Analysis of Effect of Improving Teaching Quality of Respiratory Clinical Nurse with Case-based Teaching Method and Traditional Teaching Mode

Bai Xiaoling, Shi Yajuan*, Gao Ying, Chen Zhe, LI Ying
Shaanxi Provincial People's Hospital, Xi 'an, Shaanxi, China

Abstract: This study mainly compares and analyzes the teaching effects of respiratory clinical nursing by using case teaching method and traditional teaching mode. The study was conducted from March 2023 to March 2024 with 110 intern nursing students in the hospital. They were randomly divided into the experimental group and the control group. The experimental group received case-based teaching method, while the control group received traditional teaching mode. The classroom effectiveness and work ability assessment scores of the two groups of intern nursing students were observed. The classroom effectiveness and work ability assessment scores of intern nursing students in the experimental group were higher than those in the control group (p < 0.05). The scientific application of case-based teaching method in respiratory clinical nursing teaching can enhance the classroom effect of nursing teaching and enhance the clinical nursing work ability of nursing students.

Keywords: Respiratory Nursing Teaching; Case-based Teaching Method; Traditional Teaching Mode

1. Introduction

Most clinical respiratory departments focus on elderly patients with acute, critical, or chronic diseases, and require high professional skills from nurses. Clinical nursing teaching is an important channel for cultivating nurses. Effective nursing teaching by departments can further improve the comprehensive abilities of nursing students and provide certain guarantees for the nursing safety of respiratory departments. In this study, case-based teaching method was applied to intern nursing students, and the detailed research content is as follows.

2. Information and Methods

2.1 General Information

The study was conducted from March 2023 to March 2024 with 110 intern nursing students in the hospital. Intern nursing students were randomly divided into the experimental group and the control group, and 55 intern nursing students were in both groups. There are 5 male nursing students and 50 female nursing students in the experimental group. The age range of nursing students is between 20 and 25 years old, with an average age of (22.89 ± 2.70) years old. There are 6 male nursing students and 49 female nursing students in the control group. The age range of nursing students is between 21 and 26 years old, with an average age of (23.70 ± 2.69) years old. After comparing the basic information of internship nursing students between the experimental group and the control group, we can see that value of P is greater than 0.05.

2.2 Methods

The control group of nursing students received the traditional teaching mode, and the department's teaching teacher explained the theoretical knowledge of nursing to the nursing students in the classroom based on the requirements of the nurse's teaching outline and the content of the lesson plan [1].

The experimental group of nursing students received case-based teaching method. Firstly, the department selected the attending physician as the main person in charge of the teaching task, and clarified that the teaching should mainly focus on modern multimedia combined with the teaching outline. Before teaching, the teacher should prepare lessons according to the requirements of the teaching outline, develop a scientific and reasonable teaching plan, and

plan to use teaching to familiarize and master the theoretical knowledge of respiratory science and related clinical practical operation knowledge for intern nursing students. The teacher insists on using typical cases in the teaching process. The teacher first introduces the basic knowledge of respiratory diseases to nursing students, and uses multimedia to display relevant video materials and pictures of respiratory disease basic knowledge to nursing students. In an intuitive way, the teacher enables nursing students to deeply understand disease knowledge. During this process, the teacher combines case analysis to carry out teaching, helping nursing students learn and master key and difficult knowledge. Then the teacher can group the intern nursing students into groups, with 5 nursing students in each group. The teacher will distribute respiratory cases to each group, requiring the nursing students to explore and analyze the cases together in the group, and use the knowledge learned to summarize the cases. Each nursing student will present their own views on the cases within the group. The teacher encourages group nursing students to actively review relevant materials after class and search for medical literature related to the knowledge involved in the case. During the second classroom teaching session, the teacher asked each group to send one representative to summarize the disease, differential diagnosis, and treatment methods of the case, while the other groups refuted and supplemented the content of the summarized groups. Finally, the teacher needs to provide scientific feedback on the case summary of each group. In response to the common problems encountered in the case analysis of each group, the teacher can provide unified knowledge explanations to help interns correct their mistakes [2].

2.3 Observation Indicators
This study observed the classroom effectiveness and clinical nursing work ability assessment scores of the experimental group and the control group of intern nursing students. The classroom effectiveness mainly include evaluation indicators such as learning autonomy, learning ability, logical thinking ability, and comprehension ability of intern nursing students in the classroom. The score range of each evaluation indicator is 0-10 points, and the higher the score value, the better the intern nursing student's learning effect in the classroom. The clinical nursing work ability assessment score mainly includes evaluation indicators such as humanistic care, expression and communication, emergency response, specialized operations, professional knowledge, nursing procedures, disease assessment, and disease mastery. The scoring range of each evaluation indicator is 0-100 points. The higher the score, the stronger the ability of the intern nursing student in this area.

2.4 Statistical Methods
The data in this study were analyzed using SPSS 24.0 software, and the measurement data was presented in the form of mean ± standard deviation. The differences between the two groups of data were tested by t-values. If $p<0.05$ is obtained, it can fully represent the statistical significance between the two groups of research data as well as improving the efficiency and quality of educational management work.

3. Results

3.1 Comparison of Classroom Effectiveness Ratings Between Nursing Students in Experimental Group and Control Group
The classroom effectiveness scores of nursing students in the experimental group were higher than those in the control group, as shown in Table 1 below.

Table 1. Comparison of Classroom Effectiveness Ratings Between Nursing Students in Experimental Group and Control Group（$\bar{x} \pm s$, Score）

Group	Case	Learning autonomy	Learning ability	Learning ability	Comprehension ability
Experimental group	55	6.90±2.02	7.19±1.85	7.28±2.86	7.32±1.75
Control group	55	3.88±2.45	3.96±2.76	4.06±2.10	4.38±0.95
t	-	10.098	10.782	10.285	10.895
P	-	0.001	0.001	0.001	0.001

3.2 Comparison of Nursing Performance Assessment Scores Between Nursing Students in Experimental Group and Control Group
The scores of various nursing assessment

abilities in the experimental group were higher than those in the control group, as shown in the below table2 and table3.

