



The Effect of Applying Peer Assist Model on Clinical Performance of Nursing Students

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DOI: [10.22037/anm.v32i2.41564](https://doi.org/10.22037/anm.v32i2.41564)

Submitted: 04 Oct 2022

Accepted: 10 Feb 2023

Published: 15 Apr 2023

Keywords:

Peer Assist Model
Clinical Performance
Nursing Students

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How to cite:

Pourgholam N, Poortaghi S, Tajalli S, Ashghali Farahani M, Azami M. The Effect of Applying Peer Assist Model on Clinical Performance of Nursing Students. *Adv Nurs Midwifery*. 2023;32(2):34-39. doi: [10.22037/anm.v32i2.41564](https://doi.org/10.22037/anm.v32i2.41564)

Abstract

Introduction: Clinical educations are the most important part of nursing education. One of the ways to develop the clinical performance of nursing students is to use the Peer Assist Model. Therefore, this study was conducted to determine the effect of using the Peer Assist Model on the clinical performance of nursing students.

Methods: The present study is experimental which was conducted in 2019-2021. The study population consisted of nursing students of the seventh and eighth semesters of undergraduate nursing and midwifery schools in Iran medical science universities. The samples were 160 students who were randomly assigned to intervention and control groups. At the end of the first day of the internship, the students who had the highest performance appraisal score were selected and after 6 hours of teaching the principles of peer review, they acted as peers in the following days, respectively. Data collection tools included demographic questionnaire that is nursing students' performance scale with 28-item that was designed by Karayurt et al. This instrument designed for evaluate the performance of nursing students in clinical settings. Data were analyzed using descriptive and inferential statistics and SPSS software version 23.

Results: After the intervention, scores showed three areas: professionalism ($P < 0.001$), ethical principles ($P < 0.001$), nursing process ($P < 0.001$), and in General Student performance in clinical settings ($P < 0.001$) in the intervention group was significantly higher than the control group. The effect size of nurses' performance evaluation was 3.33 (3.82, 2.86). Considering that the Cohen effect size of nursing students' performance evaluation scores and its dimensions was more than 0.80, so the effect of the intervention in evaluating its effect on the studied variables was high.

Conclusions: Given the importance of establishing appropriate professional communication between nursing students and the effect that Peer Assist Model (PAM) can have on improving the level of clinical education, using this model will improve students' clinical performance at a broader level.

INTRODUCTION

Nursing is a complex, clinical and practical profession and therefore, the importance of clinical education in it, is more than theoretical education[1]. Clinical nursing education is an integral part of theoretical education and these two are complementary to each other, but clinical education is different and more complex than theoretical education[2]. Clinical education accounts for the largest amount of time and resources in contemporary nursing programs[3]. Developing leadership skills requires a collaborative effort with effective clinical educator and experiential learning. Clinical educator helps students develop their clinical judgment, improve patient outcomes through effective nursing interventions, and build appropriate interpersonal relationships in the ward[4]. In nursing education, the clinical educator acts as a role model for the nursing profession and provides clinical opportunities that improves learning skills and nurture nursing skills[5]. In a phenomenological study, students' interaction in their work is greater when ward nurses identify students as their future collaborators[6]. One of the biggest challenges of clinical courses is achieving clinical goals without the full presence of clinical educators[7]. Reducing or improving these challenges requires the cooperation of clinical educators, clinical staff, educational supervisors, head nurses, nursing managers, educational planning officers, and other senior management officials. Nursing educators seek innovative adult education methods to teach students how to think critically, reasonably, and make effective clinical judgments[8].

This is a new student role called "Peer Assist". A clinical tool that helps nursing students and others manage multiple patient assignments while providing leadership opportunities during clinical rotations. At the same time, clinical faculty can manage multiple students with appropriate patient quotas[9].

The goal of the Peer Assist Model index is to develop leadership potential by coaching nursing students in time management, critical thinking, recognizing important priorities and colleagues' skills[9].

The peer assist model is a powerful tool for personal information management. The basic purpose of this approach is to find solutions to problems and enable group learning. A peer review is an event that brings together colleagues to share their experiences, understandings, and knowledge about an identified issue or problem. Peer help is a simple activity that is very useful for knowledge transfer and is seen as a practice of asking for help[10]. This article explains how the peer-assisted model works and why it benefits both students and educators. Peer assist is used in different ways and widely in clinical education [11-14], In our search, no study was found in Iran until the time of this research and the use of Peer Assist Model (PAM) with

the cooperation of students of the same class with the specified instructions. The PAM is a new student role used as a clinical tool to assist nursing students and clinical educator in managing multiple patient tasks during clinical courses. The overall goal of the peer model is to develop leadership potential by coaching nursing students in time management, critical thinking, prioritization, and collaboration skills[7].

