

# Application of Progressive Case Teaching Combined with Scenario Simulation in Comprehensive Practical Teaching of Nursing in Higher Vocational Colleges

Na Xu\*

Zhongshan Vocational College, Nanjing 210000, Jiangsu Province, China

\*Corresponding author: Na Xu, xu\_na\_1990@163.com

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**Abstract:** *Objective:* To explore the application of progressive case teaching combined with scenario simulation in the comprehensive practical teaching of nursing in higher vocational colleges. *Methods:* From September 2023 to November 2023, two groups of students were selected as the research objects. 36 students in the control group adopted the conventional nursing comprehensive practical training teaching method. Based on the conventional teaching method, 37 students in the observation group implemented the progressive case teaching combined with the scenario simulation method. The theoretical and operational test scores of the two groups of students were assessed and compared, and the teaching satisfaction and the score of critical thinking skills of the two groups of students were compared. *Results:* After the implementation of progressive case teaching combined with the scenario simulation method, the theoretical and operational test scores of students in the observation group were significantly better than those in the control group, with statistical significance ( $P < 0.05$ ). The teaching satisfaction of the observation group was significantly higher than that of the control group ( $P < 0.05$ ). The score of critical thinking skills of students in the observation group was significantly higher than that in the control group ( $P < 0.05$ ). *Conclusion:* The application of progressive case teaching combined with scenario simulation in the teaching of nursing comprehensive practical training of higher vocational can effectively improve students' theoretical and operational exam scores, promote the cultivation of their critical thinking skills, improve teaching satisfaction, and effectively enhance the quality of talent training for high-quality nursing majors.

**Keywords:** Progressive case teaching; Scenario simulation; Vocational nursing; Nursing comprehensive practical training

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## 1. Introduction

Nursing comprehensive practical training course is a practical course in the nursing specialty, the purpose is to strengthen the training of nursing operation skills and clinical practice skills, so that nursing students can better adapt to the change of roles, and to clinical practice and future work<sup>[1,2]</sup>. The traditional nursing

comprehensive practical training mainly reviews theoretical knowledge and trains individual nursing skills in the form of PowerPoint teaching, ignoring the cultivation of students' comprehensive practical skills. Students only have scattered theoretical knowledge and independent operational skills. As a result, students lack the ability to comprehensively analyze existing or potential nursing problems and implement holistic nursing in the practice process<sup>[3]</sup>. However, clinical operation does not exist independently but is closely related to the patient's condition. Traditional nursing comprehensive practical training methods are difficult to combine with clinical cases, and there is a problem of disconnection between theory and practice. Therefore, teaching should be combined with clinical cases, and through analyzing real clinical cases, the effective integration of basic medical knowledge, professional course knowledge, and humanistic course knowledge can be realized. It not only consolidates professional knowledge but also improves students' ability to analyze and solve problems<sup>[4]</sup>. Progressive cases are based on real clinical cases, combined with learning needs and teaching objectives, and pay attention to the dynamic and sustainable development and change of the overall case scenario<sup>[5]</sup>, which can effectively promote the establishment and development of clinical reasoning and critical thinking skills of nursing students<sup>[6]</sup>. Scenario simulation teaching method is to create a real nursing scenario, adopt group discussion, simulation exercise, role-playing, and other teaching methods. Under the guidance of teachers, students' active learning is promoted, the mastery of professional knowledge and skills is strengthened, and professional emotional experience of nursing is obtained, so as to improve the learning effect of the classroom. Scenario simulation method is helpful in stimulating students' interest in self-learning, improving the learning initiative and enthusiasm, and enhancing the teaching satisfaction of nursing students<sup>[7]</sup>. In this paper, progressive case teaching combined with the scenario simulation teaching method is applied to the teaching of comprehensive practical training of nursing in higher vocational schools, and the teaching effect is satisfactory.

