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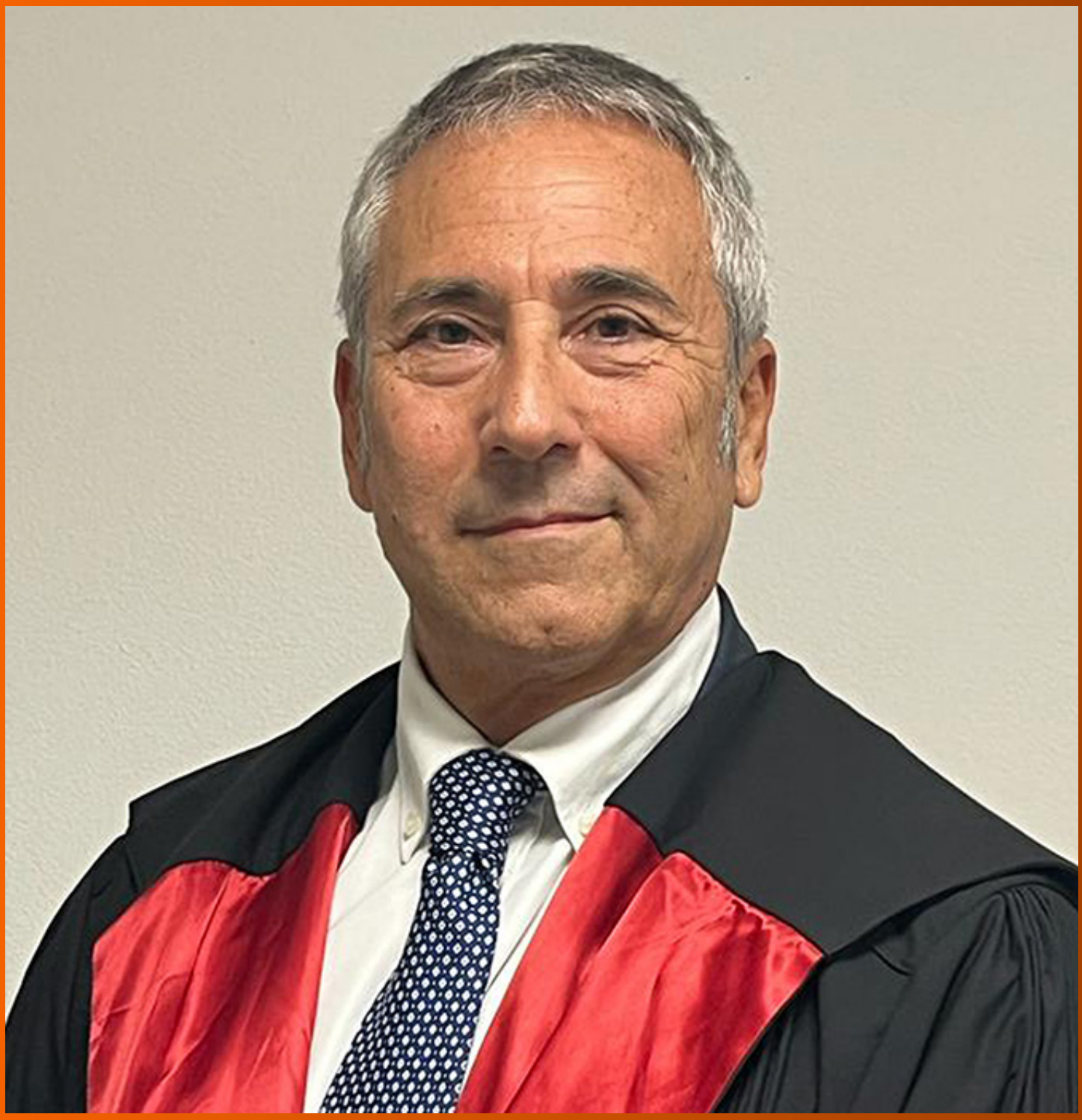

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AIMS AND SCOPE

The primary aim of *World Journal of Gastrointestinal Surgery* (*WJGS*, *World J Gastrointest Surg*) is to provide scholars and readers from various fields of gastrointestinal surgery with a platform to publish high-quality basic and clinical research articles and communicate their research findings online.