In some nursing literatures, Peer assist is recognized as a new teaching strategy in nursing education for staff development as well as for nursing students in learning nursing skills. Peer coaching, in both staff development and student learning, reinforces mutual respect, encourages constructive feedback, builds trust, and increases nursing confidence in clinical practice[15, 16]. If the goals match the level of students, the PAM can be compatible with different levels of clinical courses and be effective in meeting clinical expectations as well as preparing students to gain a better understanding of the role of the professional nurse[7]. Students and clinical educator achieve positive learning outcomes when they have mutual respect and share responsibilities for achieving learning goals[17]. Collaboration of other students with a peer student in dedicated patient management enhances time management skills for example organizing multiple patients; Prioritization skills such as integrating nursing care for multiple patients; Collaborative skills As communicating with other people to obtain patient information; Critical thinking skills such as interpreting laboratory results; And leadership skills for example helping to coordinate and deliver patient care with nursing students)[7]. Since many barriers to clinical education that can change the quality of education can be overcome, it seems important to pay attention to the importance of proper professional communication between nursing students and nurses working in hospitals as clinical colleagues and peer education.

Also paying attention to this importance can be useful in improving the level of clinical education and as a result improving all nursing functions and removing existing obstacles. Therefore, this study was conducted with the aim of determining the effect of PAM application on the clinical performance of nursing students.

METHODS

The present study is quasi-experimental. There were 160 nursing students of the seventh and eighth semesters of undergraduate nursing and midwifery schools in Iran medical science universities. Inclusion criteria were nursing students attended the internship course (semesters 7 and 8) and were willing to participate in the study. Also, students who were absent from one of the intervention sessions, did not want to continue participating in the research or did not attend

the internship were excluded from the research. They were recruited to the study through consecutive sampling. Consecutive sampling is defined as a non-probability sampling technique where samples are picked at the ease of a researcher more like convenience sampling, only with a slight variation and were allocated to a control and an intervention group through permuted block randomization with block size of 4. Allocation sequence was generated by the statistical advisor of the study, while sampling, data collection, and intervention were performed by the first author. Sampling and data collection were performed in eight months from September 2019 to January 2021. Sample size was calculated based on the mean and standard deviation of PAMs reported in a former study and with a confidence level of 0.95 and a power of 0.80[15]. Accordingly, the sample size calculation formula showed that 80 students were needed for each group.

Figure 1. Sample size calculation formula

$$n = \frac{(z_{1-\alpha/2} + z_{1-\beta})^2 \times (s_1^2 + s_2^2)}{d^2}$$

Data collection instruments were a demographic questionnaire and nursing students' performance scale. The demographic questionnaire had items on age, gender and marital. The nursing students' performance scale is a 28-item was designed by Karayurt et al. In Turkey[18]. Psychometrics and translation of this instrument were performed by esmaeili et al[19]. This instrument measures the performance of semesters 7 and 8 nursing students in three scopes of nursing process with 12 questions, professionalism with 9 questions and ethical principles with 7 questions. The concept of nursing process in this instrument refers to data collection, problem determination, and care plan proposal, use of appropriate measures and evaluation of care outcomes by the student. Effective nursing care depends on good communication with other people. In this instrument, the concept of professionalism refers to the appropriate communication skills of the student with patients, healthy people and health workers. The scope of ethics also refers to the observance of organizational policies and respect for the behaviors and social and economic conditions of patients. To grade the instrument, each item is given a score of 0 to 10; So that the minimum and maximum score of each student is 28 to 280. Cronbach's alpha correlation coefficient for determining the internal consistency for all items was 0.92, for the nursing process (factor 1) 0.88, professional behaviors (factor 2) 0.85 and technical skills (factor 3) 0.82. Then by dividing these two numbers and multiplying the result by a fixed number of 10, a maximum score of 100 is obtained. Thus, a score of 85 to 100 is excellent, a score of 70 to 85 is acceptable, a score of 60 to 69 is average, a score of 50 to 59 is pass, and a score of less than 49 is a failure[19].

