The Design and Practice of Process Guidance Method in Basic Nursing Standardization Skills Training

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Abstract. Objective: to investigate the effect of the process guidance method in basic nursing teaching of clinical nursing students. Method: to apply the process guidance method into clinical teaching to solve problems nursing students will encounter in their practice; to analyze the effect of teaching by questionnaires, nursing students operating completion rates and comprehensive evaluation results. Results: The operation (standardization) completing rates and comprehensive evaluation of the results from the experimental group are better than the control group. And the differences before using the process guidance method and after using it are statistically significant (P<0.05). Conclusion: The process guidance method enhances the effect of internship. It is a new clinical teaching mode of clinical applicability, which is worth being promoted.

Due to the continuous development of medical technology, and the constant changes of medical industry service model, the medical care service environment is becoming increasingly complex, leading to the fundamental change of clinical nursing students practice environment. The standard of nursing profession is more and more valued by the National Health Department. In recent years, the state has reintroduced “Guidelines for Intravenous Infusion”, “Care Classification” and other relevant standards. Standardization has become the highest goal of the nursing profession, however, the homogeneity of the nursing staff has become clinical problem. Therefore it is difficult for nursing students who want to achieve this standard by the traditional teaching methods, which has become a common problem for both clinical teachers and nursing students. And How to combine the simulation training with the actual operation with no gap is the research subject of the nursing educators. So it is necessary to seek an effective teaching method that can not only promote the students’ clinical practice ability, but also develop the ability of thinking in clinical practice, to cultivate more practical talents to meet the needs of clinical nursing industry. Therefore, to explore how to improve the students’ learning basic nursing skills, how to cultivate the students’ comprehensive quality and high quality is an urgent problem to be solved[1]. The process guidance method is a kind of method which is associated with the learning process, especially in dealing with the obstacle in learning. Since some problems cannot be predicted and completed by simulation teachings, to overcome these obstacles, this study attempts to carry out clinical teaching by the process guidance method and good results have been achieved. And now report as follows.
Reference and Method

General Reference

From May 2011 to May 2012, 40 undergraduate nursing students were selected from the top three hospitals in Jilin as the control group. From June 2012 to June 2013, 40 undergraduate nursing students were also selected from the top three hospitals in Jilin as the experimental group. Inclusion Criteria: full-time undergraduate nursing students to complete the basic nursing operation more than 20 hours in school. Informed consent and voluntary participation in this study. It is comparable since there is no significant difference in gender, age or professional knowledge of nursing students (P>0.05). Besides, 80 teachers were also chosen in clinical practice. Inclusion Criteria: associate professor with bachelor degree or above with clinical teaching qualifications and rich experience in teaching; to select intravenous infusion, intramuscular injection, nasal feeding and urethral catheterization four implant operation as the research subject.

Research Methods

Finding the Problem

Nursing students will encounter a lot of obstacles in the process of practice. For example, they may not completely digest the knowledge from the teachers or even have no idea about how to get effective information by integrating and filtering. If the teacher does not help nursing students in time to ease the obstacles, they can neither go on Learning, nor learn efficiently, so that they may fail to reach the effect of practice. So it has become a major problem in the teaching of clinical nursing that how to make interns remember the steps of operation effectively, completely and easily\textsuperscript{[2]}. Simulation training is applied in the teaching of basic nursing in school, while, real operation is carried out in clinical practice. Most students cannot flexibly apply the theoretical knowledge learned in books and in class to the clinical practice and make use of these knowledge to provide effective services for patients\textsuperscript{[3]}. With the high quality nursing service concept, when nursing staff carry out the implantation operation, they should minimize the pain of patients and reduce the rate of failure. Due to the different feelings and needs of different service objects, nursing students in clinical practice will have a variety of obstacles in practice, resulting in learning difficulties, which is difficult for nursing students who have been used to simulation practice.

Plan Setting

Teachers will introduce the environment to nursing students who first get into the department. Then students will start to learn the related rules and regulations and to begin their internship in accordance with the requirements of teaching outline for practice.

The Control Group: Students are taught with traditional teaching combined with PBL teaching.

The Experimental Group: The clinical teachers are provided training. The process guidance method is applied into the clinical teaching by teachers on the basis of PBL teaching. The problems in the operation of nursing students are recorded by teachers and then the solutions will be under discussion by using the process guidance method.
Implementation Plans

The Control Group: Being introduced the environment; the nursing students get into clinical practice led by their teachers.