WJGS mainly publishes articles reporting research results and findings obtained in the field of gastrointestinal surgery and covering a wide range of topics including biliary tract surgical procedures, biliopancreatic diversion, colectomy, esophagectomy, esophagostomy, pancreas transplantation, and pancreatectomy, *etc*.

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Retrospective Study

Practical effect of different teaching modes in teaching gastrointestinal surgery nursing

Xiao-Juan Rong, Zhen Ning

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Abstract

BACKGROUND

With the continuous development and progress of medical technology, the position of surgical nursing in the field of clinical medicine is becoming increasingly prominent. As an important branch of the surgical field, the nursing requirements and difficulty of gastrointestinal surgery are also increasing. In order to improve the teaching quality of nursing care in gastrointestinal surgery, many educators and researchers are actively exploring new teaching methods. Among them, the teaching method case-based learning (CBL), scene-simulated learning (SSL), task-based learning (TBL), combining self-evaluation and training mode is considered as an effective method. This method aims to help students to better master knowledge and skills and improve their comprehensive quality by cultivating their self-evaluation ability.

AIM

To explore the practical effect of CBL-SSL-TBL combined with training mode and student self-assessment in nursing teaching of gastrointestinal surgery.

METHODS

Seventy-one nursing interns in our hospital from December 2020 to December 2021 were selected. According to different teaching modes, they were divided into observation group CBL-SSL-TBL combined with training mode combined with student self-assessment and control group (conventional teaching mode), of which 36 were in observation group and 35 were in control group. The results of operational skills, theoretical knowledge, nursing students' satisfaction, learning effectiveness questionnaire and teaching effect were compared between the two groups.

RESULTS

Compared between the two groups, the operational skills and theoretical knowledge scores of the observation group were higher than those of the control

group, and the difference was statistically significant ($P < 0.05$). Compared between the two groups, the total satisfaction ratio of the observation group was higher than that of the control group, the difference was statistically significant ($P < 0.05$). Compared between the two groups, the observation group was lower than the control group in the questionnaire results of learning efficacy, and the difference was statistically significant ($P < 0.05$). Compared between the two groups, the proportion of thinking ability, subjective initiative and understanding of theoretical knowledge in the observation group was higher than that in the control group, the difference was statistically significant ($P < 0.05$).

CONCLUSION

The use of CBL-SSL-TBL combined with training mode and student self-assessment in gastrointestinal surgery nursing teaching can improve the operational skills of nursing interns, theoretical knowledge and satisfaction scores of nursing students, improve the results of learning efficiency questionnaire and teaching effect, which can be popularized in clinical teaching.

Key Words: Gastrointestinal surgery; Nursing teaching; Teaching model; Practical effect; Learning ability

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Core Tip: Clinical practice is the only way for nursing students to combine theory with practice as a qualified nurse. It is also a key period for cultivating nursing interns to develop communication, communication, cognition, emotion and skills. Case-based learning (CBL), scene-simulated learning (SSL), task-based learning (TBL) combines the training mode and the students' self-evaluation teaching mode, which enriches the operation process, takes cases as the guide, and guides nursing interns to self-study and discuss with clinical problems. This teaching mode not only improves the thinking ability of nursing interns, but also improves their self-learning ability and subjective initiative. To this end, this paper discusses the practical effect of CBL-SSL-TBL combined with training mode and students' self-evaluation in teaching gastrointestinal surgical nursing.

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INTRODUCTION

Clinical practice is the only way for nursing students to combine theory with practice as a qualified nurse. It is also a key period for cultivating nursing interns to develop communication, communication, cognition, emotion and skills[1,2]. However, due to the complexity of medical work and the patients' requirements for safe medical services, there are few opportunities for nursing interns to directly practice operations, and they will also be greatly limited. Especially in the process of emergency disposal of gastrointestinal surgery patients, nursing interns often do not have enough practice opportunities, which affects their learning effect and self-confidence[3,4]. As usual using conventional teaching mode of training for them, but the conventional teaching through lectures, computer teaching, and "cramming" knowledge instill nursing interns lack of gastrointestinal surgery disease nursing knowledge and easy to produce simple fragment memory, ignore the students' enthusiasm, subjective initiative and their own fear of gastrointestinal surgery skills operation cognitive, lead to nursing interns skills and theory appraisal is often not the ideal[5,6]. Case-based learning (CBL), scene-simulated learning (SSL), task-based learning (TBL) combines the training mode and the students' self-evaluation teaching mode, which enriches the operation process, takes cases as the guide, and guides nursing interns to self-study and discuss with clinical problems. This teaching mode not only improves the thinking ability of nursing interns, but also improves their self-learning ability and subjective initiative[7,8]. To this end, this paper discusses the practical effect of CBL-SSL-TBL combined with training mode and students' self-evaluation in teaching gastrointestinal surgical nursing.

