

Nursing Teaching Research in Gastroenterology Based on "Infiltration" Teaching Method

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Abstract: *The osmotic teaching is based on the theoretical basis of nursing in gastroenterology and focuses on the cultivation of students' professional skills. It uses mind maps, various micro-videos and other learning channels and resources to create a lively and interesting learning atmosphere. Nursing students continue to consolidate their basic knowledge at the same time. Build new knowledge gradually. It is not only convenient for students to learn and ask questions at any time, but also can improve teachers' professional ability and ability to apply information technology, encourage students to participate in learning activities, and avoid the situation of "one talk" in traditional teaching. This paper takes students majoring in gastroenterology nursing as an example, and uses observation and comparison methods to explore the impact of infiltration teaching mode on students' academic performance and learning ability. It is found that compared with traditional teaching methods, infiltration teaching method can significantly improve student performance and it is hoped that the research results of this paper can provide a reference for improving the application of osmotic method in the nursing teaching of gastroenterology.*

Keywords: *Osmotic teaching, Traditional teaching method. Gastroenterology nursing, Learning ability*

1. Introduction

The high level of autonomous learning ability and critical thinking ability of clinical nurses can help them make correct judgments in their work, which can significantly improve the scientificity and rationality of nursing work, better meet the needs of patients and improve the quality of nursing. Therefore, how to use the penetration teaching method to improve the learning ability of nursing students in these two aspects is the research direction of this paper.

Many scholars at home and abroad have conducted research on the nursing teaching of gastroenterology based on the "infiltration" teaching method, and have achieved good results. For example, the teachers of a university nursing school used the conventional learning mode and the penetration learning mode alternately for the experimental group and the control group in the physiology teaching of higher vocational nursing students. The research results show that the learning effect of the penetration learning group is better than that of the conventional learning mode. The teaching mode is helpful to improve students' autonomous learning ability and academic performance, and improve the teaching effect [1]. Relevant studies have shown that integrating various elements to carry out the overall design of the permeable teaching system, giving full play to the advantages of online learning and face-to-face classrooms, combining a variety of teaching resources and learning environments, and promoting the improvement of students' learning input level is to ensure the success of permeable learning. The core issue of good results [2]. Although there are many studies on the use of osmotic teaching method for teaching nursing students in gastroenterology, in order to ensure that students can master theoretical knowledge and have professional skills, it is necessary to adopt penetrating teaching method in teaching design.

This paper expounds that the penetration teaching method is based on the theoretical basis of exerting students' autonomous learning ability and critical thinking ability, and proposes a teaching strategy on how to integrate penetration teaching into the nursing teaching process. Then, the effects of traditional teaching and infiltration teaching method on academic performance and learning ability in the experimental group and the control group were analyzed to prove that the infiltration teaching method can effectively improve the teaching quality.

2. Infiltration Teaching Theory and Strategy

2.1. The Theoretical Basis of "Infiltration" Teaching

2.1.1. Ability to Learn Independently

Self-directed learning refers to the process of assessing learning needs, setting learning goals, choosing appropriate learning strategies, and conducting self-directed learning with the help of others. Self-directed learning emphasizes the learner as the main body of learning, and reflects the modern educational value concept of "student-oriented" [3]. A learning ability demonstrated by students in autonomous learning activities. Self-directed learning ability mainly includes self-management ability, information acquisition ability and teamwork ability [4].

2.1.2. Critical Thinking Ability

Critical thinking is a logical and dialectical way of thinking. It is a kind of thinking ability to understand and analyze the problem from multiple perspectives and find the best solution on the basis of fully understanding the development and changes of the problem [5]. Critical thinking requires people to have independent, comprehensive and constructive insights into the phenomena and things they judge. Only individuals with critical thinking ability can flexibly apply the knowledge and experience they have mastered to analyze and deal with complex situations and states. The process of choosing [6].

