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The effect of "clinical virtual round" on clinical self-efficacy among midwifery students

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Abstract:

BACKGROUND: One of the methods of clinical education is clinical rounds which makes students more skilled in the comprehensive care of patients. since midwifery students are faced with low-risk and high-risk cases of mothers during the perinatal period, Therefore, it is necessary to pay attention to their clinical self-efficacy. The aim of this study was to determine. The effect of "clinical virtual round" on clinical self-efficacy among midwifery students.

MATERIALS AND METHODS: The study was experimental with the control group design. The subjects were randomly divided into the intervention (n = 30) and control (n = 30) groups. two groups received clinical virtual round and report back model (respectively). subjects in both groups responded to the 20-item clinical self-efficacy Questionnaire, before and after the intervention. Data were analyzed with paired *t*-test and t-student by SPSS v 22.

RESULTS: The baseline mean ± SD scores for clinical self-efficacy in interventional and control groups were 10.1 ± 1.32, and 10.1 ± 3.05 respectively (P = 0.233). clinical virtual round increased clinical self-efficacy (65.1 ± 1.42) of midwifery students compared with the control group (11.1 ± 1.72) (P = 0.002).

CONCLUSION: According to this study's results, it is recommended that clinical virtual rounds can be increasing clinical self-efficacy among midwifery students.

Keywords:

Clinical education, clinical round, midwifery students, self-efficacy, virtual round

Introduction

Midwifery education is a part of the medical education system that is related to mother and child health. Clinical education is the most important part of midwifery education and the heart of professional education.[1,2] In clinical education, the student interacts with the professor and the clinical educational environment to apply the previously learned theoretical and practical concepts in real situations and with patients.[3,4] One of the activities and programs of clinical education that makes me familiar with the processes of care, diagnosis, and treatment of patients is the use of clinical rounds.[5] Clinical rounds are activities that facilitate learning in clinical environments, the purpose of which is to create changes and clinical vision in students. Clinical rounds provide learning opportunities such as acquiring clinical knowledge, clinical reasoning, clinical self-efficacy, communication skills, and professionalism to learners.[6] With the spread of the coronavirus, strict social distancing rules were adopted all over the world. The result of this decision had negative effects on medical education and disrupted all clinical activities in the hospital. Because the students might have been infected during the education process, spreading the virus without symptoms or participating in the transmission of the

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virus. The new guidelines of medical education have recommended that students should not face patients directly in such situations.[7] Also, during the covid pandemic, medical students were dissatisfied due to a lack of clinical training and a lack of interaction with patients. Therefore, it seems necessary to apply educational measures that lead to engaging with the patient remotely and maintaining safety. The use of traditional electronic resources was able to develop the ability of students for professional clinical skills to some extent, but it could not be a substitute for clinical education at the patient's bedside.[8,9] In this regard, the study of Pennell (2020) and colleagues on Australian medical students showed that the use of virtual bedside rounds in the conditions of the Corona pandemic is an alternative and a suitable tool for training students, as well as a cost-effective and available substitute for face-to-face rounds.[10] Cunningham *et al*.'s study (2009) also showed that holding virtual grand rounds for final-year medical students will increase cognitive skills.[11] In addition, studies by Ghafari *et al*. (2020) and Mohamadirizi *et al*. (2021) also showed that the use of virtual training in students and nurses improves their level of satisfaction and clinical performance.[12,13] Also, another informant in 2022 showed that the use of virtual training in stressful environments such as a maternity hospital can make students satisfied with the training of this department.[14] Therefore, considering the importance of using clinical skills based on evidence and improving the level of performance and self-efficacy of midwifery students in special and sensitive departments such as labor, as well as considering the use of modern teaching methods to hold educational sessions as best as possible at the patient's bedside, The aim of this study was to determine The effect of "clinical virtual round" on clinical self-efficacy among midwifery students.

Materials and Methods

Study design and setting

The present study was a two-group experimental study that was conducted on 60 midwifery students in their final year of Isfahan University of Medical Sciences. Sampling was done by random-convenience method. After obtaining the code of ethics from Isfahan University of Medical Sciences, the researcher, in coordination with the vice-chancellor of the faculty and the director of the midwifery and reproductive health department, asked the students to read the consent form and participate in the study.

Study participants and sampling

In this study, final-year undergraduate midwifery students were randomly assigned to two intervention groups (a virtual outpatient clinic) and a control group (regular education). In the virtual clinical round group in the sky room, first, the student explained his case (including a complete history, clinical examinations, and paraclinical tests). Then he presented theoretical information (including definition, prevalence, risk factors, trends, and outcomes) for 10 minutes. Finally, the instructor explained the actions, weaknesses, and strengths of each student, as well as the orders and actions performed. In the control group, a clinical round was held in the hospital environment in the labor department using the report-back model method. In this method, the student individually or in a group without the teacher's supervision took the history of the pregnant mother and performed physical examinations, and then reported to the relevant instructor. The cases and the instructor were the same in both groups. Before and after the study, a 20-question clinical self-efficacy questionnaire was completed in both groups.

