

## Original Article

### Evaluating the Views of Midwifery Students about Simulation Education

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#### Abstract

**Objective:** This study aimed to determine the views of midwifery students on simulation education and increase students' awareness by drawing attention to simulation education.

**Method:** Designed in cross-sectional and descriptive type, and conducted between 06 and 24 March 2017, the study involved a total of 173 students attending the midwifery department of Eskisehir Osmangazi University, Health Sciences Faculty. The data of the study were collected through a 24-item questionnaire, which was prepared for evaluating the knowledge and views of the students about simulation education. The data were analyzed through SPSS 21 software, and frequency distribution and chi-square test were used in the analysis.

**Findings:** 51.2 % (n = 66) of the students described the simulation as "live use of models". 95.4 % (n = 165) of the students in the study stated that they would like to take simulation education during their school years. The students reported that simulation education would improve their communication skills (72.3 %, n=125), critical thinking (68.2 %, n=118), professional skills (85 %, n=147), and professional accountability (80.9 %, n=140). On the other hand, 71.7 % of the students (n=124) stated it would influence adopting the profession, while 79.2 % said it would reduce anxiety during practice (n=137). Students who wanted to take simulation education also stated that their education should be strengthened by involving simulation education before starting the clinical practice and that the use of simulation in midwifery education must be compulsory (p <0.05 for each).

**Conclusion:** As a result of the study, it was found that the majority of the students wanted to take simulation education during their school years and that they thought it would strengthen their professional training and development. In the light of these findings, it can be concluded that the use of simulation in student education will have positive outcomes from students' perspective, and it can be recommended that the contribution of simulation education to students should be reevaluated.

**Key words:** Simulation, Simulation education, Midwifery student

#### Introduction

The development of technology has made important contributions to teaching and learning methods, and simulation education is part of it. Although simulation education is a teaching method that provides learning by studying a case or event considering as if it were real, it is rather defined as the use of patient models to learn,

practice, and rehearse the procedures in care and treatment process (Daniels et al., 2012).

Simulation education can be employed in different branches of science as well as in health education. The simulation education utilized in health education is based on the principles that aim to develop health workers' professional competence, personal behaviors, interpersonal

interactions, and quick decision making and problem-solving skills, and increase their performance of giving response. It is thought that simulation education will have health professionals become better communicators, who determine the priorities better and thus is less likely to make mistakes (Vermeulen et al., 2017). In health education, simulators are used to provide simulation education. The simulators employed are grouped as non-high-tech simulations (three-dimensional organ models, basic plastic models, animal models, human cadavers and simulated/standardized patients) and high-tech simulations (image based simulators, realistic/high compatibility interventional simulators, realistic/high tech interactive human simulators, virtual reality and touch systems) (Goris, Bilgi & Bayindir, 2014). Simulations are often used for three main purposes: research and planning, evaluation of mastery, and education (Goris, Bilgi & Bayindir, 2014; Midik & Kartal, 2010). In accordance with these aims, as is also stated in literature, the use of simulation in midwifery, nursing and medical education is highly beneficial for students, patients, instructors, and institutions (Sendir & Dogan, 2015; Terzioglu et al., 2012).

When the positive outcomes relating to interventions, the safety of patients, and obstetric emergencies are taken into consideration, simulation education in midwifery education can be seen to gain importance. The management mistakes experienced during an obstetric crisis can be identified with the help of simulation education that supports the development of professional skills. This education helps provide real-like environment opportunities to gain necessary qualifications in a safe environment before starting the practice (Lendahls & Oscarsson, 2017). The use of simulation training in formal education has been approved by the Institute of Medicine, Joint Commission on Accreditation of Healthcare Organizations and the American Congress of Obstetricians and Gynecologists. It has been reported that simulation training can improve clinical skills, strengthen interdisciplinary team work, and reduce miscommunication (Maslovitz, 2004).

