

OPINIILE STUDENȚILOR LA ASISTENȚĂ MEDICALĂ PRIVIND EDUCAȚIA BAZATĂ PE TEHNICI DE SIMULARE ȘI IMPACTUL ACESTORA ÎN PRACTICA CLINICĂ

STUDENTS' OPINIONS OF SIMULATION-BASED NURSING EDUCATION AND ITS IMPACT ON CLINICAL PRACTICE

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Abstract:

Purpose: The aim of the study is to determine the opinions of nursing students on simulation techniques.

Materials and Method: The data of the study was collected using an interview form, and the focus group interview method was applied. The study was conducted nursing students who agreed to participate in the study. The data were analyzed using the content analysis method and as a result of the coding process four main themes were created

Findings: Most of the students stated that they used videos, simulations, models, role-play, case and group discussions to improve their skills, knowledge before practicing in the clinical setting. Some of the students stated that they found the training on simulators insufficient.

Results: Students have shown that simulation methods are useful in improving their knowledge and very effective in learning processes, but they find their laboratory training partially inadequate due to the limited use of simulation methods.

Rezumat:

Scop: Scopul studiului este de a determina opiniile studenților care alăptează cu privire la tehnicile de simulare.

Materiale și metodă: Datele studiului au fost colectate folosind un formular de interviu și s-a aplicat metoda focus grupului. Studiul a fost realizat studenți care au acceptat să participe la studiu. Datele au fost analizate folosind metoda de analiză a conținutului și ca rezultat al procesului de codificare au fost create patru teme principale

Constatări: Majoritatea studenților au declarat că au folosit videoclipuri, simulări, modele, jocuri de rol, discuții de caz și de grup pentru a-și îmbunătăți abilitățile, cunoștințele înainte de a practica în cadrul clinic. Unii dintre studenți au declarat că au considerat că instruirea pe simulatoare a fost insuficientă.

Rezultate: tehnici de simulare în cercetare; A arătat că este eficient în învățare și practică clinică, îmbunătățește comunicarea în echipă și le permite studenților să abordeze pacienții cu o abordare holistică.

Key-words: *Nursing student, simulation techniques, clinical practice*

Cuvinte cheie: *Student la asistență medicală, tehnici de simulare, practică clinică*

Introduction

Nursing education is a medical discipline that provides theoretical and practical education simultaneously (Hakverdioglu, 2011). At least two-thirds of the nursing curriculum is based on practical education. Clinical skills are among the key components of nursing education and instruction and aim to provide students with critical-thinking, problem-solving, analyzing, psychomotor, communication and management skills in order to enhance students' self-

confidence, as well as allowing for the observation of professionals who can act as role models (Alinier et al., 2006; Bremner et al., 2006).

The most effective instructional methods to teach clinical practice skills to students include interactive methods that enable students to participate in the learning process in an active way, through case discussions, group work, brainstorming, demonstrations, role play, problem-based learning and simulation (Karaoz,

1997). The simulation technique, which is one of the interactive methods, is effective in terms of improving cognitive and psychomotor skills (Senturk and Karahan, 2018). Simulation is an activity that reflects real-life conditions and a technique that enables students to have a virtual experience without facing any real risk. The simulation technique used in nursing education includes role-play exercises with simulators (real or simulated patients), computer-based role-playing, video, virtual reality, computer-based simulators and interactive patient simulators (Alinier et al., 2006). Simulation models are educational materials that represent a part of the body or organ and they are frequently used to improve practice and psychomotor skills. Models are regularly used in teaching various skills such as peripheral intravenous catheterization, subcutaneous, intradermal and intramuscular applications, inserting a nasogastric tube, bladder catheterization, inserting a colostomy, child birth and internal medication applications (Bradley, 2006).