MATERIALS AND METHODS

General information

Seventy-one nursing interns practicing in our hospital from December 2020 to December 2021 were selected, according to different teaching modes, were divided as observation group (CBL-SSL-TBL combined with self-evaluation) and control group (conventional teaching mode), among which 36 cases were in the observation group and 35 cases were in the control group. In the observation group, 15 males and 21 females, 18-23 years, mean (20.33 ± 0.23); in the control group, 13

males, 22 females, 18-23 years, mean (20.45 ± 0.31); the two experimental data were comparable ($P > 0.05$).

Inclusion criteria: (1) The experimental data and related data are complete; (2) All nursing interns included in this study are undergraduates; and (3) Researchers who have participated in the whole project; exclusion criteria: (1) Unable to participate in the whole process; and (2) Those who withdraw from the research project. All interns volunteered to practice in the gastrointestinal surgery department of the hospital and gave informed consent to the research project.

Methods

The control group was taught in the conventional mode: Conventional mode teaching is mainly divided into "belt, pass, help", by the nursing teacher of gastrointestinal surgery disease characteristics, diagnosis and treatment method, case data analysis, at the same time with stomach cancer patients nursing teaching, and then their operation demonstration, let the students see, then let the students do, finally correct the problems in students' practice, and knowledge summary.

The observation group adopted CBL-SSL-TBL combined with training mode to combine students' self-assessment: CBL-SSL-TBL combined training mode joint students self-evaluation: (1) With the teacher using multimedia case data, case data with controls, 1 d before inform the basic case data of nursing interns and the main content of the next day of the ward round, the day round by the intern group of cases, when the patients have corresponding complications, nurses should how to deal with? What consequences may patients have? And formulate relevant treatment plans; (2) In the hospital skills training center, each group of students will perform necessary skills such as cardiopulmonary resuscitation, endotracheal intubation, oxygen inhalation, sputum aspiration and intravenous infusion according to the plan formulated by their own, and complete the treatment by using defibrillator, monitor and other equipment. The patient's recovery team is treated successfully, otherwise it fails; and (3) Finally, the indications, contraindications and operation points of relevant skills and operation are explained, and the nursing teacher will make corrections and comments[9].

Observed indicators

Comparison of two groups of general data, including age, comprehensive scores in school, *etc.*

Compare the post-teaching operation skills between the two groups. Operation skills: After the teaching, the teacher set up the simulated cases. The interns collected the medical history, physical examination, preliminary disease diagnosis and treatment plan in the simulated scenario, and completed the operation specified by the teacher, including the use of electrocardiogram machine and the interpretation of the results. Score is scored strictly according to the scoring criteria, with a total score of 100 points[10].

Compare the theoretical knowledge results of the two groups after teaching. Theoretical knowledge score: After the teaching, the teacher will give the questions based on the teaching content, which are divided into two parts: Basic knowledge and case analysis. The total score of the two parts is 100 points. After all the interns, the test papers will be sealed and the papers will be marked uniformly[11].

Compare the satisfaction between the two groups. Satisfaction questionnaire statistics, the full score of 100 points. Satisfied with: 90-100 points; more satisfied with: 60-89 points; dissatisfied with: 59 points or less. Total satisfaction rate = (satisfied + relatively satisfied)/100% of total nursing students. The reliability coefficient was 0.898 and the validity coefficient was 0.854, which met the study requirements[12].

Compare the results of the post-teaching learning efficacy questionnaire between the two groups. There were 4 questions in the questionnaire, including 5 points for "very agree" and 5 points for "very disagree". The lower the score, the higher the learning efficiency. The questionnaire was tested for letter and validity, and the reliability coefficient was 0.898 and the validity coefficient was 0.854, which met the study requirements. Using the classroom recovery mode, the questionnaire recovery rate was 100%[13].

Compare the teaching effect between the two groups. The teaching effect includes the thinking ability, the subjective initiative and the understanding of the theoretical knowledge in detail.