High costs, need for different educational environments and tools, need for planning for implementation, and being time-consuming are the disadvantages of simulation education (Cooper et al., 2012). In spite of these disadvantages, it was reported in a study

conducted by Foronda et al. that the method of learning with simulation at the bachelor level was more effective than traditional learning methods (Foronda, Liu & Bauman, 2013). There is a need for up-to-date teaching methods which can easily keep up with the developing technology, quickly grasp the developments, and are compatible with the new generation technology. For this reason, this study was carried out to uncover the opinions of students studying in midwifery department about simulation education and increase their awareness by attracting attention to simulation education.

## **Materials and Methods**

This study, which was designed in cross-sectional and descriptive type, was conducted between 06 and 24 March 2017 on students attending the midwifery department of Eskisehir Osmangazi University, Health Sciences Faculty. There is a skills laboratory belonging to the midwifery department in the faculty, where the study was conducted. There is another laboratory in the faculty, and it is shared with the nursing department. There are birth and human models in the skills laboratory of the midwifery department. There is also simulation material related to the midwifery practices in the department.

## **Sampling**

There were 298 students in the Midwifery Department of Eskisehir Osmangazi University, Faculty of Health Sciences during 2016-2017 academic year. A total of 173 students (58 %) who were present at school during the data collection period and agreed to participate in the study constituted the study group.

## **Data Collection Tools and Data Collection Procedure**

A questionnaire form, which was in line with the purpose of the study and was prepared based on the related literature, was used as the data collection tool (Goris, Bilgi & Bayindir, 2014; Edeer & Sarikaya, 2015). The questionnaire contained 24 items questioning the demographic features, and views and knowledge of the students about simulation education. The first, second, third and fourth year students studying in midwifery department of Eskisehir Osmangazi University, Health Sciences Faculty gathered separately in different classrooms. The researcher provided the students with information about the topic and purpose of the study. The written consent of the students who agreed to participate

in the study was obtained. The questionnaire forms were handed out to the students and the forms were filled in by the students themselves under the supervision of the researcher. This process took approximately 10-15 minutes.

### Legal and Ethical Issues

The written permission of Eskisehir Osmangazi University, Health Sciences Faculty was obtained. Informed verbal and written consents of the work group were taken.

### Data Analysis

The data of the study obtained through the implementation of the questionnaire were analyzed in IBM SPSS (Version 21.0) statistical software package. For the analysis of the data, frequency distribution and chi-square test were employed. Statistical significance was taken as  $p < 0.05$ .

### Results

The mean age of the students participating in the study was  $20.34 \pm 1.86$  (min-max = 18-31). Table 1 presents information about the descriptive characteristics of the students. When the opinions of the students about their education were examined, 85 % (n=147) of them were found to describe the teaching method employed in their classes as 'traditional teaching method' and 50 % (n=87) as 'question-answer method'. In addition, 66.5 % (n = 115) stated that the laboratory conditions were quite poor. 54.8 % of those who mentioned the insufficiency of the lab conditions (n = 63) said it was due to the lack of medical equipment and models, whereas 45.2 % (n = 52) mentioned old-fashioned models, which did not fit the applications (Table 1). When the students' knowledge about simulation was examined, 51 % (n = 66) of the students were determined to identify the term 'simulation' as "live / real-like use of models", whereas 62.4 % of them (n = 108) were found to have general knowledge about simulation. 69 % (n=75) of those who knew simulation stated they learned it from the Internet. Furthermore, 67.1 % of the students (n = 116) were found to know "basic plastic models", which are among simulation tools. 95.4 % (n = 165) of the students in the study stated that they wanted to take simulation education during their school years (Table 1). The first-year students (35.8 %, n = 62) stated that they wanted to take more simulation education in comparison to other classes. The students in the study stated that simulation education would improve their communication

