Original Article

Comparison of the effect of" near-peer" teaching and trainer on hand hygiene in first year nursing students of Ilam University of Medical Sciences

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ABSTRACT

Introduction: One of the new methods of teaching is peer teaching, but its efficacy has gained little attention in nursing education especially in clinical skills. Therefore, this study examined the effect of near-peer teaching on learning hand hygiene skills among nursing students. Methods: In this quasi-experimental study, 80 first grade nursing were selected and randomly assigned to two groups: "instructor teaching" and "near-peer teaching". The data collection tool was a hand hygiene skill checklist which was completed based on observations before and after training. Intervention group and control group were practiced by peers and academic member, respectively. Evaluation was done by one academic member who had no information about students groups through the same checklist. Data were analyzed with conduct independent sample t- test and paired sample t-test. Confidence interval 95% (α= 0.05) was considered as significant level. Finding: The findings shows that, No significant difference was found between two groups regarding the scores of hand hygiene skills before training ($p = 0.66$). After training, the average score of hand hygiene skills was 10.8 ± 0.99 in" instructor group " and 11.6 ± 0.53 in the "near- peer group", and there was a significant difference between the groups ($p < 0.01$). Conclusion The improvement of nursing students' hand hygiene skill in the" near-peer group" is better than the "instructor teaching group" and it is suggested to use it as a method for teaching students practical skills.

Keywords: Hand hygiene, Near-peer Education, Clinical instructor

Introduction

Nurses as the main person in providing care for patients have a unique role in the prevention of nosocomial infections. [1-3] Transmission of pathogens over time through direct contact (hands, saliva, etc.) is carried out by the staff. [4]

Hand Hygiene compliance by the care provider is the first step in the prevention and control of nosocomial infections, and the most effective, the easiest and cheapest way to improve patients " safety. [3-8] However, it is difficult to induce health workers to follow appropriate behaviors. [9] training is One of the ways to improve the quality of patient care and to increase knowledge and nurses clinical skills of nurses. [10, 11]

Nursing education combines the learning of theoretical knowledge and clinical activity, although clinical practice is the only place where students associate theory to practice, but with fundamental challenges such as inconsistency in the program and the implementation of the curriculum, and lacks sufficient understanding' student of the situation. [12]

In order to develop clinical skills, nursing instructors are tasked with applying various teaching methods to educate skillful and expert students. One of these methods is teaching by peers that is recognized as a valued strategy and used for learning and teaching in curricula and various ages. [13] Currently, peer education experiences, which are presented in medical sciences,

Access this article online	
Website: www.japer.in	**E-ISSN:** 2249-3379

How to cite this article: Masoumeh Shohani, Sahar Moradi, Ali Khorshidi, Mohsen Jalilian. Comparison of the effect of" near-peer" teaching and trainer on hand hygiene in first year nursing students of Ilam University of Medical Sciences. J Adv Pharm Edu Res 2020;10(S1):83-87.
Source of Support: Nil, Conflict of Interest: None declared.

are often limited and available only to those who are actively pursuing them. [14] Teaching peers is a form of learning in which all learners are in same age group and a level of learning that is, in most cases, relatively less experienced. [15] Peer education is close to a subset of peer education, in which the "teacher" has experiences approximately " 2 to 5 "years more than a "student". [16] The close proximity of age and recent similar experiences of peer tutors provides an added benefit as near-peer teachers have a better appreciation of the knowledge held by junior peers and can therefore target teaching at an appropriate level [17] and They can communicate without students feeling threatened and competitive. [18]

The role of young mentors in teaching the same students in a formal structured environment is highly valued and should be encouraged. Despite the global acceptance of education based on the method of peer educator, research papers about its effect are rare. Considering the importance of the role of near- peer education in clinical education, this study aimed to determine the effect of near- peer education on hand hygiene skills in nursing students.

Objective

The current research aimed to determine the effect of two educational methods (Near-Peer and Instructor) on hand hygiene skills learning in nursing students of Ilam University of Medical Sciences.

