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The use of smartphone clinical skills recording in labor ward for midwifery students: New educational technology

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Abstract:

BACKGROUND: One of the most important clinical teaching keys is the use of new evaluation that plays an essential role in strengthening the quality level of clinical skills students. Hence, the aim of this study was to determine the effect of smartphone clinical skills recording in the labor ward on satisfaction of midwifery students.

MATERIALS AND METHODS: This is a quasi-experimental study that was conducted on 60 midwifery students in the 8th semester was selected through the convenience sampling method. Clinical skills of labor ward recorded by two methods groups (smartphone and traditional). The satisfaction questionnaire was completed before and after by the two groups. Data were analyzed using the descriptive and inferential statistics through the SPSS version 22 software.

RESULTS: Independent *t*-test showed that the satisfaction scores before intervention in both smartphone and traditional groups were not statistically significant ($P = 0.126$), whereas there was a significant difference between two groups after intervention ($P = 0.002$).

CONCLUSION: The use of smartphone techniques in the labor ward can be effect in clinical skills recording among midwifery students.

Keywords:

Clinical recorded, education promotion, midwifery, smartphone, students

Introduction

In recent years, the world's educational systems have begun to use a wide range of terms aiming at creating a profound transformation in the scientific activities. Evaluating the educational status of students during their studies and examining the factors related to it is one of the essential and inevitable pillars of improving the quality of the university education system. This is while evaluation is also mentioned as the key to educational improvement.^[1] In this regard, using new evaluation methods to assess students is inevitable since with the development of traditional learning, technology has shifted toward e-learning.^[2] Evidence reveals that traditional clinical

evaluation methods are mostly based on the unorganized observations of professors and their personal preferences and are all subjective. This has led to student dissatisfaction with some common methods of clinical evaluation.^[3] In order to expand virtual education and assess the quality of learning and learners' satisfaction, determining learners' assessment methods in such trainings is necessary to adapt and improve in comparison with the conventional methods of evaluating face-to-face trainings. In this way, we come to know the academic progress and continue the training in new methods.^[4,5] One new and beneficial method in measuring students' learning is online evaluations and reporting on performance. Evaluation is necessary in medical education since its

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extensive consequences are very important not only for students and faculty but also for human societies.^[2] Being aware of the limitations of traditional tools and not using them, as well as having knowledge of new teaching and evaluation methods for medical students were the results of a study conducted by Asani (20112).^[6] In another study conducted by Mohammadi *et al.*, the results showed that using modern evaluation methods has increased and improved the clinical performance of midwifery students in labor and delivery.^[7] In fact, one of the important features of an effective evaluation system is the use of appropriate tools. A tool that can provide meaningful information, be easy to use, and create good feedback.^[3] The use of smart devices such as mobile phones, tablets, and other digital devices has provided new dimensions to processes of teaching and students' evaluation. These smart systems have given a new meaning to the concept of communication in all dimensions, including evaluation, and have become a useful tool to be used by different people for variety of purposes. The reason is that it provides students with many learning opportunities.^[8] In this regard, the results of the study of Ghafari *et al.* showed that using electronic methods in clinical evaluation of nursing students has increased the satisfaction of master's degree nursing students as well as clinical professors.^[9] Considering the importance of increasing the academic level of students and relying on the positive aspects of using technology and new evaluations such as electronic evaluations based on smart devices, the idea of using this type of evaluation can improve the scientific and practical level of Rasht midwifery students. Therefore, midwifery students as health-care providers in future should strengthen their scientific and practical activities. Moreover, this should be taken into account that using new and student-based evaluation methods in improving the health-care system can be useful. Hence, the aim of this study was to determine the effect of smart clinical skills recording on the satisfaction of midwifery students in labor and delivery. Hence, the aim of this study was to determine the effect of smartphone clinical skills recording in the labor ward on satisfaction of midwifery students.

Materials and Methods

Study design and setting

This quasi-experimental, two-group study was performed with a pre- and posttest design on midwifery students in nursing and midwifery schools affiliated to Isfahan University of Medical Sciences, Isfahan, Iran.

Study participants and sampling

Participants were 60 undergraduate midwifery students who were divided into two groups to record clinical skills assessment including the traditional group ($n = 30$) and smart phones group ($n = 30$).