The skills and practices developed for the education of nursing students are important in putting theoretical knowledge into practice. Clinical settings provide an opportunity for students to use the theoretical knowledge, skills and attitudes they have learned regarding patient care in a practical situation (Cant and Cooper, 2010; Kapucu and Bulut, 2011). Therefore, enhancing students' clinical competences in skill laboratories before they provide care for real patients is important for ensuring patient safety (Cant and Cooper, 2010; Hakverdioglu, 2011; Kapucu and Bulut, 2011). Furthermore, skills laboratories with the necessary technical equipment for simulation training should be established in graduate schools and faculties to enable students to experience patient care before they interact with real patients (Kapucu and Bulut, 2011; Schoening et al., 2006). The skills laboratories should be well designed and have the correct equipment in order to create an efficient learning environment in which skills education principles can be applied (Houghton et al., 2012). Studies which have employed simulator techniques in educating nursing students have shown that the use of simulation techniques in a realistic learning environment improved students' cognitive and psychomotor

skills and boosted their confidence (Gurol et al., 2016; Ricketts, 2011; Tuzer et al., 2016). This study set out to identify the opinions of the nursing students regarding the impact of the simulation techniques applied in the skills laboratory and in clinical practice.

Materials and method

Research Type: This study was designed as a qualitative study based on descriptive analysis.

Population and Sample: The population of this study consisted of 1st, 2nd, 3rd and 4th-year students who were studying in the nursing department of a Vocational School of Health in the 2018-2019 academic year, and the sample consisted of nine 1st, 2nd, 3rd and 4th-year students who agreed to participate in the study. In the literature, the focus group interviews conducted in qualitative research studies included six to 10 people. In addition, when the replies of the participants within the study sample become similar, a study is considered to have reached saturation point and the data collection process is concluded (Erdogan et al., 2014; Yildirim and Simsek, 2011). The inclusion criteria of the study for students included voluntary participation and having had previous education regarding simulation techniques and models.

Data Collection Tools:

The study data were collected using a data collection and interview form that was prepared by the researcher as a result of a literature review (Deniz, 2017; Goris et al., 2014; Gurol et al., 2016; Ricketts, 2011; Tuzer et al., 2016; Uslusoy Cetinkaya, 2018). The data collection form used in the study included questions about the demographic information of the students (10 questions) and the interview form included open-ended questions (five questions) about impact of simulation techniques and models used in skill laboratories on clinical practice. The open-ended questions the students were asked included:

1. Do you think that theoretical and practical education you received for improving your clinical skills is sufficient?
2. What are your opinions about the simulation techniques that are used for developing clinical skills (video,

simulation models, role play, group and case studies)?

3. What are the obstacles and challenges you face in performing nursing activities in clinical settings?
4. What kind of learning environment would you like to have and which instruction models would you prefer to be applied?
5. What might be the advantages and disadvantages of the instruction methods that are used for developing your skills?

Data Collection:

The data of the study were collected with a total of nine nursing students in 1st, 2nd, 3rd and 4th years who used simulation models, performed clinical applications and participated voluntarily in the study between 25 March 2019 and 25 May 2019. The students were separated into four groups according to their class levels. Focus group interviews took place at times when the students assigned to the groups were available. A u-shaped seating arrangement was established to enable participants to see each other, the sessions occurred in a silent and empty meeting room, a sound recorder was used, and a moderator and reporter also attended the interviews. Pseudonyms were given to the students who participated in the study and it was ensured that they were sat according to a seating plan in each meeting. The moderator asked the students the open-ended questions from the form prepared by the researcher, as well as questions from the semi-structured interview form, and the students' answers were written down by the reporter. The interviews were also audio-recorded after the students' written consent was received. The students were also asked to state their opinions in written form in order to express themselves better. The voice recordings and written documents that were obtained as a result of the meetings were combined and the missing data were completed. The interviews were ended when data saturation was reached. The students' answers were put in writing and afterwards the main themes, sub-themes and codes were created in coordination with the other faculty member. The data was coded and classified under specific themes and names were given to the relevant parts of the data.

Ethical Aspects of the Research:

To implement the research study and the data collection, permission number 40195783-101.04/4883 was obtained from School of Health, and permission number 70632468-050.01.04 and decision numbered 2019/76 were obtained from the Non-Invasive Ethical Committee at Selçuk University. This study was conducted in accordance with the Helsinki Declaration's Good Clinical Practices. The written and verbal consent of the participants was obtained, they were informed that a sound recorder would be used, and received guarantees of confidentiality.