Statistical methods

Analysis by SPSS20.0 software, measurement data described in (± SD), two *t*-test; count data expressed in (%) and χ^2 test; $P < 0.05$ was considered as significant.

RESULTS

General information

Compared with the age and comprehensive school score of the experimental group and the control group, the difference was not statistically significant ($P > 0.05$; Table 1).

Operation skills

In comparison between the two groups, the observation group was higher than the control group, and the difference was statistically significant ($P < 0.05$; Table 2).

Theoretical knowledge achievement

In comparison between the two groups, the theoretical knowledge score of the observation group was higher than that of the control group, and the difference was statistically significant ($P < 0.05$; Table 3).

Table 1 Compares the two groups of general data (mean ± SD)

Group	*n*	Age	Comprehensive results at school
The observation group	36	20.33 ± 0.23	81.20 ± 0.29
The control group	35	20.45 ± 0.31	81.22 ± 0.31
t	-	1.855	0.280
P value	-	0.067	0.779

Table 2 Comparison of post-teaching operational skills (mean ± SD between the two groups)

Group	*n*	Operation skills (points)
The observation group	36	95.17 ± 1.32
The control group	35	87.46 ± 3.32
t	-	12.924
P value	-	< 0.001

Table 3 Compares the post-teaching theoretical knowledge scores between the two groups (mean ± SD)

Group	*n*	Theoretical knowledge (points)
The observation group	36	93.24 ± 0.69
The control group	35	88.97 ± 4.88
t	-	5.197
P value	-	< 0.001

Nursing student satisfaction

In comparison between the two groups, the proportion of total satisfaction in the observation group was higher than that in the control group, and the difference was statistically significant ($P < 0.05$; Table 4).

Results of the learning efficacy questionnaire survey

In the comparison between the two groups, the results of the observation group were low ($P < 0.05$; Table 5).

Teaching effect

By comparison between the two groups, the proportion of the number of thinking ability, subjective initiative and theoretical knowledge in the observation group was higher than that of the control group, and the difference was statistically significant ($P < 0.05$; Table 6).

DISCUSSION

Clinical practice is a process that every medical student must go through before becoming a real doctor or nurse. When encountering problems during the internship, it is more important to answer questions than simple knowledge memory and to master how to solve them[13,14]. For nursing interns, it is extremely difficult to master the knowledge content. This requires the key training of interns' professional knowledge, skills operation, thinking logic and other abilities in the process of teaching teachers[15].

Conventional teaching mode is usually used in gastrointestinal surgery nursing intern teaching work, but the study found that the teaching mode is the knowledge, simple teacher centered, related disease knowledge, it's not interns become active, and professional theoretical knowledge to clinical practical ability transformation process is slow, makes the teaching theoretical knowledge and skills evaluation results often reach the ideal[16,17]. However, a large number of foreign studies show that CBL-SSL-TBL combined with training mode and students' self-assessment to take nursing interns as the main body, which stimulates their desire for independent exploration and learning, and greatly improves the final assessment results[18,19]. However, the results of this paper show that in the comparison between the two groups, the operation skills and theoretical knowledge scores of the observation group were higher than that of the control group, and the difference had statistical significance ($P < 0.05$). Results are consistent with the appeal argument, shows that CBL-SSL-TBL combined with training mode joint students self-evaluation can improve nursing interns

Table 4 Compares the satisfaction of two post-teaching nursing students, *n* (%)

Group	*n*	Very satisfied	More satisfied	Discontent	Total satisfaction
The observation group	36	31 (86.11)	4 (11.11)	1 (2.77)	35 (97.22)
The control group	35	8 (22.85)	19 (54.28)	8 (22.85)	27 (77.14)
t	-	-	-	-	6.463
P value	-	-	-	-	0.011

Table 5 Results of the learning effectiveness questionnaire (mean ± SD)

Group	*n*	Contribute to knowledge understanding	Dare to share your personal opinions	Trust on your ability to deal with patients	Understand the responsibilities and obligations of nurses
The observation group	36	1.33 ± 0.23	1.88 ± 0.28	1.46 ± 0.83	1.03 ± 0.67
The control group	35	2.33 ± 0.73	2.45 ± 0.83	3.33 ± 0.23	2.95 ± 0.33
t	-	7.830	3.899	12.855	15.248
P value	-	< 0.001	< 0.001	< 0.001	< 0.001