The Experimental Group: (1) The clinical teachers are asked to regulate the operation standard, even in every link and each step. They are illustrated the application of the process guidance method. The training is put into the end after examination, which shows all the teachers have grasped it clearly. (2) Teachers put the process guidance method into the four implant operations of the experimental group. (3) Before nursing students enter the clinical practice, the teachers take intensive training in clinical nursing operation, which means that nursing students repeat practice in accordance with the teacher’s demonstration of the operating steps until they have a good grip of operating procedures and finally develop a good habit of standardized operation[4]. In this process, after finding that some students have less learning motivation or may be tired of learning, teachers promptly set up learning goals for nursing students, in order to stimulate their motivation to learn and to trigger their learning intention. With learning goals, nursing students work harder and harder. But after teacher’s process guidance, students still learn hastily without thinking. Therefore they cannot fuse with the information in the cognitive structure leading to difficulty in digestion. Hence, teachers use associative memory, combined with clinical practice, to help students achieve effective memory and to eliminate the “indigestion”. In the operation students often cart into the ward without wearing masks, which is such a bad habit that will cause many obstacles in the learning process. Therefore teachers repeat norms again and again to change their wrong habits, making their learning process smooth. Only by the time that nursing students become skilled in operation under the teachers’ guidance, will they be led into the clinical operation.

Evaluation Methods

After counting the performance of two groups, teachers hand out the questionnaires to patients to investigate their satisfaction. Teachers summarize two groups’ common obstacles in the operation and evaluate them by difficulty scores, with 10 being the best. Nursing students will fill out the Self Rating Anxiety Scale - ZUNG’s Anxiety Scale, in order to grasp their psychological status, and to prevent the problem caused by the occurrence of psychological setbacks. At the end of the internship, the ability of these two groups is assessed. The evaluation standard can be referred to Basic Nursing, the fifth edition, issued by the People’s Health Publishing House and the 50 skills’ operating standards for the development of operational project scoring standards and skills requirements, issued by the state.

Statistical Analysis Methods

The data is collected and analyzed by using statistical software spss17.0. And two sets of data is compared with t test and $\chi^2$ test. With $p<0.05$, the difference is statistically significant.

Research Results

The survey results show that the overall patient satisfaction of the experimental group reaches 95% and the control group’s reaches 87.5%. The patient satisfaction survey results of two groups are as shown in Table 1.
Table 1. Comparisons on Patient Satisfaction of Two Groups.

<table>
<thead>
<tr>
<th>Group</th>
<th>The Number of Cases(n)</th>
<th>Unsatisfactory</th>
<th>General</th>
<th>Very Satisfactory</th>
<th>Satisfaction Degree</th>
</tr>
</thead>
<tbody>
<tr>
<td>The Control Group</td>
<td>40</td>
<td>5</td>
<td>24</td>
<td>11</td>
<td>87.5%</td>
</tr>
<tr>
<td>The Experimental Group</td>
<td>40</td>
<td>2</td>
<td>10</td>
<td>28</td>
<td>95.0%</td>
</tr>
<tr>
<td>$\chi^2$</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>P</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>$&lt;0.05$</td>
</tr>
</tbody>
</table>

According to the results, the ratio of the experimental group who can operate independently reaches 85.0%, while, the ratio of the control group is only 57.5%. The independent operation statistics of two groups are as shown in Table 2.

Table 2. Comparisons on operating completion by self-institution of two groups.

<table>
<thead>
<tr>
<th>Group</th>
<th>The Number of Cases(n)</th>
<th>The Number of Independent Operation Students</th>
<th>The Number of Dependent Operation Students</th>
<th>The Independent Operation Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>The Control Group</td>
<td>40</td>
<td>23</td>
<td>17</td>
<td>57.5%</td>
</tr>
<tr>
<td>The Experimental Group</td>
<td>40</td>
<td>34</td>
<td>6</td>
<td>85.0%</td>
</tr>
<tr>
<td>$\chi^2$</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>P</td>
<td></td>
<td></td>
<td></td>
<td>$&lt;0.05$</td>
</tr>
</tbody>
</table>

Nursing students of experimental group and control group evaluate obstacles in the operation by difficulty scores. The result shows two aspects have high scores: the chaotic operation steps and the disordered disinfection sequence. The difficulty scores statistics on obstacles of two groups are as shown in Table 3.
The positive rate of the experimental group is reduced from 62.5% to 12.5% after practice; the positive rate of the control group is reduced from 67% to 27.5% after practice, which can be seen that the psychological anxiety of nursing students in the experimental group is improved greatly. The self-evaluation statistics from Self Rating Anxiety Scale -ZUNG’s Self Rating Anxiety Scale of two groups are as shown in Table 4.

