



Study of the Effect of Continuous Improvement of Central Venous Catheter Nursing Quality on Patients with Central Venous Catheter¹

Hexu Huang*, Caijuan Wen, Lichang Qiu

Shekou People's Hospital, Shenzhen, Guangdong, China.

<https://oajnr.damray.com/>

OPEN ACCESS

DOI: 10.26855/oajnr.2023.12.005

Received: December 30, 2023

Accepted: January 29, 2024

Published: February 27, 2024

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Abstract

Objective: This study aims to investigate the impact of continuous improvement in the nursing quality of central venous catheters on patients undergoing central venous catheterization. **Methods:** A total of 88 patients who underwent central venous catheterization at our hospital from July 2018 to July 2020 were randomly assigned to either the study group (n=44) or the reference group (n=44). The reference group received standard nursing care, while the study group received nursing care with a focus on continuous improvement of central venous catheter management. The clinical nursing outcomes of the two groups were compared. **Results:** Comparative analysis revealed that the study group demonstrated significantly higher nursing satisfaction, one-time puncture success rate, and lower post-operative complication rate compared to the reference group, with statistically significant differences ($P < 0.05$). **Conclusion:** Continuous improvement in central venous catheter nursing significantly benefits patients undergoing central venous catheterization, promoting patient recovery and enhancing nursing satisfaction. Its widespread adoption in clinical practice is highly recommended.

Keywords

Continuous improvement of central venous catheter nursing, nursing quality, application effect

The use of central venous catheters is a prevalent method for clinical infusion treatment. In comparison to alternative treatments, it is characterized by its simplicity of operation, high safety factor, and minimal patient discomfort. Nevertheless, the improper placement or irregular maintenance of catheters by medical staff during the treatment process may lead to prolonged catheterization time and result in complications such as infection, catheter blockage, and decannulation. These issues can significantly impact the patient's recovery. Therefore, the implementation of an effective nursing program is crucial for patient care during treatment [1].

¹ The Chinese version of this paper has been published in the International Journal of Nursing Research. This version is a translated version and has been authorized and approved for publication by two publishers.

1. General information and methods

1.1 General information

A total of 48 patients who underwent central venous catheterization at our hospital from July 2018 to July 2020 were selected as the study subjects. Upon admission, patients were assigned numbers, with odd numbers designated as the study group and even numbers as the control group. In the study group, there were 12 male and 12 female patients, with an age range of 26 to 69 years and an average age of (43.1±1.3) years. In the control group, there were 11 male and 13 female patients, with an age range of 26 to 66 years and an average age of (44.3±1.6) years. There were no significant differences in general data such as age and gender between the two groups in this study ($P>0.05$).

1.2 Method

Patients in the reference group received routine care, including routine catheterization. The nursing staff informed the patients of the matters they needed to pay attention to and encouraged the patients to go to the hospital for diagnosis in a timely manner when they discovered any unexpected physical condition.

The research team was given continuous quality improvement care, with the specific contents as follows: (1) Establish a continuous improvement central venous catheter care team, select medical staff with strong comprehensive capabilities, and conduct professional training on operating techniques to ensure that team members are proficient in the key points of care, and After the training is completed, a targeted assessment will be conducted, and only team members who pass the assessment can carry out practical work. (2) Psychological care: Patients may be attacked by diseases all year round, and may have more serious fear and anxiety about diseases. Nursing staff need to actively communicate with patients before examination, gain an in-depth understanding of their inner thoughts, and explain to them the reasons for successful treatment. Cases can enhance patients' self-confidence and enthusiasm for cooperating with treatment [2]. (3) Health care: Guide patients to establish good living habits, formulate good work and rest plans for patients, ensure patients have adequate sleep, and guide patients and their families on healthy diets and precautions to ensure patients' nutritional intake. (4) Lifecare: Since most patients do not have a deep understanding of their own diseases and lack some knowledge, nursing staff should popularize knowledge about the disease for patients and their families, understand the patient's eating habits and rest habits, and conduct appropriate consultations with the patients. Communication and adjustment, while appropriately increasing the patient's amount of exercise, can keep the patient's life at a healthy level and contribute to the patient's recovery [3]. (5) Continuous improvement of central venous catheter care: The center of care is to serve patients. Nursing staff need to explain daily home care to patients and their families, ensure that patients and their families understand the relevant content in the maintenance manual, and instruct family members to take every step of the patient's care seriously. During the maintenance time, demonstrate the correct method for them, and inform patients and their families to return to the hospital for treatment in a timely manner if symptoms such as blood return in the pipeline, loose film, local skin redness, and pain at the puncture site occur; use videos and on-site operations to train team members. Learn and improve the team level (the improved part), provide patients with better services by providing services, discovering problems, and solving problems. When patients have adverse reactions during the examination, certain measures should be taken to provide better services to patients. Patients alleviate adverse reactions.

