Graduate students as preceptors: Effects on clinical teaching outcomes of medical nursing

Lu Lin a, Yun-Ying Hou a, Xiao-Hua Wang a,*, Yan-Xia Han b

a The First Affiliated Hospital of Soochow University/School of Nursing, Soochow University, Suzhou, China
b The First Affiliated Hospital of Soochow University, Suzhou, China

**Abstract**

**Purpose:** To explore the feasibility of using graduate students as preceptors in the clinical education of medical nursing students.

**Methods:** Five second-year graduate nursing students were recruited to participate in the clinical teaching of medical nursing for 38 undergraduates in the first semester of the 2010–2011 academic year, divided into two groups. The first group first received clinical teaching in caring for respiratory diseases from graduate preceptors for six weeks followed by clinical teaching in caring for circulatory diseases from nurse preceptors for six weeks. The second group received clinical teaching in the reverse order, from the nurse preceptors followed by the graduate student preceptors. Following training, all students were examined with a written test and scores were compared. In addition, review meetings were held to evaluate the teaching outcomes.

**Results:** No significant differences in test scores were observed between the two teaching groups. Undergraduate student feedback indicated that the training provided by the graduate students was satisfactory, and the medical nursing course leader was satisfied with the teaching outcome with a few exceptions.

**Conclusion:** These data indicate that graduate students are capable of training undergraduates in medical nursing, although some areas can be improved.

Copyright © 2014, Chinese Nursing Association. Production and hosting by Elsevier (Singapore) Pte Ltd. All rights reserved.
1. Introduction

Clinical training is focused on working directly with patients and their problems [1], and such courses typically place both preceptors and students in a clinical scenario. For undergraduates majoring in Nursing, "Medical Nursing" is a core course that requires an extensive knowledge and practice in clinical settings. Training in this course plays a decisive role in the cultivation of proficient student nurses. Currently, Medical Nursing preceptors are primarily nurses from clinical settings. These preceptors have a firm grasp of clinical nursing skills and are aware of the latest developments in clinical nursing, furthermore they are proficient at clinically oriented teaching styles and comprise the majority of the clinical teaching force. However, due to the large number of undergraduate students coupled with shortages of nursing staff in comprehensive teaching hospitals, there is a shortage of adequately trained preceptors for undergraduate clinical courses [2].

As a potential solution, graduate students of nursing who have undergone strict screening and assessment have begun to join the teaching force. These students have a solid theoretical basis, and evidence suggests that student preceptors can be as good as associate professors in teaching clinical skills [3]. When successful, the preceptorship by graduate students can solve the problem of preceptor shortage, while providing graduate students with a better understanding of clinical nursing practices [4]. Moreover, the preceptorship experience provides an all-round competence development model for the graduate students themselves. The aims of this study were to explore the feasibility and efficacy of using graduate students as preceptors in clinical teaching of Medical Nursing and to assess whether they can achieve the desired teaching outcomes.

2. Methods

The study was a prospective comparative design.

2.1. Participants

A class of 38 fourth-year undergraduate students (in their 5th year of study) in the First Affiliated Hospital of Soochow University School of Nursing was recruited for the study in June, 2010. All of the subjects received clinical placement in the same hospital. The study spanned the first semester of the 2010–11 academic year (September through December, 2010), when the Medical Nursing course was offered.

2.2. Preceptor recruitment and training

Graduate student preceptors were pre-assessed by the faculty from the Medical Nursing Teaching and Research Division for their professional knowledge and teaching skills, followed by a round of trial clinical teaching. After screening, five second-year full-time graduate students of nursing were recruited to participate as clinical preceptors of medical nursing during the first semester of the 2010–2011 academic year. Among the five students, one had eight years of relevant work experience while the rest did not. All five nurse preceptors included in the study had more than three years of experience in clinical teaching of medical nursing.

The graduate preceptors received two rounds of pedagogical training from the course leader, identical to the previous training received by the nurse preceptors. The first round of training focused on nursing pedagogy, including the key elements in teaching preparation and popular teaching methods such as the application of nursing processes in clinical teaching. The second round of training was focused on specialty nursing.

2.3. Clinical teaching arrangement

The 38 undergraduates being taught were divided into two groups of 19 members according to their student numbers in ascending order. To ensure the two groups were comparable, we compared their average scores from two prerequisite courses (fundamental nursing and health assessment). In addition, the two groups were comparable because they would receive clinical teaching of Medical Nursing in the same ward of the same hospital for the same amount of time. Prior to the study, the two groups had the same amount of extracurricular clinical placement on average.