### Table 4. Comparisons on Anxiety in Self-Evaluation of Two Groups before and After Practice.

<table>
<thead>
<tr>
<th>Group</th>
<th>The Number of Cases</th>
<th>Before Practice</th>
<th>In Practice</th>
<th>After Practice</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Positive</td>
<td>Negative</td>
<td>Positive</td>
</tr>
<tr>
<td>The Control Group</td>
<td>40</td>
<td>27</td>
<td>13</td>
<td>67.0%</td>
</tr>
<tr>
<td>The Experimental</td>
<td>40</td>
<td>25</td>
<td>15</td>
<td>62.5%</td>
</tr>
</tbody>
</table>

The theoretical knowledge score in the experimental group(91.60±5.90) is higher than that in the control group(85.40±2.10). The operation performance score of the experimental group (93.29±1.94) is higher than that of the control group (83.73±2.77). The evaluation statistics of two groups are as shown in Table 5.
Table 5. Comparisons on the Evaluation Results between Two Groups (Score, x ± s).

<table>
<thead>
<tr>
<th>Group</th>
<th>The Number of Cases</th>
<th>The Theoretical Knowledge Score</th>
<th>The Operation Performance Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>The Control Group</td>
<td>40</td>
<td>85.40±2.10</td>
<td>83.73±2.77</td>
</tr>
<tr>
<td>The Experimental Group</td>
<td>40</td>
<td>91.60±5.90</td>
<td>93.29±1.94</td>
</tr>
<tr>
<td>t</td>
<td>7.50</td>
<td>3.17</td>
<td></td>
</tr>
<tr>
<td>P</td>
<td>&lt;0.05</td>
<td>&lt;0.05</td>
<td></td>
</tr>
</tbody>
</table>

Discussions

Nowadays the development of medical nursing care has put forward higher requirements for the comprehensive quality of nursing personnel[5]. Training students’ practical ability and innovative thinking is one of the main objectives of higher nursing education. It is the ultimate goal of our teaching to make the students apply the knowledge and skills that have been studied to solve the problem in practice[6]. According to the investigation and analysis, 37% students do not reach the required standard in some of the implantable basic nursing operation, and some nursing students’ operating time is even zero. Due to their nonproficiency in operation, too much willingness of simulation and excessive psychological pressure, the success rate of operation is quite low. In order to improve the clinical teaching management and the quality of clinical teaching, to adapt to the needs of modern nursing mode and nursing education reform, to train qualified personnel for the nursing team, this study has important significance in the application of process guidance method in clinical teaching.

To Deepen the “People-Oriented” Service Concept and to Improve the Future Job Competency of Nursing Students

Under the environment of medical reform in terms of high quality nursing service, we should deepen the “People-Oriented” service concept and advocate “Service for Patient’ Feeling”, patient’s feeling as the first. We need to cultivate nursing students’ consciousness of perspective-taking to respect patients and to dedicate their compassion. Furthermore, we should also standardize nursing behavior, carry out the basic care, manifest services with details, and implement personalized nursing as “individualized care”. According to the results of Table 1 and Table 2, the patient satisfaction survey result of the experimental group reaches 95.0%, while, that of the control group is only 87.5%; the independent operation rate of the experimental group is 85.0%, which is higher than that of the control group by 57.5%. From clinical practice we can see that nursing students have a strong emotional desire to experience in learning. But if they are unable to overcome the obstacles, their enthusiasm will decrease. The teachers of experimental group mobilize the students’ desire and willingness to experience by means of process guidance method, let them learn while thinking, think while suspecting. And the final purpose is to help them find the key to the question, achieve development from understanding, learning accompanied by thinking, and broaden approaches. In this way can students become real creators and shift from “passive learning” to “positive
learning”. At the same time, we should provide more practical opportunities for nursing students to help them integrate knowledge into cognitive structure, so that students can gain comfortable sensation of easy digestion and the pleasure of learning to enable themselves to resolve the situation tactfully in the face of clinical emergency. What else we should do are to cultivate the students’ ability of design and analysis before operation, the ability to discuss details in operation, and the ability of reflection after operation. This research aims at exerting phased intervention on the operation refinement of basic nursing, and achieves good results including enhancing the core ability of students in their future nursing team and providing quality assurance for the safety of patients.

