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The effectiveness of two evaluation techniques in the clinical education field: A step for promotion of bachelor nursing student's satisfaction

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Abstract

BACKGROUND: Paying attention to students' opinions and suggestions on existing evaluation methods and new methods of evaluation is an essential and important part of clinical education, so this study aimed at determining the effectiveness of two evaluation techniques satisfaction among undergraduate nursing students.

MATERIALS AND METHODS: This was a quasi-experimental study conducted on 60 undergraduate nursing students of Isfahan University of Medical Sciences in 2019. There were 30 samples in each group (logbook and e-logbook) that were selected by convenience sampling method. the Android application (e-logbook) was used in the intervention group to evaluate the clinical skills of students. The User Satisfaction Questionnaire was conducted by undergraduate nursing students. Data were analyzed using SPSS software version 14 and descriptive statistical tests.

RESULTS: The results showed that the mean (standard deviation) overall score of satisfaction from both evaluation methods including logbook and e-logbook was 39.7 (9.4) and 47.7 (12.2), respectively. Also satisfaction score of the evaluation method was significantly different between the two groups ($P = 0.03$).

CONCLUSION: According to the results of the present study, the use of new and active methods of evaluation, including the application of e-logbook, can be useful in evaluating nursing students and cause student satisfaction, so using the application is useful.

Keywords:

Education, evaluation, health promotion, nursing, students

Introduction

Technology has grown rapidly in the last decade, and the use of these technologies has been rapidly increasing in the field of higher education. Nursing students and professors are expected to use these technologies to facilitate education.^[1] Today, e-learning is defined as utilizing electronic technology to access the educational curriculum. E-learning provides students with information using a variety of communication technologies, such as the Internet, intranet, or cell phones. This

method can facilitate access to necessary and relevant information related to the curriculum and more importantly create an interactive learning environment.^[2] E-learning allows learning to be adaptive and interactive, as well as reducing training costs. In addition, it allows access to education at any time of the day.^[3]

Rapid developments in the application of technology, including productive technology and information technology in human life, have brought about dramatic changes in the industrial, economic, political,

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and civil structures of societies. These changes have had a profound effect on the process of people's lives and work all around the world and seriously confronted with traditional methods of teaching, learning, and managing.^[4,5] Using educational software in learning environments is an appropriate and necessary way to discover and access information resources in order to make the learners ready for their future lives. The quality of education depends on the proper and continuous use of educational software in the classroom. The most useful aspect of educational software is the ease of access to comprehensive content, which can be used electronically at any time and in any place, and promotes the level of learners' awareness and satisfaction. The learner is involved in the process of learning using educational software method and interacting with the environment.^[6,7] In the meantime, teaching and evaluating the clinical performance of nursing and midwifery students using new techniques can be effective in enhancing their satisfaction and performance. The study of Mohamadirizi *et al.* showed that the use of new methods not only increases the level of students' satisfaction, but also it is a way to improve the performance of their clinical skills.^[8] In their study, Yazdannik *et al.* (2018) also showed that the use of e-learning-based teaching methods has increased the level of nurses' satisfaction with training related to emergency clinical care.^[9] Therefore, it is important and necessary to pay attention to education and assessment of the level of awareness and performance of nursing students in stressful situations such as emergency departments. Moreover, student-based activities and the using new methods in educating and training nursing students have been important. In addition, considering clinical education is an essential part of medical education. In this type of education, the student interacts with the instructor and the clinical environment and uses the theoretical concepts and information as practical skills. Moreover, according to the students' comments and suggestions on existing evaluation methods and new methods of evaluation and learning, we decided to conduct a study to determine the impact of the new electronic student evaluation method on their satisfaction in 2019.

Materials and Methods

This was a two-group intervention and quasi-experimental study with a posttest design, and the research community consisted of 60 final-year internship students of the undergraduate course in nursing. There were 30 samples in each group (logbook and e-logbook) that were selected by convenience sampling method. In this study, nursing students who had an internship with the emergency and intensive care apprenticeship were selected to participate in this study. Thus, the first 30 individuals of the

internship course were considered to use the logbook and the second 30 individuals were asked to use the e-logbook related to the B.S. in critical care nursing department. In the process of making and running the software (application), when the software was designed and approved by the faculty members of nursing, application mobile was evaluated experimentally and its possible bugs were fixed. Then, in the next step of studying this application, it was given to 30 nursing students who had an internship course. After completing the clinical skills and obtaining the score, the students observed their clinical skills and evaluation score. At the end of the course, the students were asked to use the application installed on their mobile phones to observe their clinical skills and their evaluation scores. In the logbook group, they also observed the evaluation score in the same clinical skills record logbook immediately after completing the internship. Finally, after completing both training method, students in both the groups complete the satisfaction questionnaire. The Satisfaction Questionnaire consists of 14 questions with 5-point Likert scale from 1 to 5. The minimum score is 14 and the maximum is 70. Due to lack of availability of a standard questionnaire in this field, so this questionnaire was designed through use of countrywide national project, references, and textbooks, and its validity was confirmed by faculty members of the of Isfahan University of Medical Sciences. Its reliability was confirmed by use of a pilot study (questionnaire was given to 10 nursing students) and calculation of Cronbach's alpha ($\alpha = 0.80$). finally, after collecting the data, it was analyzed through version 14 SPSS Inc., Chicago, IL, USA with a significance level of $P < 0.05$ and also using descriptive and analytical statistical tests.