skills (72.3 %, n=125), critical thinking (68.2 %, n=118), professional skills (85 %, n=147), and professional accountability (80.9 %, n=140). In addition, 71.7 % of the students (n=124) said it would affect adopting the profession, and 79.2 % (n=137) stated it would decrease anxiety during practice. It was also determined that 94.2 % (n = 163) of the students in the study wanted pre-clinical courses given in the school to be strengthened by simulation studies, and that 74 % (n = 128) thought that the use of simulation method in midwifery education should be compulsory (Table 2). While no statistically significant difference was found between the students who wanted to take simulation education in the school and their school year ( $p > 0,05$ ), a statistically significant difference was found when the status of demanding simulation education (95.4%, n = 165) and the status of the view that simulation education would develop critical thinking, professional skill level, and professional accountability, the status of affecting the adoption of the profession, and the status of reducing anxiety during practice were compared ( $p < 0.05$  for each). Additionally, a statistically significant difference was also found when the status of students' desire to take simulation education, and strengthening the pre-clinical education with simulation and the necessity of using simulation education in education were compared ( $p < 0.05$  for each) (Table 2).

### Discussion

This study aimed to evaluate the views of midwifery students about simulation education and raise the awareness of the students by attracting attention to simulation education. The development of professional skills as well as theoretical knowledge in midwifery education is of great importance. It is necessary to increase students' professional skills in virtual or laboratory settings before performing in actual patient care environment (Gurol, Balci-Akpınar & Ejder-Apay, 2016). Studies have found that pre-clinical education and laboratory settings are poor, students cannot apply the theoretical knowledge they have learned into the classroom environment in the clinical setting adequately, and that they do not find themselves competent in terms of clinical skills (Goris, Bilgi & Bayındır, 2014; Kocak et al., 2017). The students participating in this study pointed out that the laboratory conditions in their school were inadequate for their education.

**Table 1. The students by their descriptive information, learning environments, and knowledge and views about simulation**

Features	n	%
<b>Year</b>		
I	65	37.6
II	31	17.9
III	41	23.7
IV	36	20.8
<b>Place of residence</b>		
Province	88	50.9
County / Town / Village	85	49.1
<b>Income</b>		
Income < expenses	37	21.4
Income = expenses	120	69.4
Income > expenses	16	9.2
<b>Choosing midwifery department willingly</b>		
Yes	132	76.3
No	41	23.7
<b>Following scientific advances</b>		
Yes	133	76.9
No	40	23.1
<b>Teaching method (n=415*)</b>		
Traditional teaching	147	85.0
Question-answer	87	50.3
Watching videos	80	46.2
Discussion	63	36.4
Case study	38	22.0
<b>Laboratory conditions</b>		
Sufficient	58	33.5
Insufficient	115	66.5
<b>Reasons for the poor lab conditions (n=115**)</b>		
Insufficient medical material and models	63	54.8
Old-fashioned models	52	45.2
<b>Describing simulation</b>		
Live / real-like use of models	66	51.2
Something unreal	32	18.5
Imaging technology	31	17.9
No idea	44	25.4
<b>Having information about simulation</b>		
Yes	108	62.4
No	65	37.6
<b>Information sources (n=108)**</b>		
The Internet	75	43.4
Peer / friend	14	8.1
School courses	9	5.2
<b>Known simulation tools (n=314) *</b>		
Basic plastic models	116	67.1
3D organ models	84	48.6
Image-based simulators	56	32.4
Simulated patient meetings	32	18.5
High-tech interactive patient simulator	26	15.0
<b>Willing to take simulation education</b>		
Yes	165	95.4
No	8	4.6
<b>Total</b>	<b>173</b>	<b>100.0</b>

\* More than one response from the students

\*\* Calculated considering the students who had information about simulation

**Table 2. The distribution of the status of students' desire to take simulation education by some features and their thoughts about the profession**