2.2. Reflection on Osmotic Teaching Strategies

2.2.1. Analyze the Needs of Nursing Students and Choose Teaching Content Reasonably

Before the application of the penetrating teaching method, it is necessary to deeply analyze the nursing students' learning needs for gastroenterology nursing, and combine the existing teaching conditions to scientifically and rationally design each link of the penetrating teaching model, so that each link of the teaching must have a clear purpose. and moderation, to avoid blindly stacking learning resources or simplifying teaching and affecting the quality of teaching [7]. In addition, in view of the weak basic knowledge of students and limited comprehension ability, the teaching design of the infiltration teaching method needs to consider the characteristics and teaching content of nursing students. To cultivate the self-learning ability of nursing students [8]. Most nursing students have the plan to continue their studies and the pressure of getting a nursing qualification certificate, and they are eager to get scholarships and study honors. Therefore, they hope to learn the knowledge of internal medicine nursing well, but due to the limited channels for acquiring knowledge, the lack of certain independent learning ability and correct learning methods, coupled with the lack of a strong learning atmosphere and the lack of open and transparent teaching evaluation standards, etc. It is difficult to obtain a better learning effect if there is a lack of enthusiasm in learning. Therefore, in the permeable teaching design, it is necessary to carry out a rational design according to the learning needs of nursing students, which cannot bring too much learning burden to nursing students, but also meet students' needs for knowledge [9].

2.2.2. Strengthen Study Supervision and Give Timely Praise and Encouragement

The osmotic teaching method has been applied to nursing education for a relatively short period of time. Due to the long-term influence of traditional teaching, nursing students need to gradually adapt to the changes in their learning methods. In addition, students' autonomous learning ability is not optimistic. For a period of time after the implementation of the infiltration method, teachers need to strengthen supervision and urge nursing students to complete the corresponding learning in a timely manner. tasks, and appropriate application of reward mechanisms to encourage nursing student learning. After each course, the scores of nursing students participating in each learning link will be announced in a timely manner. Nursing students who have performed well will be praised in a timely manner, and nursing students who need to be improved will be reminded in a timely manner.

2.2.3. Strengthen the Teaching Concept and be Good at Solving Teaching Problems

The concept of permeable teaching is the core guarantee for the effective development of learning. Only by adhering to the teaching concept of nursing students as the main body can teachers avoid the situation that the new teaching method cannot continue when setbacks; Knowledge design each class according to the cognitive level and laws of nursing students. In the process of implementing the new teaching law, various problems will definitely arise, and teachers should have the ability to follow and guide them well [10].

2.2.4. Apply Network Technology to Improve Teaching Design Ability

Infiltration teaching also requires teachers to use modern network information technology to continuously improve the ability of teaching design, and improve the level of self-recording teaching micro-videos to supplement the existing teaching resources; current students tend to like animation teaching videos of internal medicine, which are vivid and vivid. The picture helps nursing students to understand the knowledge of internal medicine nursing. In addition, the background data of individual nursing students watching learning videos shows that they have watched but have not actually watched them. This requires teachers to closely follow the video and teaching materials in the setting of pre-class practice questions, or intersperse practice questions in the video to supervise nursing students. learning [11].

2.2.5. Flexible Assignment of Learning Tasks According to Independent Time

Students may affect the learning of internal medicine nursing due to participating in school activities at certain stages of their learning. Therefore, in the process of penetrating teaching, teachers should comprehensively grasp the learning environment of students, not just focus on the teaching tasks of internal medicine nursing. Compared with conventional teaching, osmotic teaching will take up more time for students to study independently, so sufficient spare time is a necessary guarantee for osmotic learning. The amount of materials provided by teachers depends on the content of the course and the learning time of nursing students. It can be flexibly designed to promote the deep learning of nursing students, so as to avoid heavy learning tasks and make nursing students have a perfunctory attitude towards learning.