Before the intervention, the clinical performance of students in both intervention and control groups at the end of the first day of internship was evaluated by the clinical educator using the nursing students' performance scale. The control group completed their internship without any intervention, but in the intervention group, students who received an excellent or acceptable score at the end of the first day using the nursing students' performance scale by the clinical educator were selected as peers. Before the intervention, a 6-hour training course was given on the second day of the internship for students who were selected as peers, explaining the training method and implementation. The training course consisted of two three-hour workshops and was conducted by the research team. Educate peers about the role of the new student and according to the model in terms of how to manage time in the ward, identify and prioritize drugs, provide clinical reports of assigned patients, review and analyze patient computer data, monitor medication on time Assigned by the students, assisted the students in preparing and prescribing the medication, assisted the students in reviewing the changed or new patient instructions, and instructed the students to ensure that the patient completed the computer documentation[7]. Then, the intervention of using peers in clinical education of nursing students was performed. In this way, at the beginning of each internship day, one of the selected members was selected as a partner and the clinical educator reviewed the partner's duties with him and performed the mentioned responsibilities until the end of the same day under the supervision of the clinical educator. Finally, after completing the internship (two semesters), the instrument for evaluating the clinical performance of nursing students was re-completed for all internship students in the control and intervention groups and the results were compared to determine whether the use of this PAM influences improving students' clinical performance or not. Data were analyzed via the SPSS software (v. 23.0) and were described via the measures of descriptive statistics (including frequency, percentage, mean, and standard deviation). Within- and between-group comparisons were made at a significance level of less than 0.001 using the paired-sample t, independent-sample t, and Chi-square tests.

The Ethics Committee of Iran University of Medical Sciences, Tehran, Iran, approved the study (code: IR.IUMS.REC.1398.456). Verbal and written informed consents were obtained from all participants and they were ensured that the data would be reported anonymously. Their participation was voluntary, and they had the right to withdraw from the research at any stage.

RESULTS

The Most students were in the two groups of women and married. The results showed that there was no significant difference between the demographic characteristics of students in the two groups ($P < 0.05$) (Table 1). The results of independent t-test showed that there was no significant difference between the performance evaluation scores of nursing students and its dimensions before the intervention ($P < 0.05$).

Examination of the scores after the intervention showed the scores of professionalism ($P < 0.001$), ethical principles ($P < 0.001$), nursing process ($P < 0.001$) and student performance evaluation ($P < 0.001$) in the intervention group was significantly higher than the

control group. Also, the increase in nursing students' performance evaluation scores and its dimensions in the intervention group was significantly higher than the control group ($P < 0.001$). The results of paired t-test showed that both in the control group ($P < 0.001$) and in the intervention group ($P < 0.001$) the scores of nursing students' performance evaluation and its dimensions after the intervention were significantly higher than before the intervention (Table 2).

Considering that the Cohen effect size of nursing students' performance evaluation scores as well as its dimensions was more than 0.80, so the effect of the intervention in evaluating its effect on the studied variables was high (Table 3).

Table 1. Demographic characteristics of undergraduate nursing students (seventh and eighth semesters)

Variable	Control	Intervention	
Age (years)*	22.35 (0.95)	22.19 (0.99)	0.294 independent-sample t test
Gender**			0.418 Chi-square test
Female	46(57.5)	51(63.8)	
Male	34(42.5)	29(36.2)	
Marital status**			0.611 Chi-square test
Single	53(66.2)	56(70.0)	
Married	27(33.8)	24(30.0)	

*Mean (SD) **Numerous (%)

Table 2. Comparison of nursing students' performance evaluation scores and its dimensions in the two groups

Performance Evaluation and Dimensions	Intervention	Control	Independent-Sample t Test
Professionalism (0-100)			0.727 <0.001
Before	62.95(6.66)	62.58(6.73)	
After	79.18(3.63)	79.18(3.66)	
Paired-sample t test	<0.001	<0.001	
Ethical principles (0-100)			0.917 <0.001
Before	62.42(7.21)	62.30(7.19)	
After	79.78(3.90)	64.92(6.64)	
Paired-sample t test	<0.001	<0.001	
Nursing process (0-100)			0.402 <0.001
Before	59.07(7.10)	59.99(6.46)	
After	77.30(3.14)	62.89(5.73)	
Paired-sample t test	<0.001	<0.001	
Student performance evaluation (0-100)			0.808 <0.001
Before	61.16(6.32)	61.40(6.02)	
After	78.53(2.82)	64.04(5.43)	
Paired-sample t test	<0.001	<0.001	

Table 3. The effect size of PAM on the evaluation of nursing students' performance and its dimensions

Students' performance and dimensions	Effect size
Professionalism	2.80(2.37,3.25)
ethical principles	2.71(2.29,3.15)
nursing process	3.10(2.65,3.57)
student performance evaluation	3.33(2.86,3.57)

DISCUSSION

The aim of this study was to determine the effect of using the PAM on the clinical performance of nursing students. The results of the study showed that after applying the PAM, the scores in the three areas of professionalism, ethical principles, and the nursing process, as well as in general in the evaluation of student performance, in the intervention group were significantly higher than the control group. Also, the effect size of nurses' performance evaluation showed the

high impact of the intervention on the studied variables. Numerous studies around the world have confirmed the high impact of peer use in students' clinical education [11, 13, 20-24].

