

Application Effect of Inquiry-Based Learning Concept in Nursing Teaching of Cardiac Surgery Operating Room

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Abstract: **Objective:** To observe the role of implementing inquiry-based learning concept in nursing teaching of cardiac surgery operating room. **Methods:** A total of 46 intern nurses in the cardiac surgery operating room of our hospital from January to December 2024 were selected as subjects and randomly divided into two groups. One group received conventional nursing teaching (23 cases, control group), and the other group adopted inquiry-based learning concept for teaching (23 cases, observation group). The teaching effects of the two groups were observed. **Results:** The assessment scores of the observation group were higher than those of the control group ($P<0.05$). The teaching satisfaction of the observation group was higher than that of the control group ($P<0.05$). **Conclusion:** Applying the inquiry-based learning concept in nursing teaching of cardiac surgery can improve teaching effectiveness and increase interns' satisfaction with teaching.

Keywords: Inquiry-Based Learning Concept; Cardiac Surgery; Operating Room Nursing Teaching

1. Introduction

Cardiac surgery is one of the most important departments in hospitals. For patients requiring surgical treatment, the operations are relatively complex and place extremely high demands on the professional technical capabilities of surgeons and the nursing capabilities of operating room nurses. In nursing teaching for cardiac surgery operating rooms, to help intern nurses more accurately master and apply various nursing knowledge, it is necessary to scientifically select teaching methods according to the characteristics of nursing work in this field^[1-2]. The inquiry-based learning concept has gradually been applied in

clinical nursing teaching, focusing on improving intern nurses' inquiry ability and self-learning ability to facilitate their mastery of various nursing knowledge. This study mainly observed the application effect of the inquiry-based learning concept in nursing teaching of cardiac surgery operating rooms.

2. Materials and Methods

2.1 General Information

Forty-six intern nurses in the cardiac surgery operating room of our hospital from January to December 2024 were selected as subjects and randomly divided into two groups by random sampling. One group received conventional nursing teaching (23 cases, control group), and the other group adopted inquiry-based learning concept for teaching (23 cases, observation group). All subjects in the control group were female, aged 20-24 years, with an average age of (22.02 ± 1.02) years. The observation group included 1 male and 22 females, aged 19-23 years, with an average age of (22.01 ± 1.22) years. There was no significant difference in basic data between the two groups ($P>0.05$).

2.2 Methods

In the control group, conventional nursing teaching methods were used. Teaching nurses determined daily teaching content based on the curriculum syllabus, selected typical surgical cases to provide targeted explanations to intern nurses, including nursing theoretical knowledge and operating room nursing skills. Regular assessments were conducted to understand interns' mastery of knowledge.

In the observation group, the inquiry-based learning concept was applied:

(1) Posing inquiry questions and guiding independent exploration: Before formal teaching of relevant nursing knowledge, teaching nurses posed inquiry questions based on the teaching content, guiding intern nurses

to independently learn and solve problems by consulting materials before class. Group discussions were held to analyze each question and formulate corresponding nursing measures. Before formal class, each group was encouraged to share their exploration results, enabling teachers to promptly grasp interns' preliminary understanding of the knowledge and clarify the focus of course explanations.

(2) Timely simulation practice: After theoretical knowledge teaching, intern nurses were guided to carry out simulation practice. Interns were instructed to record difficult operation contents in daily learning. Teaching nurses led interns to conduct on-site simulation operations in the operating room once a week. Teaching teachers first demonstrated the principles of each operation and matters needing attention during implementation, then guided intern nurses to practice, and promptly corrected incorrect operation links to help interns more accurately master nursing skills.

(3) Self-inspection diary: Interns were required to accurately record problems encountered in daily learning and exploration, regularly summarize issues in the implementation of various nursing skills, and receive targeted answers from teaching teachers. Experiences or insights in theoretical learning or practical operations also needed to be summarized and

recorded in a timely manner.

2.3 Observation Indicators

(1) Assessment scores: Theoretical knowledge scores and clinical practical operation abilities of interns in both groups were assessed before and after teaching, using a 100-point system.

(2) Teaching satisfaction: After completing nursing internships, interns in both groups were guided to evaluate their satisfaction with nursing teaching in the cardiac surgery operating room, divided into three levels: satisfied, relatively satisfied, and dissatisfied.

2.4 Statistical Methods

SPSS 26.0 was used to analyze relevant data in the study. Count data were expressed as percentages (%) and analyzed using the chi-square test. Measurement data were expressed as mean \pm standard deviation and analyzed using the t-test. $P < 0.05$ indicated statistically significant differences.

3. Result

3.1 Comparison of Assessment Scores

The assessment scores of the observation group were higher than those of the control group ($P < 0.05$), as shown in Table 1.

Table 1. Comparison of Assessment Scores Between Two Groups ($\bar{x} \pm s$)

Group	Number of Cases	Theoretical Knowledge Score		Clinical Practical Operation Ability	
		Before Teaching	After Teaching	Before Teaching	After Teaching
Observation Group	23	80.45 \pm 1.52	90.34 \pm 2.15	82.45 \pm 2.05	91.34 \pm 2.45
Control Group	23	81.35 \pm 1.65	84.36 \pm 2.22	82.65 \pm 2.11	85.06 \pm 1.98
t	-	1.586	23.142	1.785	23.045
p	-	0.615	0.001	0.515	0.001

group was higher than that of the control group ($P < 0.05$), as shown in Table 2.

3.2 Comparison of Teaching Satisfaction

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Table 2. Comparison of Teaching Satisfaction [n, (%)]

Group	Number of Cases	Satisfied	Relatively Satisfied	Dissatisfied	Satisfaction Rate
Observation Group	23	15(65.22)	8(34.78)	0(0.00)	23(100.00)
Control Group	23	12(52.17)	8(34.78)	3(13.05)	20(86.95)
χ^2	-	-	-	-	23.045
p	-	-	-	-	0.001

4. Discussion

The diseases of patients treated in the cardiac surgery operating room are mostly complex, with relatively high surgical difficulty and long operation time. In nursing teaching for intern nurses in the cardiac surgery operating room,

to enable these interns to more accurately and efficiently master various nursing knowledge^[3-4], it is necessary to adopt more effective teaching methods in actual nursing teaching. In conventional teaching, teaching nurses carry out teaching based on the curriculum syllabus, which can help intern nurses master nursing

skills, but practical experience shows certain limitations in overall teaching effectiveness.

Applying the inquiry-based learning concept in nursing teaching, teaching teachers design relevant inquiry questions based on the content to be explained and guide intern nurses to independently learn relevant nursing knowledge, which can increase interns' learning initiative and help them preliminarily master knowledge and clarify learning difficulties during the inquiry process^[5]. Teaching teachers can provide targeted explanations based on interns' self-learning conditions, helping them more accurately master nursing knowledge. Combined with simulation practice and regular summarization, it helps deepen interns' mastery of knowledge. In this study, the observation group adopted inquiry-based learning concept teaching, and the results showed that this teaching model can improve the teaching effect for intern nurses in the cardiac surgery operating room and increase teaching satisfaction.

In conclusion, the inquiry-based learning concept can be applied in nursing teaching of the cardiac surgery operating room to comprehensively ensure the teaching effect for these intern nurses.

References

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