

Application of Scenario-Based Teaching Based on Standardized Case Libraries Combined with Guided Feedback in Practical Teaching of Nursing Undergraduates: A Postprint

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Abstract

Objective To investigate the application effects of scenario-based teaching combined with guided feedback based on a standardized case library in the practical teaching of nursing undergraduates.

Methods Using cluster sampling, 216 nursing undergraduates from the 2016 cohort of our university were selected as research subjects. A standardized case library was established, and scenario-based teaching combined with guided feedback was applied in the practical teaching of nursing undergraduates. The critical thinking and self-directed learning ability of nursing undergraduates were evaluated.

Results After implementing the teaching model of scenario-based teaching combined with guided feedback based on a standardized case library, the scores in all dimensions of critical thinking and self-directed learning ability of nursing undergraduates improved, and the differences were statistically significant compared with pre-intervention ($P < 0.05$).

Conclusion The teaching model of scenario-based teaching combined with guided feedback based on a standardized case library can improve the critical thinking and self-directed learning ability of nursing undergraduates.

Full Text

Application of Simulated Teaching Based on Standardized Case Database Combined with Guided Feedback in Practical Teaching of Nursing Undergraduates

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Abstract

Objective: To explore the application effect of simulated teaching based on a standardized case database combined with guided feedback in the practical teaching of nursing undergraduates.

Methods: Using cluster sampling method, nursing undergraduates from our university were selected as research subjects. A standardized case database was established, and simulated teaching combined with guided feedback was implemented in the practical teaching of nursing undergraduates. Critical thinking and self-directed learning abilities were evaluated before and after the intervention.

Results: After implementing the teaching model of simulated teaching based on standardized case database combined with guided feedback, scores in all dimensions of critical thinking and self-directed learning ability among nursing undergraduates improved, with statistically significant differences compared to pre-intervention levels ($P < .$).

Conclusion: The teaching model of simulated teaching based on standardized case database combined with guided feedback can improve the critical thinking and self-directed learning abilities of nursing undergraduates.

Keywords: standardized case database; situated teaching; guided feedback; nursing undergraduate; nursing education

Introduction

Case-based teaching is a pedagogical approach founded on actual cases that effectively cultivates students' clinical thinking [1]. However, the quality of cases currently used in nursing education is relatively poor, making it difficult to achieve desired teaching outcomes. Standardized cases that integrate authentic clinical scenarios enable students to develop more comprehensive understanding of real clinical conditions [2]. Establishing a professional standardized case database for nursing represents an inevitable choice for advancing reform in nursing teaching practice.

Guided feedback is a form of reflective dialogue characterized by teacher-facilitated, student-centered bidirectional interaction [3]. While situated

teaching has demonstrated increasingly important value in contemporary nursing education, achieving high-quality outcomes through this method remains a common concern among nursing educators. Our hospital has applied simulated teaching based on a standardized case database combined with guided feedback in the practical teaching of nursing undergraduates, achieving favorable results, which we now report.

1. Materials and Methods

1.1 Study Subjects

Using cluster sampling method, nursing undergraduates (grade level not specified) from our university were selected as research subjects, including males (number not specified) with an average age of () years. Inclusion criteria: (1) currently enrolled nursing undergraduates; (2) informed consent and voluntary participation. Exclusion criteria: students on leave who could not participate in the study.

1.2 Teaching Team Formation

A teaching team was established, with the college' s nursing education director serving as team leader, the teaching and research office director as deputy leader, and all faculty members from the nursing teaching and research office as team members. Graduate students participated in supporting teaching implementation.

1.3 Establishment of Standardized Case Database

Under the leadership of the research director, teaching and research office members classified and organized relevant nursing cases collected from affiliated hospital clinical work over the past years. Each standardized case primarily included: case information, case body, and case description. After initial organization, teaching team members conducted rounds of screening and revision to finalize the standardized cases for respective disciplines.