The Peer Assist model was designed to support students' clinical insight and provide clinical educators with an innovative educational approach. Positive feedback from instructors and clinical students proves that the peer support model is an effective learning model that enhances student outcomes[9].

The study by Cooper et al. Showed that the use of peer-to-peer educational model for psychiatric students leads to faster achievement of educational goals and effective use of time and resources[21].

The goal of the Peer Assist Model index is to develop leadership potential by coaching nursing students in time management, critical thinking, recognizing important priorities and colleagues' skills[9].

Using same category students as peers in clinical education is a kind of strengthening the positive effect of friendly relationships in increasing self-confidence, learning and satisfaction[23, 25].

The study by Nancy Peer Showed that this method also helps students in managing time to perform care and prepare a clinical report on patients. This model can be effective in prioritizing drug prescription based on the type of drug, dosage time and patient's need by the student. The peer assist model can be adapted to different levels of clinical rotations by setting student-level goals. Also, Peer assist has been recognized in the literature as a new educational strategy in nursing education for staff development as well as nursing student learning of nursing skills. This approach fosters mutual respect for staff and student learning, mentors peers, encourages constructive feedback, builds trust and fosters confidence in nursing practice in mutually beneficial relationships[9].

In a study, Secomb et al. found that peer learning can increase students' confidence in clinical performance and improve learning in the psychological and cognitive fields. Of course, the downside of peer learning is that it can have a negative impact if the characters or learning methods are not compatible and students spend less time with the clinical instructor[26]. In 2016, Carissa Wong et al. noted that studies in the field of peer mentorship are generally methodologically poor, and positive results were found for nursing students through the use of peer mentorship programs; however, there were several challenges to the program's success[27]. These findings indicate that there should be a change in clinical education to replace mentorship with a peer. The use of peers in clinical education helps to remove barriers to clinical education.

Gholami in his study 9 main obstacles of clinical education Instructor insufficient attention to the educational needs of students in clinical education, insufficient feedback to students, unclear goals and tasks of students, spending too much time on theoretical content in the fields of clinical education, ignoring preliminary studies by instructors Lack of following the steps of clinical education, inability to make independent decisions to perform technical skills, low use of new educational methods due to the existing facilities and the lack of a clear evaluation system for students[28]. The present study shows that a large number of barriers to clinical education that reduce the

quality of education can be corrected and it seems that due to the importance of establishing a proper professional relationship between nursing students and also the impact that peer education can have in to improve the level of clinical education, the use of this model will improve the clinical performance of students at a wider level.

CONCLUSION

In general, the findings of the present study indicate the positive effect of using the peer model on the performance of nursing students. Since the use of this model with this instruction and students of the same class is done for the first time in the country, repeating the study in different environments and examining the students' perspectives after these courses with a qualitative method can be more than weaknesses and reveal the strength of using this model. Using the PAM in clinical education can have a significant impact on increasing the efficiency of students' internships as well as the performance of clinical instructors.

ACKNOWLEDGEMENTS

The authors would like to profusely thank all individuals who supported and helped them in conducting this study.

ETHICAL CONSIDERATIONS

This research study was approved by the Ethics Committee of the Iran University of Medical Sciences. The Ethics Committee of Iran University of Medical Sciences, Tehran, Iran, approved the study (code: IR.IUMS.REC.1398.456). Verbal and written informed consents were obtained from all participants and they were ensured that the data would be reported anonymously. Their participation was voluntary, and they had the right to withdraw from the research at any stage.

CONFLICT OF INTEREST

The authors declare that they have no competing interests.

AUTHOR'S CONTRIBUTIONS

Nima Pourgholam: Collected the data, Conceived and designed the analysis and Wrote the paper. Sarieh Poortaghi: Conceived and designed the analysis and Contributed data or analysis tools. Saleh tajalli: Contributed data or analysis tools, Conceived and designed the analysis and Collected the data. Mansoureh Ashghali Farahani: Contributed data or analysis tools and Collected the data. Masoomeh Azami: Wrote the paper and Collected the data

FUNDING

The authors confirm that the data supporting the findings of this study are available within the article and its supplementary materials.

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