Features	Desire to take simulation education				Test value ( $\chi^2$ p)
	Yes n (%)	No n (%)	No idea n (%)	Total n (%)	
<b>Year</b>					
I	62 (35.8)	2 (1.2)	1 (0.6)	65 (37.6)	1.245 0.975
II	30 (17.3)	0 (0.0)	1 (0.6)	31 (17.9)	
III	39 (22.5)	1 (0.6)	1 (0.6)	41 (23.7)	
IV	34 (19.7)	4 (2.3)	1 (0.6)	36 (20.8)	
<b>Improving communication skills</b>					
Yes	121 (69.9)	2 (1.2)	2 (1.2)	125 (72.3)	3.584 0.465
No	8 (4.6)	0 (0.0)	0 (0.0)	8 (4.6)	
Partly	36 (20.8)	2 (1.2)	2 (1.2)	40 (23.1)	
<b>Improving critical thinking</b>					
Yes	116 (67.1)	1 (0.6)	1 (0.6)	118 (68.2)	<b>10.96</b> <b>0.027</b>
No	6 (3.5)	1 (0.6)	0 (0.0)	7 (4.0)	
Partly	43 (24.9)	2 (1.2)	3 (1.7)	48 (27.7)	
<b>Improving professional skill level</b>					
Yes	144 (83.2)	2 (1.2)	1 (0.6)	147 (85.0)	<b>34.01</b> <b>0.000</b>
No	1 (0.6)	1 (0.6)	0 (0.0)	2 (1.2)	
Partly	20 (11.6)	1 (0.6)	3 (1.7)	24 (13.9)	
<b>Developing professional accountability</b>					
Yes	137 (79.2)	1 (0.6)	2 (1.2)	140 (80.9)	<b>15.04</b> <b>0.005</b>
No	4 (2.3)	1 (0.6)	0 (0.0)	5 (2.9)	
Partly	24 (13.9)	2 (1.2)	2 (1.2)	28 (16.2)	
<b>Influencing adopting the profession</b>					
Yes	122 (70.5)	0 (0.0)	2 (1.2)	124 (71.7)	<b>18.69</b> <b>0.001</b>
No	9 (0.2)	2 (1.2)	0 (0.0)	11 (6.4)	
Partly	34 (19.7)	2 (1.2)	2 (1.2)	38 (22.0)	
<b>Reducing anxiety during practice</b>					
Yes	135 (78.0)	0 (0.0)	2 (1.2)	137 (79.2)	<b>20.74</b> <b>0.000</b>
No	4 (2.3)	1 (0.6)	0 (0.0)	5 (2.9)	
Partly	26 (15.0)	3 (1.7)	2 (1.2)	31 (17.9)	
<b>Strengthening the pre-clinical education through simulation</b>					
Yes	157 (90.8)	3 (1.7)	3 (1.7)	163 (94.2)	<b>45.840</b> <b>0.000</b>
No	0 (0.0)	1 (0.6)	0 (0.0)	1 (0.6)	
Partly	8 (4.6)	0 (0.0)	1 (0.6)	9 (5.2)	
<b>Necessity to use simulation in education</b>					
Yes	124 (71.7)	1 (0.6)	3 (1.7)	128 (74.0)	<b>36.256</b> <b>0.000</b>
No	7 (4.0)	3 (1.7)	0 (0.0)	10 (5.8)	
Partly	34 (19.7)	0 (0.0)	1 (0.6)	35 (20.2)	
<b>Total</b>	<b>165 (95.4)</b>	<b>4 (2.3)</b>	<b>4 (2.3)</b>	<b>173 (100.0)</b>	



Today, students cannot always gain appropriate clinical experience as a result of spending less time in the clinic due to such reasons as insufficient clinical practice areas available in the complicated structure of the health system, shortened hospital stay, and educational reasons (Rhodes & Curran, 2005). However, midwives are expected to have the ability to exhibit perfect professional skills despite all these negative conditions. When the limitations mentioned here are considered, simulation education plays a key role in the qualification of midwifery students, who are educated in the ever-changing health care system (Vermeulen et al., 2017). While Issenberg et al. (2005) describe simulation as a method in which students would need to act as if they were in a real situation, Gaba (2007) defines it as a technique that helps experience a real-like environment in advance through guidance. Similar to the findings in the literature, it was determined that 51.2 % (n = 66) of the students participating in our study defined the term simulation as "live / real-like use of models". Students expect simulation studies to give them real-like practice opportunities.

