

An Active Teaching Approach for Fetal and Maternal Assessment in Delivery Room: A Randomized Clinical Trial

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ABSTRACT

Background: A modern teaching method has been used for educating the midwifery students. Regarding the importance of accuracy and speed among the midwifery students, especially in the stressful condition of childbirth, this study aimed to investigate the effect of time management and precaution techniques on the midwifery student's clinical performance in the labour ward.

Methods: This study was conducted on 40 midwifery students during November 2015-March 2016. The participants were randomly assigned into the control and experimental groups that were trained using the traditional method and time management techniques, respectively. The subjects' clinical performance regarding the fetal heart rate monitoring, contraction check, and physical examination was assessed using a checklist during the intervention and four months after the intervention. The data analysis was performed using the independent and paired t-tests through the SPSS version 14. P-value less than 0.05 was considered statistically significant.

Results: According to the results of the present study, there was no significant difference between the two groups regarding the speed of performing the examined clinical care before the intervention. However, following the intervention, there was a significant difference between the two groups in this regard ($P=0.010$). Additionally, the paired t-test revealed a statistically significant difference in the speed of performing the clinical care between the two groups after the intervention ($P=0.018$).

Conclusion: As the findings of the present study indicated, the time management technique could improve the speed in the midwifery students. Therefore, this technique as a modern method is recommended to be employed in the emergency wards such as the labour and delivery wards.

Keywords: Delivery, Fetal, Labour, Maternal, Midwifery, Time management

Introduction

The main mission of the universities of medical sciences is to train human resources to improve the healthcare in society. One of the main elements of educational process is the use of modern teaching methods (1). In the recent decades, the researchers are seeking to find the teaching methods that result in more efficient healthcare providers. Expanding the art and science of nursing depends on the knowledge and discernment of the teachers as well as providing a suitable environment. The outcomes of clinical care are dependent on the teaching, learning, and caring process (2, 3).

Therefore, the students need to recognize what to know and how to learn, and the teachers should encourage the students to use the scientific sources.

The health professionals must be competent in multiple psychomotor or manual skills. They must integrate the skills of working with tools with the ability to adapt the skills to the conditions. In other words, the goal of a practical lesson for students is to enable them to perform an operation independently, correctly, on time, and with enough speed (4).

Midwifery is one of the disciplines, which is of particular importance in academic departments, because of securing the health of the vulnerable members of the society (i.e., females and children) (5). Therefore, the learners of this discipline are expected to have the maximum knowledge and responsibility to carry out their duties. Furthermore,

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they should acquire the required skills at their advanced levels so that they can be accountable to the members of the society.

Training the practical and medical skills are the main challenging aspects of nursing and midwifery teaching. If we do not succeed in this field, its harmful consequences will affect all the members of the society, especially the patients, students, and professors. The teachers benefit from the instructional strategies to achieve their educational goals. Teaching different topics and skills requires the employment of different methods and techniques (6, 7). Selecting these methods and techniques depends on the nature of the task itself and learning objectives as well as the students' capabilities, talents, and previous knowledge.

In the recent studies, the researchers have found out that the individual characteristics of a teachers have little impact on the students' learning; however, their educational method is one of the most important factors affecting their learning process. Accordingly, the teacher's instructional method is considered to have a key role in the student learning (8, 9). If education is offered through active methods and based on the personal experiences of the learners, the individuals' level of communicational and interpersonal skills as well as the effectiveness of education would be dramatically increased (9).

One of the active methods consists of four phases. "Demonstration and tell phase" is the first phase in which the trainers explain about the aims of the activity; then, they, themselves, perform the needed skills. The second phase is called the "deconstruction phase" in which the trainer repeats the intended skills. "Comprehension phase" is the third step when the trainees should have a true understanding of what is being taught and be able to talk about it. The "performance phase" is the last step in which the trainees perform the needed skills in the presence of the trainer so that they can be evaluated by the trainer (9, 10).

Nowadays, the majority of the universities around the world are seeking to teach methods that can expand and enhance the clinical decision making capabilities, continuous and self-centered learning, and self-efficacy among the nursing students. In the traditional methods, the students memorized the materials through rote learning instead of focusing on understanding the concepts and using them, and the teachers were the only sources of knowledge. These methods results in passive students, who only content themselves with unconscious performance of habitual actions (11).