1.3 Evaluation indicators

A questionnaire was used to investigate the nursing satisfaction of the two groups of patients. The nursing satisfaction can be divided into three levels: very satisfied, generally satisfied, and dissatisfied, and the data of the two groups were analyzed.

Observe and record the first puncture success rate of the two groups of patients, and analyze the data of the two groups. The postoperative complications of the two groups of patients were observed and recorded, and the data of the two groups were analyzed.

1.4 Statistical processing

This study used SPSS23.0 software to test the data, used χ^2 to compare the count data, and expressed it as rate (%). If $P<0.05$, the difference is obvious and statistically significant.

2. Results

2.1 Nursing satisfaction rate

After treatment, 12 cases in the reference group were very satisfied, 15 cases were generally satisfied, and 17 cases

were dissatisfied. The satisfaction rate was 61.4% (27/44). In the study group, 20 cases were very satisfied, 21 cases were generally satisfied, and 3 cases were dissatisfied. The satisfaction rate was 93.1% (41/44). The comparison results of the satisfaction rates of the two groups of patients were $\chi^2=10.039$, $P=0.002$, and there was a significant difference ($P<0.05$).

2.2 One-time puncture success rate

After nursing care and data analysis, the first puncture success rate of the patients in the study group was significantly better than that of the reference group, and the difference was statistically significant ($P<0.05$). The comparison of the first puncture success rate of the two groups of patients is shown in Table 1.

Table 1. Comparison of clinical treatment effects between two groups of patients [n (%)]

Group	n	Successful puncture on the first attempt	Success rate of one-time puncture
Research group	44	34	77.3
Reference group	44	27	61.4
χ^2	-	-	5.984
P	-	-	0.014

2.3 Incidence of postoperative complications

After nursing and data analysis, there were 2 cases of catheter obstruction, 2 cases of puncture point bleeding, 6 cases of catheter slippage, and 3 cases of infection in the reference group. The complication rate was 29.5% (13/44). In the study group, there was 1 case of catheter obstruction and puncture point bleeding. There was 1 case of bleeding, 1 case of catheter slippage, and 1 case of infection. The complication rate was 13.7% (6/44). The comparison of the complication rates between the two groups of patients was $\chi^2=7.459$, $P=0.006$, and there was a significant difference ($P<0.05$).

3. Conclusion

Central venous catheterization can be used as a fixed channel for long-term infusion and is widely used for patients who require repeated infusion. Compared with traditional treatment methods, it has the advantages of fewer punctures and longer catheterization time and causes less harm to patients. However, if effective care is not taken for the patient during central venous catheterization treatment, the patient may develop complications. At the same time, if the patient does not have enough understanding of the precautions for central venous catheterization treatment during the treatment period, the catheter may slip and may occur multiple times. Phenomena such as puncture will have a certain impact on the patient's recovery [4]. Therefore, effective care of patients receiving central venous catheters is critical.

In recent years, with the improvement of people's quality of life, routine nursing can no longer meet the nursing needs of patients. The establishment of a continuous improvement central venous catheter nursing team can effectively improve patients' nursing satisfaction. Continuously improving central venous catheter care is a new type of care plan. Compared with previous routine care, it pays more attention to detailed care, adopts better care for patients, explains relevant content to patients and their families, and ensures that patients and their families understand the importance of on-time maintenance. Those problems that arise need to be returned to the hospital for emergency treatment. Pay attention to home care, complement each other with treatment, and form close cooperation and collaboration. The focus is to continuously improve the quality of care, provide patients with better care, and improve patients' lives. quality. At the same time, this nursing plan further improves the safety of central venous catheter treatment and improves patient care satisfaction [5].

In this study in our hospital, patients in the research group adopted continuously improved central venous catheter care. Compared with the reference group, their nursing satisfaction, one-time puncture success rate, and postoperative complication rate were significantly better than those in the reference group, and the differences were statistically significant ($P<0.05$), indicating that continuous improvement of central venous catheter care has better clinical care effects for patients receiving central venous catheters, can promote patient recovery, and increase patient satisfaction, which is worthy of further clinical research. promotion and application.

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