The use of scenario/computer simulation education in order to prepare midwifery students for the clinical environment and increase their competence and self-confidence in clinical practice has begun to attract attention in recent years in Turkey. However, no studies sharing the experiences and outputs of midwifery students related to the topic have been brought in the literature, yet. On the other hand, there are some studies abroad on the use of scenario/computer simulation in midwifery education (Lendahls & Oscarsson, 2017; Rindt, 2013; Smith et al., 2012). In a study conducted by Lendahls and Oscarsson to investigate the experiences of midwifery students on simulation and skills education, it was reported that simulation and skills education supported the development of midwifery skills and facilitated the learning capacity of students while moving from theory to practice (Lendahls & Oscarsson, 2017). The systematic review by Sendir and Dogan carried out to evaluate the use of simulation in nursing education demonstrated that simulation practices contributed to the development of critical thinking and self-confidence levels as well as having students gain clinical skills and competence (Sendir & Dogan; 2015). A study of the effect of simulation education on the communication skills of students conducted by

Martin and Chanda found that the therapeutic communication post-test scores of the students following simulation application with a simulated patient were significantly higher than their pre-test scores (Martin & Chanda, 2016).

In the study conducted by Terzioglu et al., students recommended that the skills study carried out in the laboratory and classroom environments before the clinical practice were generally functional for them and that the models should be replaced by sophisticated and up-to-date models so that they could feel more competent (Terzioglu et al., 2012). Liaw et al. also reported in their study that the knowledge and skills of the students studying with simulation were higher (Liaw et al., 2012).

In a study by Basak et al. on the perceptions of students about the use of a patient simulator, it was stated that student satisfaction and perception relating to the most realistic patient simulator was more positive (Basak et al., 2016). A study by Omer on students' experience of simulation revealed that there was a significant increase in the level of knowledge and self-confidence of students taking simulation education following the education (Omer, 2016). Taking these studies into consideration, it can be stated that there may be an increase in students' skill level and self-confidence after simulation education. In our study, students stated that they thought their communication skills, critical thinking, and professional skill level would improve when they took simulation education. They also added it would influence adopting the profession and reduce anxiety during practice.

In our study, the majority of the students (95.4%) who were willing to take simulation education during their school years stated that simulation education would improve their critical thinking, professional skill level, and professional accountability, influence adopting the profession and reduce anxiety during clinical practices ( $p < 0.05$  for each). On the other hand, these students also said that training should be strengthened by simulation before starting clinical practice and that the use of simulation in midwifery education should be obligatory ( $p < 0.05$  for each).

According to these results, the students want to take simulation education and they think that it will make positive contributions to their education and professional development.

## Conclusion and Recommendations

The results of the study indicated that the majority of the students wanted to take simulation education during their education process and they thought it would strengthen their professional education and development. The traditional methods used in acquiring knowledge, skills, and attitudes in midwifery education prove inadequate in critical thinking and decision-making process in clinical practice. For this reason, the importance of the simulation in the learning process, which helps the students to integrate knowledge and skills with active learning opportunities, is constantly increasing. In this respect, research results on simulation-based training in midwifery education are of great significance. In the light of these findings, it can be said that the use of simulation in student education will have positive outcomes from students' perspective, and it can be recommended that the contribution of simulation education to students should be revisited.