**Simplifying the Operation Process and Forming a Permanent Memory**

According to the evaluation of two groups on obstacles in the operation by difficulty scores, two aspects have high scores: the chaotic operation steps and the disordered disinfection sequence, which This fully shows that the nursing students cannot simplify the complicated information, have difficulty in transforming or condensing information, and are not able to memorize the information in the cognitive structure firmly, leaving cognitive structure in the state of disorder and disfluency. Teachers should make use of process guidance method to regulate the operation, direct students to condense and simplify the memory of the key words, formulas, symbols, graphics, definitions, knowledge tree, etc, which could be memorized easily and help them memorize knowledge vividly. Students are not allowed to enter the clinical operation before they are familiar with the operation and pass thorough each examination. If students keep the procedure by heart, there would be no chaos in operation. If they use thinking to lead action, then there would be the permanent joint memory of the two. By doing these, they can enhance the probability of success, improve the competence for future post and get into the role in clinical work after graduation smoothly and fast. In this way, the classroom theory teaching and clinical practice teaching can be combined in an organic way. At the same time, students are capable of having skills to master the industry standard, and forming a permanent professional set, being applied into clinical work with standardization.

**Finding Students’ Psychological Problems in Time to Give Them Support**

Since most of nursing students directly leave their school, a relatively simple ideal learning environment, to get into the complex working environment, they would be in face of all sorts of pressure sources, and the great psychological gap will lead to changes in their occupational values. Clinical practice of nursing students has 3 important psychological stages: psychological adaptation period, psychological stability period, and psychological instability period. Becker research shows that the psychological stress of nursing students exists in every period of practice. In clinical teaching management we need to further strengthen the cultivation of students’ psychological quality, and give psychological health seminars to students in different psychological state to help them adjust their mentality timely. In the practice, some patients and their family have bad attitudes, but high nursing quality requirement, and excessive expectations for treatment, which exerts great psychological pressure on students, makes them anxious, affects their enthusiasm for operation, or even forces some of them to give up the operation. Because it is impossible for students to achieve self-adjustment alone in practice, teachers must give them targeted and strategic interventions.
with effective teaching. In terms of psychological adjustment, we should put forward scientific intervention measures for the individual differences of nursing students\[10-11\]. In order to investigate the psychological status of nursing students, this study refers to Self Rating Anxiety Scale -ZUNG’s Self Rating Anxiety Scale, and instructs students to do the self-evaluation before the practice, during the practice and after the practice. If the student’s total score is positive, greater than 40, he or she is believed to have anxiety. The result of this study shows that the positive rate of the experimental group is reduced from 62.5% to 12.5% after practice; the positive rate of the control group is reduced from 67% to 27.5% after practice; the positive rate of the experimental group, 12.5%, is less than that of the control group, 27.5%. It proves that it is of great help to improve the anxiety of nursing students by using the process guidance method, which improves their psychological endurance and adaptability, enhances their emotional experience and much more care from their teachers, at the same time, also reduces the job burnout and abandon of career.

**Update Teaching Concept and Improve Teaching Effect**

Clinical practice, as the core of nursing education, requires highly skilled and competent clinical teachers with noble professional morals\[12\]. Therefore, it is necessary to constantly update the teaching concept and improve the teaching effect. And teachers must have the concept of modern medical education, deepen the concept of holistic nursing, and guide students to work with it. This study shows that The theoretical knowledge score in the experimental group is (91.60±5.90),while that in the control group is (85.40±2.10); the operation performance score of the experimental group (93.29±1.94)is higher than that of the control group (83.73±2.77).This proves that, based on PBL teaching, using the process guidance method can improve student achievement in all round so as to improve teaching effect. While attaching importance to the students’ medical knowledge learning, teachers also value the training of clinical skills, and pay more attention to the dialectical relationship between the two and the development of students’ intelligence. In the teaching practice, teachers should hold the right direction of teaching and play the leading role much better.

In summary, strengthening the management of clinical education and improving the process of teaching are not only the basis of improving the quality of teaching, but also the guarantee to cultivate clinical practical people. In the practical teaching, clinical nursing educators should adopt various teaching methods, learning from each other, to further improve the teaching quality of clinical nursing\[13\]. Since the traditional clinical teaching method ignores the students’ feedback on the teaching effect and teachers are too busy with their work to ignore instructing the details, process guidance method, based on PBL teaching will further refine the operation and fully develop the potential of students in learning. To carry out PBL teaching needs students to collect a large amount of information, combined with a wealth of theoretical knowledge. The application of PBL teaching in clinical practice can enrich the students’ theoretical knowledge, develop their critical thinking\[14\], but cannot cultivate their practical ability. Whereas, on the basis of PBL teaching, applying the process guidance method could not only increase the theoretical knowledge, but also enhance the ability of both practice and theory, combining theory with practice to improve the clinical teaching. The process guidance method is concerned with helping nursing students solve the problems of social communication barriers, professional technical difficulties, individual job burnout, and serious psychological and emotional problems encountered in the practice. In addition, the process guidance method can also evaluate practice effect comprehensively, improve nursing
students’ overall quality, and integrate the new theory system of psychology and behavior to come into the formation of the new concepts of clinical nursing teaching.

References