Both the graduate students and nurse preceptors adhered to the same syllabus, but their teaching plans were not identical. The first group (hereafter referred to as Students No. 1–19) first received clinical teaching in caring for respiratory diseases from graduate preceptors for six weeks (18 credit hours in total) followed by clinical teaching in caring for circulatory diseases from nurse preceptors for six weeks. The second group (hereafter referred to as Students No. 20–38) first received clinical teaching in caring for respiratory diseases from nurse preceptors followed by clinical teaching in caring for circulatory diseases from graduate preceptors for the same time periods.

2.4. Outcome measures

The undergraduate students were evaluated by preceptors using 2 comprehensive performance scores based on criteria described in the course syllabus (one for the flexible application of nursing process, the other for the ability to address patients’ problems, the full score being 5 each). In addition, the undergraduates completed two written exams covering nursing for respiratory and circulatory diseases (with the full score being 40 each). The written test was prepared by the course leader and graded by the teachers responsible for the theoretical teaching of medical nursing.

The exams included definition, fill-in-the-blank, multiple choice, and short answer questions along with case analyses. Both graduate and nurse preceptors were unaware of the contents of the test. Following examinations, a comparison of the four scores was made between Students No. 1–19 and Students No. 20–38.

During the course of examinations, the course leader paid ongoing attention to the teaching outcomes via the following three means: (1) overseeing the clinical teaching each time; (2) hosting two review meetings in the middle and at the end of the semester respectively (consisting of the
course leader and five randomly selected undergraduate representatives; (3) having end-of-term individual discussions with the graduate preceptors and providing feedback regarding their clinical teaching performance. A comprehensive evaluation of the teaching outcomes was conducted using appraisal by both the undergraduates and course leader [5].

2.5. Statistical analysis

Score comparisons between the two student groups were assessed using a T-test to compare the mean scores (±standard deviation). All analyses were performed with a statistical significance threshold of 0.05, using SPSS 16.0 (SPSS, Inc., Chicago, IL, USA).

3. Results

3.1. Baseline data of two student groups

The baseline scores of health assessment and fundamental nursing skills of Students No. 1–19 and Students No. 20–38 were 73.47 ± 8.37 and 76.58 ± 9.46 (n = 19, p = 0.45) respectively. This assessment demonstrated that both student groups were of comparable abilities prior to the clinical training assessed in this study.

3.2. Comprehensive performance scores and written test scores

No significant difference between comprehensive performance scores was detected between the two undergraduate student groups (Table 1). Students No. 1–19 scored lower for their ability to address patients’ problems, and higher for the application of nursing processes, compared to Students No. 20–38. However, these differences did not reach statistical significance. In addition, no significant differences were observed between the end of term written exam scores of both student groups (Table 2). These data suggest that both student groups received equivalent clinical training.

3.3. Assessment of educational outcomes

During review meetings, all five randomly selected undergraduate representatives provided positive feedback regarding the clinical teaching by graduate preceptors. The students further admitted that the undergraduate students themselves were largely to blame for most of the problems that occurred during the clinical practicum. In addition, the undergraduates provided suggestions to improve clinical teaching management. For example, they suggested that performing an attendance check prior to each practice class; that the practice report be both scientific and flexible rather than dull and boring; and that performance evaluation should take participation and awareness for humanistic care into account. Based on these reviews, the course leader asked the undergraduates to hold panel discussions to design measures for clinical teaching outcomes of medical nursing and submit a written report so that their suggestions could be implemented under the supervision of preceptors next semester.

While overseeing the clinical teaching process, the course leader gave positive comments on the teaching preparation of graduate preceptors for the following reasons: 1) they were well prepared, went to the wards early, and prepared the cases beforehand; 2) they demonstrated great patience with working with patients, which facilitated patient cooperation; 3) they had a solid theoretical foundation; 4) they were earnest and up to date on the latest relevant nursing research literature. Based on these evaluations, the graduate student preceptors effectively achieved the desired teaching outcomes.

4. Discussion

Graduate students receive formal training in their postgraduate study, but receive relatively little training in dealing with patient issues in the clinical setting. Therefore, graduate and nurse preceptors each have their benefits and drawbacks in clinical teaching as our study indicates. While quantitative assessments indicate that the undergraduate students received adequate training from graduate student preceptors, subsequent review meetings suggested there are some areas that could be improved.

4.1. Inadequate attention before class led to problems after class

Prior to clinical teaching, the graduate students would make a thorough preparation of the cases and write a detailed teaching plan. However, they were unprepared for some traits of the undergraduates that led to the following problems after class. (1) Attendance: Some undergraduates thought that the graduate preceptors would be less rigid than nurse preceptors, thus their absence would be unnoticed. Another result of this assumption was that many students did not take adequate

---

Table 1 – A comparison of the comprehensive performance scores between Students No. 1–19 and Students No. 20–38.