Material and Methods

This quasi-experimental study was conducted to compare the effects of two methods of training by "instructors" and" near-peer" education on hand hygiene skills in nursing students. Participants were selected by purposive sampling according to three criteria: the first year nursing students who passed the course of Fundamentals of Nursing, did not undergo any specific training on how to wash hands and also did not transfer students from other medical sciences to nursing.

The students were divided in two intervention (N=40) and control groups (N=40 randomly. Participants in each group were listed in 5member categories. In the control group, education was conducted by an academic member and in the intervention group of education by the last year nursing students as a "near-pear". Then, the researcher conducted pre-test for both groups. A group consist of five last year students which had the highest score, proper speaking ability and sufficient proficiency in teaching, selected and trained.

For each of the eight students, they had a "near-peer" and were assigned to each control group of 8 students who were trained by the mentor. These exercises were performed during 3 sessions, each session for both groups was 30-45 minutes in two weeks, both groups trained in a same place.

Before the training, the pre-test was taken by observing the Wilkinson and Treas' standard checklist. The researcher practiced and corrected a curriculum package containing films, slides, photos and speeches of the target procedure (hands-on health skills) with trainee students. The contents of the training were considered in both groups according to the Taylor and Potter & Perry fundamental of nursing' text Books.

The control group was trained by the instructor according to the faculty' usual methods. The first session was teaching through lecture and slides, the second session of the use of posters, photos and practical training, and the third session of education through the educational video and practical training of hands-on health skills.

All students were evaluated after four weeks of completion. The researcher assistant observed Nursing student' hand-hygiene behavior for 15 min during one 8 h shift at pre-test and post-test.

The study outcomes were measured by Wilkinson & Treas hand-hygiene checklist.it was between zero and 14 points and prepared from Procedure Checklists for Fundamentals of Nursing. Ten members of the academic members in the fields of nursing, midwifery and health were asked to confirm the content validity of the hand-hygiene checklist and its corrective comments were applied.

Cronbach's alpha coefficient for inter-rater reliability was 0.78 .Data were analyzed with conduct independent sample t- test and paired sample t-test. Confidence interval 95% (α= 0.05) was considered as significant level and was performed using SPSS-22 software. The ethical approval of the project was also obtained from the University's Ethics Committee (Code of Ethics: Ir.medilam.rec.1397.69).

Results

As shown in Table 1, the data did not indicate any statistically significant differences between the two groups in terms of gender, age or educational background (Diploma Avg).Of the 80 students, 6 were Nurse Assistance and 4 had no consent to enter the study. Most of the participants were female in both groups. There was no significant difference in age and diploma grade in both groups.

Table 1: Comparison of demographic variables in near-peer and instructors

Demographic variables		Peer group close	Instructor's Group	P
		Frequency	Frequency	
Sex	female	21(60%)	15(42%)	0.07
	male	14 (40%)	20(57.2%)	
Age(mean±sd)		20.04±0.8	20±0.9	0.08
Diploma Avg(mean±sd)		17.92±0.99	17±0.9	0.08

Table 2: Comparison of hand hygiene skills' mean before and after intervention

Score	Near-Peer group	Instructor's group	P
	mean±sd	mean±sd	
Before intervention	9.31±0.31	9.14±0.87	0.06
After intervention	11.6±0.53	10.8±0.99	0.0001

Checklist' average scores for hand hygiene skill at pre-intervention and one months after the intervention in Instructor's Group and Near-Peer group were 9.14 (SD: 0.87), 10.8(SD : 0.99) and 9.31(SD: 0.31), 11.6(SD:0.53), respectively(Table 2). The scores for hand hygiene skill at post-tests "Near-Peer" group, significantly higher than those before the intervention ($P < 0.001$). In addition, The scores for hand hygiene skill between post-tests "Near-Peer" group, significantly higher than Instructor's group ($P < 0.001$). There was no significant difference between the scores of hand hygiene skills before intervention between two groups, however, there was a significant difference between the pre-test and the post-test for the overall score of the checklist in both groups. Results showed that the "Near-Peer" group was better than Instructor's group.