## **2. Information and methods**

### **2.1. Research data**

Two groups of students in our university from September 2023 to November 2023 were selected as the research objects. There were 36 students in the control group, including 32 girls and 4 boys, aged 20 to 22 years old, with an average age of  $21.2 \pm 1.3$  years old. In the observation group, there were 37 students, including 31 girls and 6 boys, aged 20 to 22 years old, with an average age of  $21.5 \pm 1.1$  years old. Both groups were nursing students in higher vocational colleges. The inclusion criteria were: (1) students who can cooperate with teaching and assessment work; (2) students who can cooperate with research and questionnaire survey; (3) students with cognition and normal communication. The exclusion criteria were: (1) those who cannot complete the teaching plan due to sick leave, personal leave, and other reasons; (2) those who have difficulty in communication; (3) those who are unable to cooperate with researchers. The baseline data such as age, gender, and education level were comparable between the two groups ( $P > 0.05$ ).

### **2.2. Research methods**

The control group adopted the teaching method of routine nursing comprehensive practical training. Firstly, the teacher taught and explained the process of each operation, and the students watched. After the teacher's instruction, the students were divided into groups to practice on their own, and the teacher provided bedside guidance and error correction for the students' operation. The observation group implemented the progressive case teaching combined with scenario simulation teaching method on the basis of the conventional teaching method. The specific methods are as follows:

- (1) Progressive case teaching: Typical cases of diseases in key clinical departments were compiled jointly

by full-time teachers and part-time clinical tutors. The eight progressive cases included duodenal bulbar ulcer patient care, COPD (chronic obstructive pulmonary disease) patient care, fracture patient care, breast cancer postoperative patient care, pregnancy hypertension patient perinatal care, pediatric diarrhea care, cardiac and respiratory arrest patient rescue and care, and organophosphorus pesticide poisoning coma patient care. Cases were divided into the teacher version and the student version. Pre-class learning tasks were released through Rain Classroom before class, and relevant questions were raised. Taking the case of duodenal bulbar ulcer as an example, it was proposed that the patient had massive hematemesis symptoms and had a history of epigastric pain, manifested as fasting pain, which was alleviated after meals; the kind of diseases the patient might have; the current nursing problems of the patient; the tests needed to confirm the disease; and the nursing operations needed during first aid. Students were required to try to answer the above questions by way of preview, group discussion, and literature review before class. In class, the teacher took the change of the patient's condition as a clue to start the case and asked the students to use the professional knowledge reviewed before class to analyze the condition, use the method of nursing procedures to put forward the nursing problems of the patient, and make personalized nursing plans for the patient according to the condition.

- (2) Scenario simulation teaching: This was carried out in the simulated ward through the scenario simulation to solve the actual nursing problems. For example, for the above-mentioned patients with duodenal bulbar ulcer complicated with massive gastrointestinal bleeding, students were required to form a rescue team in a group as a unit, establish two venous access in the shortest possible time, and give measures such as ECG (electrocardiography) monitoring, oxygen inhalation, and drug administration. In this process, it can effectively cultivate students' teamwork spirit<sup>[8]</sup> and enhance students' learning interests and comprehensive nursing ability<sup>[9]</sup>.

### 2.3. Observation indicators

The theoretical test scores and operational test scores of the two groups of students were assessed and compared, and the level of critical thinking skills and the teaching satisfaction of the comprehensive practical nursing course were compared between the two groups.

- (1) Theoretical test scores: Writing papers according to the syllabus and taking the form of closed-book examination, the contents of the paper included the operation purpose of various nursing operations, the diseases commonly seen, operating steps, and precautions. Teachers set up case analysis questions, requiring students to analyze and judge the types of diseases according to the cases in the question, put forward nursing problems, and formulate nursing measures. The total score of the paper is 100; the higher the score, the better the student's theoretical knowledge.
- (2) Operational test scores: The teacher selected five cases of moderate difficulty in advance using the lottery method. Students randomly chose the cases and prepared for the exam according to the cases. Student volunteers played the role of patients in the exam, and students were required to conduct nursing assessment on the patients first, and then complete related operations according to the existing nursing problems. The teacher gave a comprehensive score on their performance, with a total score of 100. The higher the score, the better the student's ability to operate<sup>[10]</sup>.
- (3) Critical thinking skills: The Critical Thinking Disposition Inventory-Chinese Version (CTDI-CV)<sup>[11]</sup> provided by the Hong Kong Polytechnic University was adopted for assessment. This scale is a commonly used evaluative thinking measurement tool at present, including seven dimensions of truth-seeking, openness of thought, analysis, systematicity, confidence, inquisitiveness, and cognitive

maturity. Each dimension contains 10 items and a total of 70 items. Among them, 30 items are positive and 40 items are negative.