2.2.6. Active Interaction between Teachers and Students to Create a Good Learning Atmosphere

In the process of penetrating teaching, teachers and students can answer questions through WeChat groups, QQ or learning software. This puts forward higher requirements for teachers' answering rate. It is found in the teaching that the timely interaction between teachers and nursing students can stimulate the enthusiasm and desire of nursing students to explore knowledge. This reminds the nursing teachers of gastroenterology to give timely and appropriate guidance or response to the questions raised by nursing students, and to create a positive learning atmosphere as much as possible. Relevant studies also pointed out that penetrative teaching often requires more time investment, and additional teaching resources and course content are needed to encourage learners to communicate and interact with each other. In addition, in the teaching process, we should constantly listen to nursing students' feelings about osmotic teaching [12].

2.3. Sample Inspection

In order to ensure the reliability of the research conclusions, it is necessary to calculate the minimum sample size to achieve statistical significance. The formula for calculating the sample size is:

$$n = \left[\frac{Z_{\alpha/2} + Z_{\beta}}{\delta / \sigma} \right]^2 (Q_1^{-1} + Q_2^{-1}) \quad (1)$$

Among them, n is the sample size, Q_1 and Q_2 are the sample proportions, and the test level $\alpha=0.05$ is specified, then the table can be obtained $Z_{\alpha/2}=1.96$, and the parameter values of δ and σ are obtained by referring to the literature. The T test formula is:

$$t = \frac{\bar{X} - \mu}{\frac{\sigma_x}{\sqrt{n}}} \quad (2)$$

Among them, \bar{X} is the sample mean, n is the number of samples, and μ is a t-distribution subject to n degrees of freedom.

3. Experimental Research

3.1. Research Purpose

The purpose of this study is to construct an "immersion" learning model for nursing teaching based on students' learning needs for gastroenterology nursing, and to compare the learning model applied to actual teaching activities with the traditional learning model, and to explore "immersion" learning. The influence of the model on the autonomous learning ability, critical thinking ability and academic performance of nursing students, and provide a reference for improving the application of immersion learning in nursing teaching.

3.2. Research Methods

Observation method: Observation method refers to a research method in which researchers observe and record the behavior of individuals or groups to analyze the relationship between them and related factors. The observation method includes natural observation method and experimental observation method. The advantage of observation method is that the observed behavior is completely natural and conforms to the reality of daily life." The application of observation method in this study is mainly to observe students' classroom performance in a timely manner. reflection, and promote the formation of a good classroom atmosphere.

Comparison method: Nursing students were divided into control group(CG) and test group(TG). The CG adopted traditional learning method, and the TG adopted osmotic teaching method. After a period of teaching the same nursing course in gastroenterology, the scores and learning ability of the two groups of students were compared.

4. Analysis of Experimental Results

4.1. Basic Situation of the Two Groups of Students

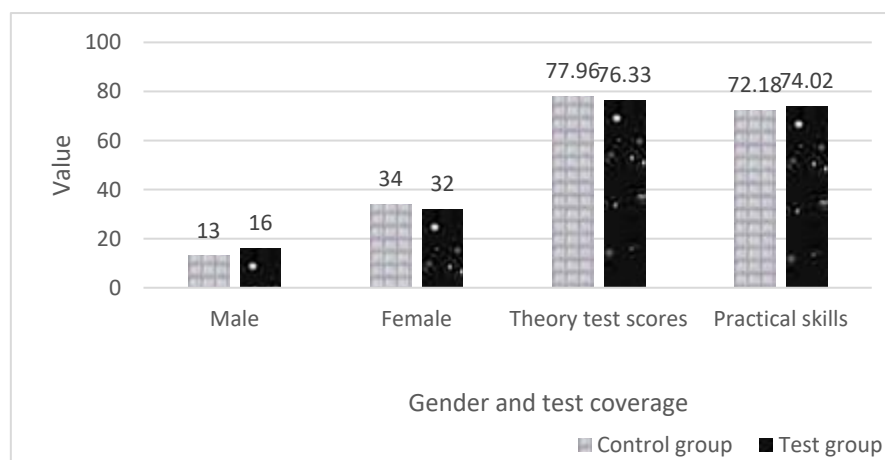


Figure 1: Basic situation of students

Figure 1 shows the distribution of the number of male and female students in the two groups, as well as the theoretical scores and practical skills scores tested before the two modes of teaching are used. From the data in the figure, it can be seen that there are 47 students in the CG, including 13 boys and 34 girls, the TG has a total of 48 people, including 16 boys and 32 girls. Before the teaching test, the average scores of theoretical scores and practical skills of the CG were 77.96 and 72.18, respectively, while the scores of the TG were 76.33 and 74.02, respectively.