Table 2. Comparison of Nursing Performance Assessment Scores Between Nursing Students in Experimental Group and Control Group（$\bar{x} \pm s$，Score）

Group	Case	Disease mastery	Disease assessment	Nursing procedures	Professional knowledge
Experimental group	55	86.90±7.02	87.19±2.85	87.28±5.86	87.32±6.75
Control group	55	73.88±5.45	73.96±4.76	74.06±4.10	74.38±4.95
t	-	11.065	11.796	10.675	10.836
P	-	0.001	0.001	0.001	0.001

Table3. Comparison of Nursing Performance Assessment Scores Between Nursing Students in Experimental Group and Control Group（$\bar{x} \pm s$，Score）

Group	Case	Specialized operations	Emergency response	Expression and communication	Humanistic care
Experimental group	55	86.90±3.02	87.19±1.85	87.28±2.53	87.32±5.75
Control group	55	73.88±2.45	73.96±2.72	74.06±2.25	74.38±1.95
t	-	11.098	12.260	11.560	11.921
P	-	0.001	0.001	0.001	0.001

4. Discussion

The fundamental purpose of clinical nursing is to meet the physiological and psychological needs of patients during treatment, which requires the department to have excellent nurses. Nurses should have solid nursing theoretical knowledge and clinical practical operation skills. In order to master these knowledge, interns need to undergo systematic clinical nursing guidance [3]. In general, respiratory interns will receive teaching under the traditional teaching mode. However, the traditional teaching mode usually only tells interns how to do it. Most interns use rote memorization to learn knowledge points, which makes interns feel bored and their learning enthusiasm significantly decreases. And finally teaching results are unsatisfactory. Respiratory medicine has developed rapidly in clinical practice, and it involves a wide range of diseases with relatively complex types, making clinical treatment difficult for patients [4]. Some respiratory diseases have the possibility of infection, and there are a large number of critically ill patients. This requires respiratory nurses to provide more professional care to patients and master basic knowledge of respiratory pathophysiology, immunology, and other related knowledge. In addition, respiratory patients are also prone to comorbidities such as cerebrovascular diseases and coronary heart disease, which puts higher demands on the quality of nursing. Therefore, respiratory departments need to improve the education quality of interns in order to provide assurance for the quality of respiratory nursing [5].

Case-based teaching method is an educational method developed in recent years, which effectively integrates practical operation techniques and basic theoretical knowledge, and can help interns to further improve their comprehensive quality. Traditional teaching mode uses fixed textbooks to teach intern nursing students, and the updating speed of textbooks is usually slow. Some of the content in textbooks may differ from the latest medical level. Although the teaching teacher has a grasp of the diagnosis and treatment progress of new diseases, the teacher may also be unable to fully teach intern nursing students new disease diagnosis and treatment methods due to classroom time or other reasons. However, case-based teaching method can effectively compensate for the deficiency in traditional teaching mode. The teaching teacher can flexibly adjust the teaching plan based on the learning situation and teaching needs of the students, so that the teaching content can be consistent with the latest diagnosis and treatment technology knowledge, ensuring that internship nursing students are exposed to the latest technical knowledge [6]. Under the traditional teaching mode, intern nursing students passively receive the content taught by the teacher in the classroom, while the case-based teaching method takes intern nursing students as the domination of the classroom, and the teacher gives students typical cases, allowing intern nursing students to explore and analyze typical cases together in groups. It enables each intern nursing student to have a sense of learning participation and achieve common progress for intern nursing

students. And case-based teaching method will also guide internship nursing students to think about the knowledge they have learned, which can effectively cultivate their clinical thinking ability. According to the results of this study, the classroom effectiveness and the nursing assessment ability scores of the experimental group were higher than those in the control group. Therefore, the teaching quality of the case-based teaching method is higher than that of the traditional teaching mode.

Based on the above content, it can be concluded that in clinical nursing teaching, respiratory intern nursing students can receive scientific case-based teaching methods, which can further improve the quality and effectiveness of classroom teaching, help them deeply understand and master respiratory theory knowledge and practical operation techniques, and further enhance their nursing work ability and quality. So the case-based teaching method is worth widely applying in clinical nursing teaching.

References

[1] Liu Yan. The Application Effect of Evidence-based Nursing Combined with Case Teaching Method in Respiratory Internship Nurse Training [J]. Continuing Medical Education, 2022, 36 (07): 41-44.

[2] Shi Songhua, Tang Xiaohong, Kang Yafen, et al. Application of Task-based Case Teaching Method in Clinical Nursing Teaching [J]. Chinese Medical Journal, 2022, 23 (05): 95-97.

[3] Xue Jing, Tang Yao, Pang Lili, et al. Application of Case Teaching Method in Standardized Training of Respiratory Nursing [J]. China Continuing Medical Education, 2022, 14 (03): 18-22.

[4] Liang Chengcheng, Xiong Shuyun. Application Experience of Multiple Teaching Methods in Clinical Teaching of Respiratory Nursing [J]. Medical Dietary Therapy and Health, 2021,19 (14): 179-180+183.

[5] Chen Yu. Observation of Application of Case Teaching Method in Clinical Nursing Teaching of Respiratory Medicine [J]. China Health Industry, 2020,17 (12): 114-116.

[6] Chen Yan. Practical Application of PBL Teaching Model in Respiratory Nursing Clinical Teaching [J]. China Continuing Medical Education, 2020,12 (02): 6-8.