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The effect of speed and precaution technique on postpartum bleeding among midwifery students in the clinical field

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Abstract:

BACKGROUND: Cooperative teaching methods have been used widely in medical education. The aim of this study was to determine the effect of theater in the clinical stage on postpartum hemorrhage management among midwifery student.

MATERIALS AND METHODS: This was an experimental study, performed in 2016 among midwifery students in Isfahan University of Medical Sciences and selected through the random sampling method. Satisfaction questionnaire and clinical practice checklist were completed by both groups before and after the education. The collected data were analyzed using independent *t*-test and paired test. The significant level was considered statistically <0.05.

RESULTS: The findings of independent *t*-test did not show any significant difference between satisfaction and clinical practice scores of theater and control group before intervention while a statistically significant difference was observed in after intervention between the scores of two groups ($P = 0.001$). Paired *t*-test showed a statistically significant difference in satisfaction and clinical practice score in two groups after intervention theater and control group, respectively ($P = 0.002$, $P = 0.002$).

CONCLUSION: Theater method in postpartum hemorrhage can be increased satisfaction and clinical practice levels in midwifery students. Hence, the conduction of this educational model is recommended as an effective learning.

Keywords:

Midwifery, postpartum hemorrhage, student, teaching, theatre

Introduction

Nowadays, educational organizations, to survive and progress among other educational institutions, must adopt continuous excellence and improvement. In the meantime, more than two decades of work and activity on the change of the educational system have shown that if professors are not committed to reform, there would be no reform. However, the transformation of the educational system cannot be successful and should not be carried out except with the direct participation of students in all of its aspects.[1] In fact, it seems that changes in existing learning and teaching methods to include students, especially medical students – in the educational process, and in other words, participatory learning or student-centered learning is more desirable. The teaching method has a dramatic effect on the students' self-learning ability and skill. Successful professors and instructors are those who engage students in the curriculum.[2,3] In this regard, the development of clinical skills of nursing and midwifery students is a critical part of nursing and midwifery educational program, and provision of a sufficient

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opportunity to gain experience on obtaining the necessary professional qualification is very important. Instructors are constantly trying to identify, compare, and apply different teaching and learning methods for effective and efficient education to train specialized and competent students.[4] One of the most important educational methods used in different fields is the use of role-playing or theatrical learning model. The theater scene can be anywhere; a stage in a magnificent amphitheater or an outdoor platform or even the corner of the street. The scope of the scene is so extensive that we do not set a boundary for it. However, an empty stage is something like a void that has no definition without its constituent elements. The stage of a theater hall has no value without the theatrical performance and as long as there is nothing at play. The stage assumes and follows its spatial definition based on the performance; and place and time in the form of symbols and codes, shape the mindset of the audience through the elements of the scene such as apparel, decoration, acting, lighting, and dialog.[4,5] The use of dramatic arts in education is very powerful and provides a level of engagement that is not possible with most traditional training methods. The instructor guides the youth to better understand social behaviors, their role in social interactions, and effective ways to solve problems.[6] This approach helps teenagers to collect and organize information about social and cooperation issues, collaboration, and acquire life skills. A show (theater) for the younger generation is a much more valuable and efficient way, since while it creates a safe environment by providing opportunities for changing roles, improves their better understanding of communication methods in current and past events, and seeing the world from the other people's perspective; while giving the teenagers and youngsters, the opportunity to express their ideas in a way that is never possible or allowed in the real world.[6-8] Furthermore, in theatrical performance, there is an opportunity to improve interpersonal relationships through role-playing and conversation in the future and achieve its practical and empirical results.[1,9] Since severe bleeding during childbirth is one of the major causes of maternal death worldwide, and also midwifery students should use all their efforts in this midwifery emergency field, as well as the need to apply and integrate science and art together in different areas – particularly medicine – and the use of new educational methods; the researcher decided to carry out a study aimed at determining the effect of speed and accuracy technique on postpartum hemorrhage management on the current midwifery students.

Materials and Methods

This quasi-experimental study was conducted on all midwifery students of the Nursing and Midwifery Faculty of Isfahan University of Medical Sciences, Isfahan, Iran. In the beginning, a scenario and the play script on postpartum hemorrhage management was drawn up step by step in accordance with the existing national guidelines and standards, and the instructions of the Ministry of Health and Medical Education of the country. In this play, which was performed at Shahid Beheshti Medical Center, 7–8 students participated in the play in each training course period. The theater and the related play were conducted in the delivery room and in the presence of its audience (other midwifery students and midwives working in the maternity ward). It should be noted that the whole theatrical performance was carried out using real equipment in the real environment of the labor room. In the implementation of this technique, midwifery students watched the play as a staged scene. One person played the role of midwife, one played the role of parturient mother, and one played the role of midwife assistant. A clinical trainer also participated as the director of the theater. This play was written in parts and was submitted to the related trainer. Before and after any educational intervention (immediately, 1 week and 4 months later) in both control and intervention groups, a questionnaire about the satisfaction of postpartum hemorrhage management training was completed as well as a checklist for their performance. The postpartum hemorrhage management training satisfaction questionnaire consisted of four questions (satisfaction of the performance environment, time of performance, performance method, and the available facilities) based on the 5-point Likert scale, from dissatisfaction (0) to very high (4) and the score range was between 0 and 16. The student performance checklist also had eight parameters (ocular diagnosis of hemorrhage level, two-hand massage, cervical and vaginal rupture examination, diagnosis and examination of the atonic and loose uterus, request for help, intravenous line, medications, foley catheter, and oxygen), and it was based on the 5-point Likert scale from no intervention (0) to excellent (4) and the score range was between 0 and 32. The formal and content validity of both questionnaires of satisfaction and the performance of postpartum hemorrhage management were confirmed. The reliability of both questionnaires was calculated and confirmed by Cronbach's alpha coefficient which showed a high reliability ($r = 0.85$ and $r = 0.91$, respectively). It should be noted that in the speed and accuracy technique, all of these processes were initially carried out in slow motion, and then all phases of postpartum hemorrhage management were taught in a rapid manner using a timer. Considering that this method has been carried out consecutively in the first and second semesters of 2014, 2015, 2016, and 2017, this method is also being implemented in this faculty as the preferred method. The control group received the usual trainer-centric training. The study protocol and its ethical