Table 6 Compares the post-teaching effects between the two groups, *n* (%)

Group	*n*	Ability of thinking	Subjective initiative	Understanding of the theoretical knowledge
The observation group	36	34 (94.44)	34 (94.44)	35 (97.22)
The control group	35	23 (65.71)	26 (74.28)	25 (71.42)
χ^2	-	9.253	5.508	9.018
P value	-	0.002	0.018	0.002

operation skills and theoretical knowledge, analysis the reason, CBL-SSL-TBL combined with training mode joint students self-evaluation will ask students to cases in advance, and through the scenario simulation based on the real cases, immersive as the core training students' practical ability, integrate the relevant important basic knowledge, at the same time by discussion with other interns, teachers after correction, makes the basic knowledge to deepen fusion, so as to improve the theoretical knowledge and operational skills[20,21].

At the same time, it is reported that CBL-SSL-TBL combined with training mode and students' self-evaluation have been highly recognized by students in gastrointestinal surgery nursing teaching[22,23]. However, the results of this paper show that in the comparison between the two groups, the proportion of total satisfaction in the observation group was higher than that of the control group, and the difference was statistically significant ($P < 0.05$). The results are similar to the above study results, indicating that CBL-SSL-TBL combined with training mode and self-assessment can improve the satisfaction of nursing students. A large number of foreign studies have proved that CBL-SSL-TBL combined with training mode and students' self-evaluation in nursing teaching, which greatly improves the learning effectiveness of nursing interns and improves the teaching effect[24]. As the results of this paper show, Comparison between the two different groups, The result scores of the learning efficacy questionnaire of the observation group were lower than that of the control group, The difference has statistical significance ($P < 0.05$), And the comparison between the two groups, The proportion of thinking ability, subjective initiative, and theoretical knowledge in the observation group was higher than that of the control group, The difference was statistically significant ($P < 0.05$), It shows that CBL-SSL-TBL combined with training mode and students 'self-evaluation can improve nursing, interns' learning effectiveness questionnaire results and teaching effect, Analyzing the reason, CBL-SSL-TBL combined with the training mode and students' self-evaluation mainly through the six steps of "teaching content selection-question raising-data collection-clinical access problem case-scenario simulation-summary" to stimulate the learning motivation of nursing interns, To it from passive to active learning, Indirectly improve the subjective initiative and improve the thinking ability. CBL-SSL-TBL combining training mode and student self-evaluation has certain advantages in the teaching of gastrointestinal surgery nursing, but it also has some limitations. The CBL-SSL-TBL training mode requires a lot of time and energy, which may pose some challenges to the teaching plan and course arrangement.

CONCLUSION

To sum up, the use of CBL-SSL-TBL combined with students' self-evaluation in gastrointestinal surgery nursing teaching can improve the operational skills, theoretical knowledge scores and satisfaction scores of nursing interns, and improve the questionnaire results and teaching effect of learning efficiency, which can be promoted in clinical teaching.

ARTICLE HIGHLIGHTS

Research background

With the continuous development of medical technology, the diagnosis and treatment methods of gastrointestinal surgical diseases are also constantly updated and improved. Therefore, it is essential for gastrointestinal surgical caregivers to continuously learn and update their knowledge and skills.

Research motivation

In order to improve the teaching quality of gastrointestinal surgery nursing.

Research objectives

Application of case-based learning (CBL), scene-simulated learning (SSL), task-based learning (TBL) combining training mode and student self-evaluation in teaching gastrointestinal surgery nursing.

Research methods

According to different teaching modes, they are set as observation group (CBL-SSL-TBL combined with training mode and students' self-evaluation) and control group (conventional teaching mode).

Research results

The operational skills and theoretical knowledge scores of the observation group were higher than those of the control group.

Research conclusions

Through the application of CBL-SSL-TBL teaching method, it can effectively improve the nursing teaching quality of gastrointestinal surgery, and cultivate more high-quality nursing talents.

Research perspectives

The importance of gastrointestinal surgical care.

FOOTNOTES

Author contributions: Rong XJ and Ning Z designed the research; Ning Z contributed new reagents/analytic tools; Rong XJ analyzed the data; Rong XJ and Ning Z wrote the paper.

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