Discussion

The aim of this study was to determine the effect of two educational methods (Near-Peer and Instructor) on hand hygiene skills learning in nursing students.

Findings showed that there was no significant difference between the scores of hand hygiene skills before intervention between the two groups, but there was a significant difference between the pre-test and the post-test' scores in both groups. The score of hand hygiene skill in the near-peer group was better than Instructor's group and there was a significant difference between the two groups.

Studies show that the role of peers in teaching students in a formal structured environment is very valuable and should be encouraged. [17] Peer assisted learning was effective in promoting clinical reasoning skill among training students. Training allows the integration of attitudes, skills and knowledge in teacher and solace in learners. The promotion of students' independence in learning can lead to the improvement of their clinical reasoning skills. [19] The findings in a similar study on Learning Dressing Skill among Nursing Students indicate that students had better performance in dressing skills performance better in three subdomains, changing dry sterile dressing, using wet dressing and removing skin sutures. [13] Also, teaching by peers compared to the usual method of training significantly increased the clinical examination skills of medical students. [20] The findings of compolo'study and et al, Are also consistent with the results. Students agreed that near peer teaching is a valuable component of the University of the Sciences Doctor of Physical Therapy program as it helps prepare them for their future roles as health care professionals. This approach increases the learning in a stressed environment, and thus, learning experience becomes more enjoyable. [21] Students in both studies (present study and compolo' study) stated that peer education is a valuable component of the curriculum, as it helps them prepare for their future roles as health care professionals. In addition to the benefits mentioned by Camplo, there is a useful study of" peer-learning", including pleasure, skill, and academic growth in those who have been trained as peer-teacher lecturers.

The feedback received from students in Hall et al. study showed that "near-peers education" in neuroanatomy had a good effect on students. Students showed evidence of a greater sense of confidence in learning this lesson, and the special benefits of this method have been announced to them by academic members. [18] This method can be a supplement to the teacher's teaching by providing a deep-seated positive experience and a lasting and deep learning.

The results of Kimiaei et al.' Study indicate that despite the higher mean scores in the intervention group, No significant difference was found because of The high volume of exercises prescribed by academic members and the compulsion for doing them in two groups. [22] In present study, practical exercises were conducted with fewer sessions in order to avoid these problems.

Another study showed that peer education on learning students' practical skills was similar to trainer, which is not consistent with the results of the present study. [23] In present study, in order to avoid this problem, students from the last year (semester 7 and 8, higher semester students) were used as peers in learning in small groups, which showed positive results in their clinical evaluation. According to other studies regarding infirmity in students' clinical education and their poor professional attitude, it can be argued that this educational method can be used as one of the methods for reviewing in students' clinical skills training, and also to enhance their attitudes toward their profession.

One of the constraints mentioned for the use of peers education is that in this method the student's call time decreases with faculty members. One of the main concerns in peer's education is the quality of teaching" peer- students". For this reason, it has been reported that the role of "peer-student" should be facilitator rather than teacher. [22] Considering the limitations of the studies, in order to eliminate them in the present study, the effect of" near-peer "group alongside Instructor's group was studied until reduce the time spent on contacting faculty members and to facilitate the role of peer educators. Also, in the present study, a larger sample size was considered and the first year nursing students were used.

Conclusion

The findings shows that, the improvement of nursing students' hand hygiene skill in the" near-peer group " is better than the "instructor teaching group" and it is suggested to use it as a method for teaching students practical skills. There was a significant difference between the two groups. Considering the limitations of the project that the researcher failed to control student' visits in the dormitory and the faculty, it is suggested that future studies should be considered as a solution to this problem.

Acknowledgement

This research is based on Sahar Moradi' Dissertation, Master of Science (MSc) in Nursing and Midwifery, Ilam University of Medical Sciences, code of ethics Ir.medilam.rec.1397.69 and Registration Number of Clinical trials was IRCT20190313043043N1.

The authors thanks the nursing students and clinical coach who participated in this study.

Conflict of interest statement

None declared.

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