

The Impact of Patient Education on the Nursing Care of Perioperative Patients in the Interventional Catheterization Room

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Abstract: *Objective:* To explore and analyze the effect of implementing a precise education model on the nursing care of perioperative patients in the interventional catheterization room. *Methods:* We selected 70 patients who were going to undergo surgical intervention in our hospital from August 2020 to December 2022 as the subjects for this study through random sampling. The patients were divided into a control group and an observation group, with 35 cases in each group. The control group underwent basic nursing intervention, and the observation group was given precise patient education. The nursing effects of both groups were observed. *Results:* After the intervention, all compliance indicators of the observation group were better than those of the control group ($P < 0.05$). Besides, the incidence of complications in the observation group (2.86%) was lower than that of the control group (17.14%) with $P < 0.05$. Furthermore, the patient satisfaction of the observation group (97.14%) was higher than that of the control group (82.86%), with $P < 0.05$. *Conclusion:* A precise propaganda and education model facilitates the nursing of perioperative patients in the interventional catheterization room. Therefore, this practice should be popularized.

Keywords: Patient education model; Interventional catheterization room; Perioperative period; Nursing effect

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1. Introduction

The interventional catheterization room is where patients receive interventional treatments, including introducing special catheters or guide wires into the human body under the guidance of medical imaging equipment to diagnose or locally treat lesions ^[1]. Surgical interventions mainly include endovascular intervention and non-endovascular intervention. Endovascular intervention includes arterial embolization and angioplasty. Non-endovascular intervention includes percutaneous tumor biopsy and intervertebral disc puncture decompression. Since interventional surgeries are high-risk procedures, patients are prone to many postoperative complications, which will affect the patient's quality of life post-surgery ^[2]. At the same time, most patients are unfamiliar with interventional catheterization rooms and interventional surgical treatments. Besides, they may refuse to cooperate with the treatment because they are in pain. Therefore, patients who

are undergoing surgical intervention should receive intensive care with precise propaganda and education to improve their compliance, which in turn increases the success rate of the surgery. In this study, patients who were undergoing surgical intervention to explore the feasibility of applying a precise patient education model.

2. Materials and methods

2.1. Materials

We selected 70 patients who were going to undergo surgical intervention in our hospital from August 2020 to December 2022 as the subjects for this study through random sampling. The patients were divided into a control group and an observation group, with 35 cases in each group. The control group underwent basic nursing intervention, and the patients in the observation group were given precise education on their disease. Among the patients in the control group, there were 18 males and 17 females. The oldest patient was 70 years old, and the youngest patient was 40 years old. The average age of the patients was 53.67 ± 1.22 years old. The longest course of disease was 17 days, the shortest was 7 days, and the average course of disease was 10.67 ± 1.22 days. Among the patients in the observation group, there were 19 males and 16 females. The oldest was 71 years old, and the youngest was 41 years old, and their average age was 53.56 ± 1.21 years old. The longest disease duration was 16 days and the shortest disease duration was 7 days averaging at 10.93 ± 1.18 days. There was age, gender, disease duration, and other general information between the two groups of patients ($P > 0.05$).

Inclusion criteria: (1) met the clinical indications for surgical intervention^[3], (2) willing to participate in the research. Exclusion criteria: (1) history of coagulation disorders, (2) history of severe liver and kidney disease, (3) history of cardiovascular and cerebrovascular diseases, (4) malignant tumor diseases, (5) severe neurological diseases, (6) incomplete data.

2.2. Method

2.2.1. Control group

The patients in the control group were given basic nursing intervention. The patients were provided with basic preoperative guidance, preoperative management, and basic preoperative education.

2.2.2. Observation group

(1) Preoperative propaganda and education

Firstly, a comprehensive patient assessment, including physical, psychological, and living conditions, was conducted before surgery. Targeted disease education and psychological care were then provided to the patient. Starting from the type of surgical intervention, patients were introduced to specialized treatments such as coronary artery, pacemaker, electrophysiology, peripheral blood vessels, tumors, and neurological interventions^[4]. Specialized disease-related propaganda and education materials are also distributed. These materials contain explanations of their disease in the form of texts and pictures, which would enhance their understanding of the disease. At the same time, educational videos were produced to explain pre-coronary surgery preparation, intra-operative cooperation, postoperative indwelling catheter, etc. Through the videos, the process of surgical intervention can be understood more intuitively. The videos were played in a loop in the surgery waiting area and also posted on the hospital's public account so that the patients could have a better understanding of the surgeries they were about to undergo, thereby improving patient compliance and surgical tolerance. Through a comprehensive assessment of the patients' condition, psychological situation, and family situation, active psychological counseling can be given so that they can maintain a positive attitude

toward subsequent surgical interventions, thus increasing their compliance. Furthermore, sufficient preoperative preparations were made since the patients would need to immobilize their limbs after surgery. The patients were guided on urinating and defecating in bed. The patients also practiced inducing micturition reflexes to overcome postoperative urination difficulties.

(2) Intraoperative care

The temperature and humidity of the operating room were adjusted upon entering it. The patient was then laid in a comfortable position for the procedure. At the same time, the nursing staff helped patients relax by playing soft music to divert their attention and make them comfortable.