Data collection tools and technique

After confirming and receiving the code of ethics from the Virtual University of Medical Science (VUMS), Tehran, Iran, and coordination with the department chair of midwifery in Isfahan University of Medical Sciences, the researcher began sampling. It should be noted that clinical skills are related to maternity training in the field and were for evaluating the student; in addition, all stages of each procedure were presented in detail in both methods. At the end of the labor ward course, the relevant professors evaluated the processes performed by the student and marked them in both groups smart phone or on a log book. In the smart phone group, students could immediately see the results of their self-assessment done by the instructor on their mobile phone.

Finally, students recorded their opinions about both clinical skill assessment tools using a 14-item satisfaction questionnaire. The satisfaction questionnaire consists of 14 items and is based on a 5-point Likert scale. The minimum and maximum scores are 14 and 70, respectively. The content validity and the reliability of the satisfaction questionnaire have been confirmed by the study of Mohamadirizi *et al.*^[10] Data were analyzed using the descriptive and analytical statistics (independent *t*-test and the paired *t*-test) in SPSS software (version 22 SPSS Inc., Chicago, IL, USA). The level of statistical significance was $P < 0.05$.

Ethical consideration

Ethical aspects of this study were approved by the research deputy in VUMS, Tehran, Iran (code number 88). All of the participants were informed about being free to participate in the research and nondisclosure of personal information. They all signed written informed consent.

Results

The results showed that the mean (standard deviation) age of students in the case and control groups was 21.4 (0.03) and 21.27 (0.04), respectively. Furthermore, there was no significant difference between the students' satisfaction scores before the intervention in the two groups of control and smartphone [Table 1].

The results of *t*-test showed that there was a statistically significant difference between the mean satisfaction scores in both groups after the internship ($P = 0.002$) [Table 2].

Finally, by asking a general question of students about their satisfaction with each of the recording tools, it was found that only 20% of students in the control group and 55% of students in the smartphone group were satisfied.

Table 1: Differences between mean satisfaction score in two groups before intervention

Groups	Mean	SD	P
Smartphone	25	0.01	0.126
Control	26	0.21	

SD=Standard deviation

Table 2: Differences between mean satisfaction score in two groups after intervention

Groups	Mean	SD	P
Smartphone	52	0.32	0.002
Control	27	0.11	

SD=Standard deviation

Discussion

The present study was conducted to determine the impact of smart recording of clinical skills of labor and delivery on midwifery students' satisfaction. The results showed that the students' satisfaction score for recording clinical skills related to labor and delivery in the smartphone recording group was consistently higher than the control group. In this regard, the study of Ghafari *et al.* showed that the evaluation of graduate students using mobile phones has boosted the students' satisfaction and also made them learn.^[9] The results of Behbahani and Karimi Meridani's (2020) study showed that the evaluation of students by the online systems played a significant role in increasing students' knowledge, reducing absenteeism during the semester and finally increasing their scores at the end of the semester.^[2] The results of Alizadeh *et al.*'s study revealed that using educational software among students has a positive impact on their learning and satisfaction. In addition, more than 99% of students mentioned that information from electronic software increases their knowledge, attitude, and performance.^[11] Abbasi Kasani *et al.* (2021) conducted a qualitative study and the results showed that in e-learning, assessment is obtained from learners and the training course and in the form of initial, formative, and summative evaluation. The research results also indicate that the reasons for conducting assessment in e-learning are as follows: Assessment as an integral part of any educational system, helping the learner, and helping the instructor. Various methods such as online tests, webinars, portfolios, discussion forums, telephone evaluation, project, self-evaluation, peer assessment, article, etc., are used for the assessment in e-learning.^[12] The results of Khorsandi *et al.*'s study showed that not only students but also professors had a positive attitude toward using the online assessment system.^[13] In fact, according to the results consistent with the present study and the importance of e-learning, it can be said that e-learning and using smart devices such as mobile phones are a way to provide flexible learning and create more opportunities for learners, facilitate learning progress and

their activities. It also provides an opportunity to create new effective learning environments that can be used to increase students' satisfaction and interaction with their professors. Therefore, it is suggested that in clinical environments, such as the labor and delivery ward, online and device-based assessment and smart devices be considered to improve the learners' satisfaction.

Limitation and recommendation

The limitations of the present study include the insufficient Internet access speed and short size of content for complete. According to the results of the study, it is recommended that teachers in clinical wards use this method to evaluate students' performance in the clinical practice.

Conclusion

Smartphones may have a useful and effective role in procedural skills training and recording in labor ward.

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Conflicts of interest

There are no conflicts of interest.

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