1.4 Teaching Implementation

Using internal medicine nursing as an example, the semester' s practical curriculum comprised total class hours, with each session lasting minutes. The implementation process was as follows:

Pre-class: Faculty conducted collective lesson preparation, selecting representative cases from the standardized case database according to teaching objectives. For instance, in the circulatory system module, cases of acute myocardial infarction patients undergoing percutaneous coronary intervention (PCI) were selected, covering knowledge related to coronary heart disease, myocardial infarction, and PCI. Teachers designed questions based on selected cases for in-class use. Students accessed standardized cases for relevant chapters through

the university's teaching platform. Each student randomly selected one case and was grouped with peers who selected the same case. Each group consisted of members, with the group leader guiding members through case analysis following nursing process steps.

In-class: Teachers arranged for each group to conduct situational simulation exercises in rotation (total minutes per group). After each group's simulation, teachers posed targeted questions based on the case, with group members actively responding and other groups supplementing as needed. Following each simulation, teachers guided students through guided feedback sessions. The feedback phase established a relatively quiet discussion environment. Based on questions raised in the case, students reflected on discussion content. During the understanding feedback stage, after each simulation exercise, teachers guided students to reflect on gaps between actual operations and objectives, using questioning to prompt reflection on underlying reasons. In the summary stage, teachers provided reference frameworks for each simulation segment through summarization, evaluated student performance, and guided continuous reflection and deeper problem exploration.

Post-class: Students raised questions about learning issues through online platforms, and teachers provided answers.

1.5 Evaluation Methods

Critical thinking ability and self-directed learning ability were evaluated before and after teaching implementation.

Critical Thinking Ability: The Critical Thinking Disposition Inventory developed by Peng Meici et al. [4] was adopted. The questionnaire contains items with a total score of . The Cronbach's α coefficient is .

Self-Directed Learning Ability: The Self-Directed Learning Ability Scale for Nursing Students revised by Wu Defang [5] was used. The scale comprises dimensions. The questionnaire's Cronbach's α coefficient is .

1.6 Statistical Methods

SPSS software was used for data analysis. Measurement data were expressed as mean \pm standard deviation ($x \pm s$). Paired t-test was used for comparison before and after intervention. The test level was set at $\alpha = .$ A difference of $P <$ was considered statistically significant.

2. Results

2.1 Critical Thinking Ability Evaluation

After implementing the teaching model of simulated teaching based on standardized case database combined with guided feedback, scores in all dimensions

of critical thinking among nursing undergraduates improved, with statistically significant differences compared to pre-intervention levels ($P < .$).

2.2 Self-Directed Learning Ability Evaluation

After implementing the teaching model, scores in all dimensions of self-directed learning ability among nursing undergraduates improved, with statistically significant differences compared to pre-intervention levels ($P < .$).

3. Discussion

This study found that after implementing the teaching model of simulated teaching based on standardized case database combined with guided feedback, scores in all dimensions of critical thinking among nursing undergraduates improved, indicating that this teaching model can enhance students' critical thinking abilities. The critical thinking ability of nursing undergraduates is generally low, and reforming nursing teaching methods constitutes the key to improving this capacity [6]. The teaching model of simulated teaching based on standardized case database combined with guided feedback utilizes actual clinical cases in instruction, enabling students to simulate corresponding scenarios based on cases. Through teacher-student interaction, teachers help students think deeply and reflect on their performance, thereby promoting knowledge mastery and proficient application. Guided feedback can facilitate student reflection, cultivate critical thinking abilities, deepen knowledge understanding and transformation [7], and improve teaching effectiveness.

This study also demonstrated that after implementing this teaching model, scores in all dimensions of self-directed learning ability among nursing undergraduates improved compared to pre-intervention levels, indicating that the model can enhance students' self-directed learning capabilities. Only through integration with clinical practice can education truly serve clinical needs and improve students' ability to solve clinical problems. The teaching model of simulated teaching based on standardized case database combined with guided feedback not only promotes the integration of theoretical knowledge and practice but also recreates patient needs, problems, and specific clinical environments. This helps students apply theoretical knowledge through situational exercises based on assigned cases, cultivates self-directed learning abilities, and deepens the depth of knowledge application.

In summary, the teaching model of simulated teaching based on standardized case database combined with guided feedback can improve the critical thinking and self-directed learning abilities of nursing undergraduates and warrants further promotion and application.

Conflict of Interest Statement: The authors declare no conflicts of interest.

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