<table>
<thead>
<tr>
<th>Item</th>
<th>Students No. 1–19</th>
<th>Students No. 20–38</th>
<th>t</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flexible application of nursing process</td>
<td>3.76 ± 0.65</td>
<td>3.39 ± 0.59</td>
<td>1.94</td>
<td>0.77</td>
</tr>
<tr>
<td>Ability to address patients’ problems</td>
<td>2.94 ± 0.50</td>
<td>3.24 ± 0.42</td>
<td>1.82</td>
<td>0.06</td>
</tr>
</tbody>
</table>

Table 2 – A comparison of the written test scores between Students No. 1–19 and Students No. 20–38.

<table>
<thead>
<tr>
<th>Item</th>
<th>Students No. 1–19</th>
<th>Students No. 20–38</th>
<th>t</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Respiratory system</td>
<td>28.21 ± 3.82</td>
<td>27.68 ± 3.59</td>
<td>0.44</td>
<td>0.66</td>
</tr>
<tr>
<td>Circulatory system</td>
<td>28.61 ± 4.91</td>
<td>29.60 ± 4.36</td>
<td>0.66</td>
<td>0.52</td>
</tr>
</tbody>
</table>
notes during clinical practice. (2) Inappropriate attire: Some undergraduates did not wear nurse caps, masks or nurse shoes when in clinical settings and some even wore slippers to wards.

This problem could be alleviated by additional instruction from the course leader regarding the approaches to clinical practice as well as practicum discipline and assessment criteria. The graduate preceptors should be asked to strictly conform to the assessment criteria and ask the undergraduates to wear authorized uniforms to practicum, and instruct the students to correct any violations prior to resuming their practicum. The students’ attendance, participation and attire should all be recorded and taken into account in the final evaluation. In addition, other measures can also be applied to boost the students’ motivation in learning [6].

4.2 Solid theoretical structure vs. insufficient clinical experience

The graduate students of Nursing were conducting research on the nursing care for specific diseases at the time of this study. As a result, they had a solid theoretical structure and tended to strictly conform to the teaching syllabus [7]. They preformed systematic reviews to help students understand the class material, and were very well prepared to teach the subject matter. For example, one graduate preceptor who did clinical teaching on heart failure, prepared by reviewing literature in relevant fields such as medical nursing, cardiovascular nursing, emergency nursing, electrocardiography and, health assessment and so on; and worked with nurse preceptors to develop a teaching plan.

Since the majority of graduate students (80%) entered their master’s program directly after undergraduate training, they lacked clinical experience. Compared to nurse preceptors, the graduate students were less proficient at the latest nursing techniques, specifically for specialty nursing. This made the graduate student less well prepared to adequately solve unexpected patient problems, such as psychological needs, how to respond to monitor malfunctions, and dealing with uncooperative patients. To alleviate this problem, graduate preceptors should enlist the help from nurse preceptors before class to draw upon the latter’s rich clinical experience, update their knowledge, and learn to anticipate and resolve patient problems, which will add to their reservoir of clinical knowledge and skills.

4.3 Lack of affinity and “awesomeness”

The majority of the graduate student preceptors had just completed their undergraduate training, thus there was only a minimal age gap between them and the undergraduates. In theory, the graduate students preceptors would share some common traits and interests with their undergraduate students, which could spur the undergraduates’ interest in learning. However, this study indicates that the relationship between of graduate and undergraduates was not as strong as expected. In particular, the appropriately strict teaching style of the graduate preceptors made some of the undergraduates rebel against them. The graduate preceptors also created a more solemn teaching atmosphere with little humor, which may have adversely affected the undergraduate students’ responses and teaching outcomes. Moreover, the nervousness of graduate preceptors resulted in more immature teaching and weakened the “awesomeness” required as preceptors. To solve this problem, graduate students can enrich their teaching experience prior to training undergraduates. In particular, increased focus on trial teaching and honing of their teaching skills so that they can improve their personal charisma, win the respect and attention of undergraduates, to increase learning enthusiasm and guarantee the teaching outcomes.

5. Conclusion

Overall, graduate students are competent for the clinical teaching of medical nursing, but some areas may require improvement and additional training. Apart from receiving pedagogical training in clinical preceptorship and mastering relevant knowledge points, graduate preceptors should also be trained to pay attention to students’ attitude towards learning and improve their ability to address clinical issues.

6. Study limitations

The limitations of this study lie in the heterogeneity of teaching plans, the small sample size of graduate preceptors, and the absence of a reliability and validity test for the evaluation criteria. Future studies to assess undergraduate nursing education techniques should incorporate these changes.

Funding

This study was funded by the Teaching Reform Project of Soochow University.

Conflicts of interest statement

We declare no potential conflicts of interest with respect to the research and/or publication of this article.