Table 1: Gender and achievement tests

	Gender	The score
T value	0.27	0.168
P value	0.345	0.579

As shown in Table 1, the results of the T-test on the age, theoretical scores and comprehensive scores

of practical skills of the two groups of students can be seen. It can be seen that the P values of gender and scores are all greater than 0.05, and there is no statistical difference, indicating that the two groups student achievement is comparable.

4.2. Post-test Scores and Abilities

Table 2: Theory and practical exam score results

	Test group	Control group	T value	P value
Theory test scores	86.34	78.28	3.06	<0.001
Practical skills	83.61	74.93	4.57	<0.001

As shown in Table 2, the average scores of the two groups of theoretical and practical skills test scores are shown. It can be seen that after teaching the two groups with different teaching methods, the scores of the TG are higher than those of the CG, which is compared with the scores in Figure 1, the performance of the TG has improved a lot, that is to say, the infiltration teaching method is more suitable for students' learning needs and can effectively improve their academic performance, and the T-test of the two groups' scores, $P < 0.001$, indicates that the difference in performance is statistically significant ($P < 0.05$).

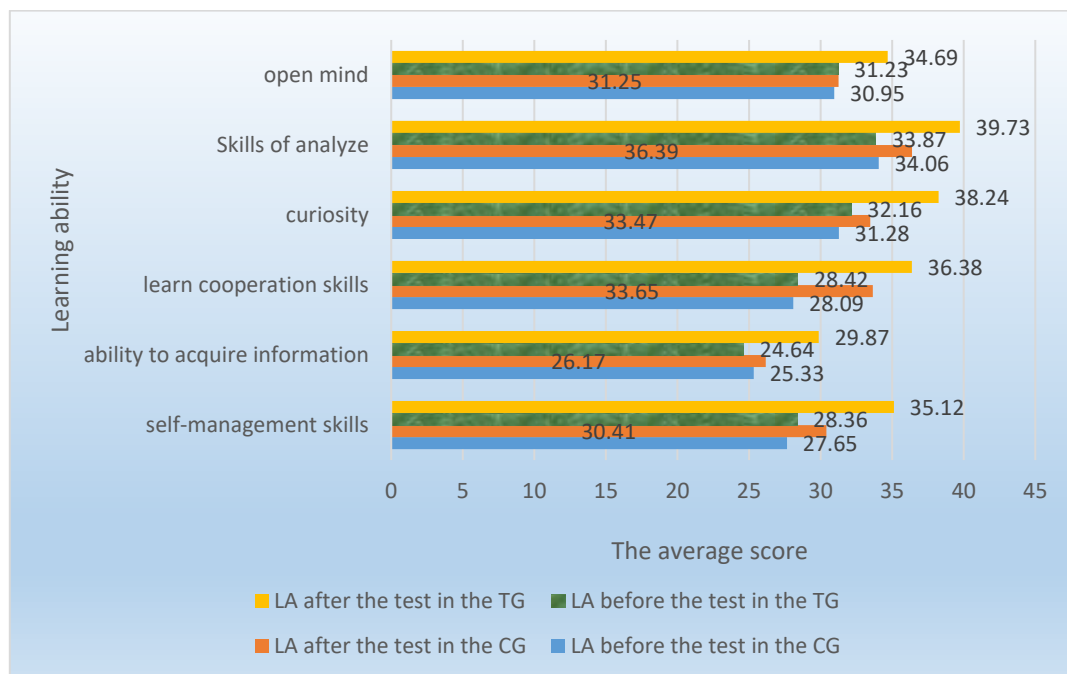


Figure 2: Comparison of the learning ability of the two groups before and after teaching

Figure 2 shows the self-learning ability and critical thinking ability of the two groups of students before and after teaching. It can be found that although the ability of the students in the CG using the traditional teaching method has improved, compared with the students using the penetrating teaching method In the TG, the learning ability of the students in the TG has been improved significantly, indicating that the penetration teaching method is of great help in the students' learning ability.