- (4) Teaching satisfaction: According to the research objectives and contents of this paper, a teaching satisfaction questionnaire with a total of eight items was prepared, and the Likert 5-level scoring method was used to evaluate each item of the questionnaire, ranging from “unsatisfied” to “very satisfied,” with a total score of 40 points. The higher the score, the higher the satisfaction of students with progressive case teaching combined with scenario simulation teaching method.

## 2.4. Statistical methods

SPSS21.0 statistical software was used for data analysis, and *t*-test was used to compare the theoretical and operational test scores, critical thinking skill level, and teaching satisfaction scores of the two groups.  $P < 0.05$  was considered statistically significant.

## 3. Results and discussion

Nursing is a practice-based discipline, and nursing comprehensive practical training plays an important role in nursing teaching. However, the investigation shows that there is a disconnection between theory and practice in the training of nursing talents in higher vocational colleges, which leads to the lack of clinical practice skills in nursing students<sup>[11-13]</sup>. After entering clinical practice, due to poor clinical practice skills, there will be poor adaptation to clinical practice, anxiety, and even various adverse nursing events<sup>[14]</sup>. Therefore, attention should be paid to the teaching of nursing comprehensive practical training courses during school teaching, so as to fully improve students' comprehensive practical skills.

Traditional nursing comprehensive practical training courses separate cases from operations and only emphasize operation exercises. Students mostly practice venipuncture, oral care, and other operations on the model, unable to combine clinical cases with nursing operations, which is inconducive to the cultivation of their critical thinking and comprehensive practical skills<sup>[15]</sup>. Progressive case teaching designs courseware and teaching plans by means of multimedia and network teaching to reproduce typical clinical cases and send courseware through network terminals, and requires students to preview before class and try to answer questions, which helps students develop a good habit of independent thinking and learning. Case analysis in the classroom tests the effectiveness of pre-class learning. Based on the case analysis, relevant operational skills are taught to help students combine practical and theoretical knowledge and improve students' ability to analyze and solve problems.

In addition to progressive case teaching, this paper also implemented the scenario simulation method in the simulated ward to solve the actual nursing problems. Students are required to form nursing teams in small groups to create real nursing scenarios in the simulated wards. The team members play different roles, such as doctors, nurses, patients, and their families, etc., and implement personalized nursing measures according to the needs of patients' conditions, so that students can master nursing knowledge and skills in completing nursing tasks, and obtain professional emotional experience at the same time. It can not only enhance students' interest and initiative in learning but also cultivate students' teamwork spirit and communication skills. The results of this paper show that the theoretical and operational test scores of the observation group are significantly better than those of the control group ( $P < 0.05$ ), which confirms that the progressive case combined with the scenario simulation teaching method is helpful in improving the teaching effect and quality of the practical training course of nursing majors in higher vocational colleges. The score of critical thinking skills in the observation group was significantly higher than that in the control group ( $P < 0.05$ ), which confirms that the progressive

case combined with the scenario simulation teaching was helpful in cultivating the critical thinking skills of nursing students in higher vocational colleges. As the progressive case combined with the scenario simulation teaching has a certain interest, students' participation is high with better learning enthusiasm, the results of this paper show that the teaching satisfaction of students in the observation group was higher than that in the control group ( $P < 0.05$ ).

## 4. Conclusion

To sum up, this paper applied the progressive case teaching combined with the scenario simulation teaching method to the teaching of comprehensive practical training of nursing in higher vocational nursing majors, which effectively improved students' theoretical and operational test scores, enhanced students' critical thinking skills and teaching satisfaction, and played a positive role in improving the quality of talent training of nursing students in higher vocational colleges.

## Disclosure statement

The author declares no conflict of interest.

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