Data collection tools

Clinical self-efficacy questionnaire

This questionnaire includes 4 dimensions (patient examination, diagnosis, and planning, implementation, and evaluation) based on a 4-point Likert scale from 1 to 4, the range of scores in each area is 5-20 and the total score is 20-80. The content and form validity of this questionnaire was confirmed through CVR and CVI and its reliability through Cronbach's alpha coefficient (89%).

Ethical consideration

Ethical aspects of this study were approved by the Nursing and Midwifery Care Research Center, Isfahan University of Medical Sciences, Isfahan, Iran (IR.MUI.NUREMA.REC.1400.200).

Data analysis

After collecting data, it was analyzed using SPSS version 22 statistical software and parametric statistical tests (*t*-test and paired t).

Result

The results of the present study showed that before the intervention, the individual and academic variables of both groups were homogeneous [Table 1].

The results of the independent *t*-test showed that before the intervention, there was no statistically significant difference between the total and 4 dimensions of self-efficacy scores (examination, diagnosis and planning, implementation, and evaluation) between the two groups ($P > 0.005$) [Table 2]. While after the intervention, there was a statistically significant difference ($P < 0.005$) [Table 3].

Discussion

The results of the present study showed that the use of virtual clinical rounds increased the clinical

Table 1: Mean and standard deviation some variables before intervention in two groups

	Groups		
Variables	Control Mean±SD	Virtual clinical round Mean±SD	*t*-test
Age	0.44±21.04	0.32±21.01	*P*=0.233
Internship score	0.4±16.12	16.33±2.3	*P*=0.503
Average score	15.89±0.01	15.53±2.4	*P*=0.460
The number of observed cases	11.52±0.09	10.71±0.47	*P*=0.124

Table 2: Mean and SD of total and 4 dimensions of self-efficacy scores before intervention in two groups

	Groups		
Self-efficacy	Control Mean±SD	Virtual Clinical round Mean±SD	*t*-test
Total I score	10.1±3.05	10.1±1.32	*P*=0.233
Patient examination	10.6±1.12	10.7±0.32	*P*=0.140
Diagnosis and planning	6.2±1.22	5.9±1.41	*P*=0.360
Implementation of the care program	5.1±1.40	5.3±0.02	*P*=0.734
Evaluation	6.4±0.52	6.1±1.17	*P*=0.551

Table 3: Mean and SD of total and 4 dimensions of self-efficacy scores after intervention in two groups

	Groups		
Self-efficacy	Control Mean±SD	Virtual Clinical round Mean±SD	*t*-test
Total I score	11.1±1.72	65.1±1.42	*P*=0.002
Patient examination	10.6±1.52	18.6±0.32	*P*=0.001
Diagnosis and planning	6.4±1.22	16.71±1.01	*P*=0.030
implementation of the care program	6.3±1.45	15.5±0.32	*P*=0.004
Evaluation	6.2±0.12	16.4±0.32	*P*=0.032

self-efficacy score of midwifery students. In this regard, the study of Pennel and colleagues (2020) in Australia showed that the use of bedside rounds as a video conference in the conditions of the Corona pandemic is an alternative and suitable tool for teaching students, as well as a cost-effective and available substitute for face-to-face rounds.[10] Cunningham *et al*.'s study (2009) also showed that holding virtual grand rounds for final-year medical students will increase cognitive skills successfully.[11] Kumta (2003) also showed that the use of virtual educational programs for final-year medical students will increase their cognitive skills successfully.[15] In fact, in the clinical round, it is an educational approach in which the real patient is understood in the educational process. These rounds are based on the clinical skills training of medical students. Clinical rounds have been described in different clinical areas and in different frameworks. The term round has been used in different ways in health-related professions. Rounds that are performed at the patient's bedside are more common in health professions such as nursing and midwifery.[16] Finally, what has increased the clinical self-efficacy of midwifery students in sensitive and high-risk areas such as labor and maternity, is the use of the educational clinical round that was conducted virtually in free hours, which can be used in different educational areas and in departments be used again.

Limitation and recommendation

The limitations of the present study include the insufficient Internet access speed during training and the short size of content to completion. According to the results of the study, it is recommended that teachers use this method to the promotion of students' self-efficacy in the labor wards.

Conclusion

Virtual Clinical rounds may have a useful and effective role in clinical self-efficacy promotion among midwifery students in the labor ward.

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Conflicts of interest

There are no conflicts of interest.

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