## References

- Basak T., Unver V., Moss J., Watts P., Gaioso V.(2016) Beginning and advanced students' perceptions of the use of low-and high-fidelity mannequins in nursing simulation. *Nurse Education Today* 36: 37-43.
- Cooper S., Cant R., Porter J., Bogossian F., McKenna L., Brady S., & Fox-Young S. (2012) Simulation based learning in midwifery education: a systematic review. *Women and Birth* 25(2): 64-78.
- Daniels K., Erickson L., Andreatta P.B., Pliego J.F., Goffman D. (2012) Simulation-based team training in obstetric emergencies. *Contemporary OB/GYN* 57 (5): 30-39.
- Edeer A.D., Sarikaya A. (2015) Use of Simulation in Nursing Education. *Journal of Nursing Education and Research* 12(2): 121-125.
- Foronda C., Liu S., Bauman E.B. (2013) Evaluation of simulation in undergraduate nurse education: An integrative review. *Clinical Simulation in Nursing* 9(10): 409-416.
- Gaba D.M. (2007) The future vision of simulation in healthcare. *Simulation in Healthcare* 2(2): 126-135.
- Goris S., Bilgi N., Bayindir S. (2014) Use of simulation in nursing education. *Duzce University Health Sciences Institute Journal* 1(2): 25-29 (in Turkish).
- Gulol A., Balci Akpınar R., Ejder Apay S. (2016) The Impact of Simulation Applications on the Skill Levels of Students. *Kocatepe Medical Journal* 17: 99-104 (in Turkish).
- Issenberg S.B., McGaghie W.C., Petrusa E.R., Gordon L., Scalese R.J. (2005) Features and uses of high-fidelity medical simulations that lead to effective learning: a BEME systematic review. *Medical Teacher* 27(1): 10-28.
- Kocak Y.C., Can H.O., Yucel U., Akyuz M.D., Turfan E.C. (2017) Academic and Physical Profile of Midwifery Departments in Turkey. *Journal of Health Sciences and Occupations* 4(2): 88 (in Turkish).
- Lendahls L. & Oscarsson M.G. (2017) Midwifery students' experiences of simulation-and skills training. *Nurse Education Today* 50: 12-16.
- Liaw S.Y., Scherpbier A., Rethans J., Klainin-Yobas P. (2012) Assessment for simulation learning outcomes: a comparison of knowledge and self-reported confidence with observed clinical performance. *Nurse Education Today* 32(6): 35-39.
- Martin C.T. & Chanda N. (2016) Mental health clinical simulation: therapeutic communication. *Clinical Simulation in Nursing* 12(6): 209-214.
- Maslovitz S., Barkai G., Lessing J.B., Ziv A., Many A. (2004) Recurrent obstetric management mistakes identified by simulation. *American Journal of Obstetrics and Gynecology* 191(6): 128.
- Midik O. & Kartal M. (2010) Simulation based medicine education. *Marmara Medical Journal* 23(3): 389-399 (in Turkish).
- Omer T. (2016) Nursing Students' Perceptions of Satisfaction and Self-Confidence with Clinical Simulation Experience. *Journal of Education and Practice* 7(5): 131-138.
- Rhodes M.L. & Curran C. (2005) Use of the human patient simulator to teach clinical judgment skills in a baccalaureate nursing program. *CIN: Computers, Informatics, Nursing* 23(5): 256-262.
- Rindt A. (2013) Simulation based learning in Australian midwifery curricula: How understanding human factors can enhance quality. *Women and Birth* 26(1): 67.
- Sendir M. & Dogan P. (2015) The use of simulation in nursing education: systematic review. *Florence Nightingale Nursing Journal* 23(1): 49-56 (in Turkish).
- Smith R., Gray J., Raymond J., Catling-Paull C., Homer C. (2012) Simulated learning activities: improving midwifery students' understanding of reflective practice. *Clinical Simulation in Nursing* 8(9): 451-457.
- Terzioğlu F., Kapucu S., Ozdemir L., Boztepe H., Duygulu S., Tuna Z., Akdemir N. (2012) Opinions of nursing students on the method of simulation. *Hacettepe University Journal of Nursing Faculty* 19(1): 16-23 (in Turkish).
- Vermeulen J., Beeckman K., Turcksin R., Winkel L.V., Gucciardo L., Laubanch M., Peersman W., Swinnen E. (2017) The experiences of last-year student midwives with High-Fidelity Perinatal Simulation training: A qualitative descriptive study. *Women and Birth* 30(3):253-261.