(3) Postoperative care

After the surgery was completed, the changes in the patient's vital signs were closely monitored, the condition of the puncture site was observed, and a pressure bandage was applied to the puncture site to prevent puncture point hematoma. The limb on the puncture site was immobilized after surgery. Patients with femoral artery punctures needed to stay in bed for 24 hours, and the limb of the surgical site could not be bent. They were immobilized in a functional position for 24 hours, and the puncture site was compressed with a sandbag for 6 hours^[5]. During this period, the nursing staff observed for bleeding at the puncture site and blood circulation in the distal limbs. On the second day after the operation, postoperative visits were conducted and the medical staff communicated with the patients with a focus on recovering self-care abilities. During the postoperative visit, patients were informed of the precautions that need to be taken after the surgery, puncture point care, physical care, and rehabilitation care to prevent complications. At the same time, attention needs to be paid to the patient's psychological emotions after surgery, as some patients still have great anxiety after surgery. The patients were guided on the ways to improve their mood based on their psychological state and postoperative recovery. Besides, the nurses shared successful cases of surgery and postoperative quality of life to improve their confidence in the treatment, thus improving their compliance.

2.3. Observation indicators

2.3.1. Patient compliance

A self-developed compliance score sheet was to evaluate four indicators: disease awareness, treatment compliance, dietary regularity, and psychological compliance, with a total of 100 points each. A higher score indicates better patient compliance.

2.3.2. Complication rate

The complication rates of the two groups were compared, including increased intraoperative blood pressure, local hematoma, and difficulty in urinating.

2.3.3. Patient satisfaction

The patient satisfaction was evaluated using a self-made scale and was denoted in three ways: very satisfied (> 90 points), satisfied (80–90 points), and dissatisfied (< 80 points).

2.4. Statistical analysis

SPSS20.0 software was used to process the data. The measurement data were expressed as mean \pm standard deviation and compared using a *t*-test. Count data were expressed as *n*(%) and compared using a χ^2 test. *P* < 0.05 indicates statistical significance.

3. Results

3.1. Patient compliance

The patient compliance of the observation group was better than that of the control group, and the difference was statistically significant ($P < 0.05$). Further details are shown in **Table 1**.

Table 1. Comparison of patient compliance between the two groups (mean \pm standard deviation)

Group name	Number of cases (<i>n</i>)	Disease awareness	Treatment compliance	Psychological compliance	Diet regularity
Observation group	35	90.07 \pm 2.34	90.34 \pm 2.11	91.23 \pm 2.44	91.45 \pm 2.15
Control group	35	82.12 \pm 2.12	83.16 \pm 2.34	82.34 \pm 2.41	82.67 \pm 2.35
χ^2 -value	-	14.895	13.481	15.336	16.308
<i>t</i> -value	-	0.000	0.000	0.000	0.000

3.2. Complication rate

The observation group had a lower complication rate compared to the control group, and the difference was statistically significant ($P < 0.05$). Further details are shown in **Table 2**.

Table 2. Comparison of complication rate between the two groups [n (%)]

Group name	Number of cases (<i>n</i>)	Increased blood pressure during surgery	Puncture site hematoma	Difficulty urinating	Complication rate
Observation group	35	0 (0.00)	1 (2.86)	0 (0.00)	1 (2.86)
Control group	35	2 (5.71)	3(8.57)	1 (2.86)	6 (17.14)
χ^2 -value	-	-	-	-	3.968
<i>P</i> -value	-	-	-	-	0.046

3.3. Patient satisfaction

The observation group had higher patient satisfaction compared to the control group, and the difference was statistically significant ($P < 0.05$). Further details are shown in **Table 3**.

Table 3. Comparison of patient satisfaction between the two groups (*n* [%])

Group name	Number of cases (<i>n</i>)	Very satisfied	Satisfied	Dissatisfied	Satisfaction
Observation group	35	20 (57.14)	14 (40.00)	1 (2.86)	34 (97.14)
Control group	35	15 (42.86)	14 (40.00)	6 (17.14)	29 (82.86)
χ^2 -value	-	-	-	-	3.968
<i>P</i> -value	-	-	-	-	0.046

4. Discussion

Surgical intervention comes with certain risks. However, it can minimize the side effects that come with drug use^[6]. Besides, its advantages include less damage to the skin, faster recovery, and better results. However, most patients lack understanding of their diagnosis and surgical procedures, resulting in low compliance^[7]. Therefore, a patient education model was implemented for patients who were about to undergo surgical intervention in this study. The education model involves distributing brochures and playing videos to improve their understanding of

the disease and treatment to improve their compliance ^[8,9]. The patients were also guided post-surgery through postoperative visits. At this stage, the patients were educated on postoperative disease care, daily diet, and lifestyle care methods to improve patients' postoperative compliance and quality of life.

The results of this study indicate that comprehensive patient education can significantly improve surgical outcomes. This is because it improves their understanding of the disease and surgical plans, resulting in better treatment compliance ^[10]. Besides, it can reduce postoperative complications and increase patient satisfaction. Therefore, this practice should be popularized.

5. Conclusion

In summary, precise patient education for patients undergoing surgical intervention can improve patient compliance and satisfaction, reduce postoperative complications, and ensure high-quality nursing care. Therefore, it should be adopted in clinical practice.

Disclosure statement

The authors declare no conflict of interest.

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