considerations were approved by the Applied Research Council and Ethics Committee of Isfahan University of Medical Sciences (approved research project code 294228).

Data were analyzed using Student's *t*-test, paired *t*-test and using SPSS software version 16 (SPSS Inc., Chicago, IL, USA).

Results

The result showed that the mean ± standard deviation of the students' age was 21.2 ± 0.3 years, and total scores were 15.2 ± 1.4. Furthermore, the mean ± standard deviation of satisfaction score about postpartum bleeding management education before and after the intervention in the experimental and control groups was 1.12 ± 0.1 and 1.33 ± 0.2, respectively.

The results of paired *t*-test showed that there was a significant difference between satisfaction score about postpartum hemorrhage management training before and immediately and 1 month after intervention in of speed and precaution technique group ($P = 0.002$ and $P = 0.002$). Whereas there was no significant difference between the satisfaction score about postpartum hemorrhage management training before and immediately and 1 month after intervention in the control group ($P = 0.23$ and $P = 0.33$) [Table 1].

The results of paired *t*-test showed that there was a significant difference between performance score about postpartum hemorrhage management training before and immediately and 1 month after intervention in of speed and precaution technique groups ($P = 0.006$ and $P = 0.012$). Whereas there was no statistically significant difference between performance score about postpartum hemorrhage management training before and immediately and 1 month after intervention in the control group ($P = 0.52$ and $P = 0.13$) [Table 2].

Table 1: Comparison of the mean and standard deviation of satisfaction score about postpartum hemorrhage management training in intervention and control groups

Satisfaction score	Control group	Intervention group	*P*, *t*-student
Before intervention	1.3±0.2	1.2±0.1	0.412
immediately after intervention	1.2±0.1	1.56±0.2	0.002
Paired *t*-test, *P*	0.23	0.002	
1 week after intervention	1.3±0.3	1.59±0.1	
Paired *t*-test, *P*	0.12	0.002	0.002
4 months after intervention	1.2±0.4	1.59±0.2	0.001
Paired *t*-test, *P*	0.33	0.002	

Table 2: Comparison of the mean and standard deviation of performance score about postpartum hemorrhage management training in intervention and control groups

Performance score	Control group	Intervention group	*P*, *t*-student
Before intervention	13.9±0.2	14.3±0.1	0.252
Immediately after intervention	14.4±0.1	30.6±0.2	0.005
Paired *t*-test, *P*	0.13	0.006	
1 week after intervention	15.3±0.3	31.5±0.1	
Paired *t*-test, *P*	0.52	0.012	0.001
4 months after intervention	14.2±0.4	29.9±0.2	0.004
Paired *t*-test, *P*	0.43	0.015	

Discussion

The results of this study, which aimed to determine the effect of speed and accuracy technique on performance and the clinical satisfaction of midwifery students in postpartum hemorrhage management, showed that the mean score of satisfaction and performance of students after intervention compared to before intervention in the role-play performance group were significantly higher than the control group.

This reflects the purposeful performance and time management of the students using this technique. In this regard, the study by Bitsika also indicated that the use of role-play approach increased the speed and proper performance of nursing students in the venipuncture skill.[10] Orde study on nursing students in Australia also showed that using an active clinical approach based on students' performance in the hospital environment reduced the time of laryngeal mask insertion skill.[11] Mohammadirizi study also indicated that the use of active role-playing in the maternity ward increased the efficacy of midwifery students.[12]

Furthermore, Jenko study showed that there was no significant difference in the use of the four-step method in cardiac massage skill in patients with myocardial infarction across the 1st-year students compared to the control group.[13] Perhaps, one of the possible reasons for noncompliance with the present study is the difference in the choice of research units in both studies, i.e., in the Jenko study, the 1st-year students, and in the present study, the students of the final year have been used. It seems that the 1st-year students need more training than the final year students.

Conclusion

The results of this research over the 4 consecutive academic years showed that this method increased the level of qualitative and quantitative ability of psychomotor skills of students in the stressful labor environment and increased their satisfaction. Such that in addition to increasing the quality level and improving the student performance, their speed of

patient care improvement at high-risk conditions also increased, so that the time of patient care as well as the correct implementation of care for women at this stage of pregnancy significantly decreased and increased, respectively.

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Conflicts of interest

There are no conflicts of interest.

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