Results

The results of the present study showed that the average (standard deviation) of the age of the students was 21.33 (0.50), the lowest and highest values of which were 21 and 22 years. In addition, 32 people (53.3%) were female students and 28 (46.7%) were students. The descriptive statistical results for each item in the Satisfaction Questionnaire are given in Tables 1 and 2.

Based on Mann-Whitney's statistical test, the results showed that the overall satisfaction score of both assessment methods was significantly different between the two groups ($P = 0.03$). The mean (standard deviation) overall score of satisfaction with both evaluation programs, including clinical skills record book and application, was 39.7 (9.4) and 47.7 (12.2), respectively. Also satisfaction score of the evaluation program was significantly different between the two groups ($P = 0.03$). [Table 3].

Table 1: Frequency distribution, mean, minimum, and maximum values for each of the Satisfaction Questionnaire questions in the logbook group

Items	Minimum	Maximum	Mean	SD
Horrible	1	5	3	1.1
Boring	1	5	2.7	1
Dull	1	4	2.5	1
Hard to read	1	5	2.9	2
Adequacy of the amount of information	1	5	2.8	1.2
Page layout	1	5	2.7	1
Rationality of information level	1	4	2.9	0.86
Information reminder	1	5	2.8	0.93
Ease of doing things and information	1	5	2.9	1.1
Number of steps in performing tasks	1	5	2.9	1
Instructions for completing	1	5	2.9	1
Content	1	5	3.1	1
Evaluation speed	1	4	2.7	91
Useful training method	1	4	2.5	1

SD=Standard deviation

Table 2: Frequency distribution, mean, minimum, and maximum values for each of the Satisfaction Questionnaire questions in the e-logbook group

Items	Minimum	Maximum	Mean	SD
Horrible	1	5	3.2	1.1
Boring	1	5	3.3	1
Dull	1	4	3.3	1
Hard to read	1	5	3.4	1.3
Adequacy of the amount of information	1	5	3.6	1.2
Page layout	1	5	3.1	0.97
Rationality of information level	1	4	3.6	1
Information reminder	1	5	3.3	1.1
Ease of doing things and information	1	5	3.5	1.1
Number of steps in performing tasks	1	5	3.3	1
Instructions for completing	1	5	3.4	1
Content	1	5	3.4	0.93
Evaluation speed	1	4	3.4	1.1
Useful training method	1	4	3.5	1

SD=Standard deviation

Discussion

The study was aimed to determine and compare the two methods of evaluating senior nursing students in entering the clinical field and in high-risk environments, including emergency departments. The results of the study showed that in the group using the mobile application, the mean score of satisfaction in general and also in its various dimensions was higher than the control group that used the logbook, and these students reported a higher level of satisfaction. Paying attention to

new and active methods, as well as student-based ones, can be one of the factors affecting student satisfaction. Availability, sufficient time, and high accuracy of using the application method not only at home but also in students' workplaces can be one of the reasons for their satisfaction. In this regard, Ghafari *et al.*'s study demonstrated that the evaluation of postgraduate students using mobile phones results in high level of satisfaction of these students and can also lead to their learning.^[10] In addition, Najafi's study (2009) aimed to determine the effect of smartphone-based learning on the knowledge and skill of nursing B.S. students in adult basic cardiopulmonary resuscitation (CPR). They showed that smartphone-based CPR training software can enhance the knowledge of nursing students in the field of pulmonary resuscitation. This study recommends using smartphone software to educate nursing students and ensure the sustainability of these trainings.^[11] Mazlom and Rajabpoor also conducted a study entitled "Development and Assessment of Computerized Software for Nursing Process: a Step toward Promotion of Nursing Education and Care" at Mashhad University of Medical Sciences. The results of the study showed that development of local nursing software in accordance with our health system was possible and was associated with the level of nurses and students' satisfaction. Using this software can result in increased accuracy, decreased error, and shared labor that are factors enhancing patient care services.^[12] Therefore, it can be said that the use of student-based methods, both in skills training or evaluation, can promote students' performance and self-efficacy. As in the study of Nasr-Esfahani *et al.*, the results showed that the use of student-based and active methods, such as role-playing learning model, leads to improved performance of the students in advanced CPR and motivates them.^[13]

Nursing students in clinical settings can also use new educational methods to give better, more efficient care to their patients. The limitations of the present study include the inadequate Internet access speed and also the university e-learning system, the insufficient familiarity of some learners with the Internet, and the application system. Completing the evaluation forms by the professors was very time-consuming.

Conclusion

According to the results of the present study, the use of new and active methods based on students and self-learners, including the application of the application, can be useful in evaluating nursing students and cause student satisfaction, so using the application is useful.

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Table 3: Frequency distribution of overall score satisfaction rating in two groups clinical skills logbook and e-logbook

Groups	n (%)
Logbook notebook	
14-28	5 (16.7)
29-42	13 (43.3)
43-56	12 (40)
57-70	0
Application	
14-28	2 (6.7)
29-42	6 (20)
43-56	15 (50)
57-70	7 (23.3)

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Conflicts of interest

There are no conflicts of interest.

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