5. Conclusion

The osmotic teaching method endows teachers and students with more difficult cognitive tasks, which requires teachers and students to have higher cognitive skills, sharper observation and thinking skills, and at the same time use modern teaching platforms to develop learners' cooperative learning, The ability to reflect, criticize, solve problems, and humanistic care. In this paper, after comparing the effects of traditional teaching mode and infiltration teaching mode on the performance and learning ability of digestive internal medicine nursing students, it is found that the infiltration teaching method can improve students' performance and ability to a greater extent. Therefore, colleges and universities should vigorously promote the infiltration teaching method, and the paper also proposes a reflection on the infiltration teaching strategy, hoping to have teaching help to the teachers and students of internal

medicine nursing.

References

- [1] A A K., B P F., E B M., et al. *Magnetic Resonance Imaging Compared with Rectal Endoscopic Sonography for the Prediction of Infiltration Depth in Colorectal Endometriosis*[J]. *Journal of Minimally Invasive Gynecology*, 2017, 24(7):1218-1226.
- [2] Ren H., Liu C., Wang R., et al. *Core Competencies Required for Gastroenterology Nursing Specialists in China*[J]. *Gastroenterology Nursing*, 2019, 42(2):169-178.
- [3] Loyola M., Babb E., Bocian S., et al. *Standard of Infection Prevention in the Gastroenterology Setting*[J]. *Gastroenterology Nursing*, 2020, 43(2):E84-E97.
- [4] Baker K A. *Support for Global Nursing: Nursing Now*[J]. *Gastroenterology Nursing*, 2018, 41(3):187-188.
- [5] Niesen, Cynthia, Tynsky, et al. *Implementation of a Nursing Care Delivery Model: Registered Nurses Providing Cognitive Behavioral Therapy Education for Patients Diagnosed with Functional Gastrointestinal Disorders*[J]. *Gastroenterology nursing: the official journal of the Society of Gastroenterology Nurses and Associates*, 2017, 40(2):176-177.
- [6] Baker K A. *Violence in the Gastroenterology Setting*[J]. *Gastroenterology Nursing*, 2019, 42(5):409-410.
- [7] Loyola M., Bocian S., Babb E., et al. *Management of Endoscopic Accessories, Valves, and Water and Irrigation Bottles in the Gastroenterology Setting*[J]. *Gastroenterology Nursing*, 2020, 43(2):E80-E83.
- [8] Williams S. *Impact of Nursing Interventions on Medication Adherence During Hepatitis C Treatment: State of the Science*[J]. *Gastroenterology Nursing*, 2018, 41(5):436-445.
- [9] Kaur P., Attard T M., Fishman D S., et al. *A Conceptual Framework For Rescheduling Elective Pediatric Gastroenterology Procedures following Covid-19 Pandemic Lockdown*[J]. *Gastroenterology Nursing*, 2020, 43(4):327-329.
- [10] Nt A., Sr B., Ah C., et al. *Nursing teaching role performance from the viewpoint of discharging patient from the Abadan and Khorramshahr hospitals*[J]. *Clinical Epidemiology and Global Health*, 2019, 7(4):611-614.
- [11] Younas, Ahtisham. *The nursing process and patient teaching*[J]. *Nursing Made Incredibly Easy*, 2017, 15(6):13-16.
- [12] Warren N A., Spiegel H L. *Teaching Critical Care Nursing Online for RNs*[J]. *Critical care nursing quarterly*, 2019, 42(1):53-63.