As a study conducted by Mohammadi Rizi (2015) demonstrated, the use of active teaching

methods in training the clinical care required during the labor and delivery not only improved the midwifery students' performance, but also increased their satisfaction. With this background in mind and regarding the importance of accuracy and speed among the midwifery students, especially in the stressful condition of childbirth, this study aimed to investigate the effect of time management and precaution techniques on the midwifery student's clinical performance in the labour ward.

Methods

This clinical trial was conducted on 44 midwifery students in the seventh semester, who were selected using the simple random sampling method during 2015-2016. The students were divided into six groups. The first three groups (i.e., intervention groups), which were chosen randomly, received the time management and precaution techniques. On the other hand, the next three groups (i.e., control groups) were taught by means of the usual method.

The sampling was performed at Shahid Beheshti University after obtaining the approval of the Ethics Committee of Isfahan University of Medical Sciences and submitting the written agreement to the authorities. The inclusion criteria entailed 1) written informed consent, 2) having had at least five childbirths without having the trainer's support, 3) not having taken part in a similar study, and 4) not being absent more than one day during the apprenticeship.

The clinical skills examined in this study included such fetal and maternal assessments as fetal heart rate monitoring, contraction check, giving history, and physical examination. In this method, at first, the midwifery students were theoretically informed about the needed devices, while having them at hand. Subsequently, they were given some explanations about the aim and process of the project. After that, the students were tested in terms of each of the trained skills using a chronometer and a checklist. The data analysis was performed using the independent t-test (to compare the mean scores before and after the intervention) and paired t-test (to compare the intergroup scores) through SPSS version 14. The correlation coefficient and meaningfulness level in the entire test were 95 and 5%, respectively.

Results

As the results of the study demonstrated, the mean age of the participants was 21.4 ± 1.01 . The mean scores of the time management skill, estimated by a chronometer, were significantly

Table 1. Comparison of mean and standard deviation of time management for fetal and maternal assessment among the seventh semester students between the pre- and post-intervention stages

	Pre- intervention	Post-intervention	P-value	df	t
Experimental group	8±2.4 (min)	15±0.2 (s)	0.010	20	-1.14
Control group	8±1.1 (min)	7.6±1.4 (min)	0.22	20	-1.51
P-value	0.35	0.018			
Df	40	40			
t	-2.03	-1.22			

different between the control and experimental groups (Table 1).

Discussion

This study investigated the effects of the time management technique on the clinical performance of the midwifery students. As the findings of the present study indicated, the average duration of performing the clinical skills significantly decreased after the intervention, compared to that before the intervention in the experimental group. However, no difference was found in the control group in this regard. Accordingly, the students in the experimental group, performed the skill of preparing mothers for cesarean delivery in a very short time following the intervention and had considerable improved speed. Therefore, this technique can be concluded to result in the objective-based performance and excellent time management among the students.

Likewise, in a study carried out by Bitsika (2013), the use of a four-stage approach increased the nursing students' speed and improved their performance in the venipuncture skills (12). Furthermore, in a study conducted by Orde (2010) in Australia on the nursing students, it was demonstrated that the use of active clinical teaching methods based on the students' performance in the hospital environment reduced the time for performing the laryngeal mask insertion skill (13). In addition, Mohammadi Rizi (2015) showed that the use of an active demo method in the maternity unit environment enhanced the efficacy of the midwifery students (9, 10).

However, in a study carried out by Jenko (2012), no significant difference was observed between the control group and the experimental group (i.e., freshman students) that was trained the skill of cardiac massage for the patients with myocardial infarction using a four-stage method (14). One of the reasons for this discrepancy between our findings and those of the aforementioned study might be due to the employment of different study population. Jenko investigated the freshman students;

however, we examined the senior students in the present study (14). It seems that the freshmen need to practice more, compared with the senior students.

Furthermore, the results of the studies conducted by Abraham (2003) and Foronda (2012) showed that the use of patient-centered and active methods could enhance the scores of communication skills and positive emotions and reduce the negative psychological factors (15, 16).

The small sample size employed in this study was small. Therefore, we suggest that the future studies be conducted using students in two different semesters, one group of which receive the time management method during the field apprenticeship and the other one are trained using the traditional method with a follow-up of two terms. Such a study would also largely reduce the problem of shortness of the observation duration and dissimilarity of instructors. In addition, this educational method is recommended to be applied in the obstetric emergency departments as well as in other medical disciplines.

Conclusion

As the findings of the present study indicated, the time management method was effective in the clinical performance of the midwifery students. Therefore, the teachers can make use of this method in their educational program so as to improve the students' performance.

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Conflicts of interests

The authors of the present study declare no conflicts of interest.

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