive nursing and rehabilitation guidance, interventional nursing intervention can help patients improve their living habits, self-care abilities, and social skills, thereby comprehensively improving their quality of life. In this study, the scores of various quality-of-life indicators in Group B were significantly higher than those in Group A. Finally, interventional nursing interventions can increase patient satisfaction with care. By providing personalized, comprehensive, and considerate nursing services, interventional nursing intervention can provide professional and high-quality care, thereby enhancing the patient's trust and satisfaction with the provided medical services. This helps establish a good doctor-patient relationship and promotes the hospital's reputation. Many studies have also proven the advantages of interventional nursing intervention in caring for patients undergoing cardiovascular and cerebrovascular interventional treatments [8–10].

5. Conclusion

In the care of patients undergoing cardiovascular and cerebrovascular interventional therapy, interventional nursing intervention effectively improved the patient's clinical efficacy, reduced the incidence of complications, reduced negative emotions, improved their quality of life, and increased nursing satisfaction.

Disclosure statement

The author declares no conflict of interest.

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