Data Analysis:

The quantitative data of the participants were evaluated through statistical analysis using the SPSS 24.0 package program. The written material received from the students, sound recording transcriptions and notes taken by the reporter were compared and missing statements were completed. The information gathered from the data collection form and the interviews was transferred to the computer environment, content analysis was performed, the material was classified and coded, and the main themes were identified.

Limitations of the Study:

During the implementation, it was a challenge to gather the students together due to their different lecture hours, the number of groups included in the study was relatively small, and the findings are based on the opinions of nine students and therefore cannot be generalized.

Findings

The youngest student who participated in the study was 18 years old and the oldest student was 27 years old. The participants consisted of nine students in total including two 1st-year students, three 2nd-year students, two 3rd-year students and two 4th-year students. 66.7% of the students stated that they had chosen the nursing profession willingly and 88.9% stated that they were content with their decision. The findings showed that seven students had a grade average between 2 and 4, and two students had an average between 3 and 4. Four main themes were

identified as a result of the interviews conducted with the students.

These themes are:

1. Students' opinions about the instruction methods used for improving theoretical knowledge and skills and the impact of these techniques on clinical practices.
2. Students' opinions about the efficiency of theoretical and practical education and their applicability in clinical environments.
3. Students' opinions about theoretical education and the challenges regarding practicing in clinical settings.
4. Students' opinions about their preferred education and instruction methods in order for them to feel competent.

Theme I: Students' opinions about the instruction methods used for improving theoretical knowledge and skills and the impact of these methods on the clinical practices

The students participating in the study stated that they mostly used videos, simulation models, role-play exercises and slides, and that they engaged in case and group discussions. Students' opinions on these instruction methods were generally positive. Students stated that the instruction methods were very effective for learning, provided advantages and benefits, prepared them well for the clinic, improved their creative thinking skills, helped them to memorize information, eliminated rote learning, enhanced patient-group-team interaction and enabled them to approach the patients in a holistic way. Two students stated:

- I think that the simulations provided by our instructors in the vocational school, training on models, case discussions and the videos that we watch in lectures on the relevant subjects are effective in terms of preparing us for the clinic... We learn about an illness and nursing planning through the case discussions regarding the patients. I can examine patients holistically... Improving our knowledge and skills with these methods makes me feel more self-confident. (K1, 20 years old, 1st year student)
- The instruction methods make us more prepared for the clinic... They provide us with a new approach and pave the way for creative thinking in the clinic... The group

and case studies show us that teamwork is very beneficial in the clinic... The communication techniques that we use before we perform practice on the models enable us to improve our communication skills in terms of interacting with patients in the clinic. (K3, 22 years old, 2nd-year student)

Theme II: Students' opinions about the efficiency of theoretical and practical education and their applicability in clinical environments

All of the students who participated in our study stated that they found the theoretical education sufficient; five students stated that they found the instruction provided in the laboratory sufficient, and four students stated that they found the education insufficient. Students' described the instruction as insufficient due to the fact that some of the models were outdated and non-responsive, the number of nursing students was high, laboratory conditions were inadequate and there was a lack of instructors. Two students expressed negative opinions concerning the applicability of the practical education to clinical settings.

- From my perspective, the theoretical and practical education that we have before the clinical practice is sufficient but we faced challenges when the models were inadequate... In particular, we had problems with the probe and we couldn't insert it as the model wasn't good enough for practicing with... When we did the vascular access practice on ourselves and on the model, we were able to understand this practice... We have a chance to put the theoretical education into practice in clinical settings. (K2, 18 years old, 1st-year student)
- I think that the theoretical and practical education provided to us is sufficient and prepares us for the clinic... In this way, I was able to learn about approaching patients... We had difficulties implementing the theoretical and practical education provided in the school... because the models provided by the school did not respond to us like the patients... I believe that the use of simulation models has a definite and positive impact on a vocational school, enables us to improve ourselves in a practical sense and is very important. (K3, 22 years old, 2nd-year

student)

- Sometimes I am worried about practicing in the hospital because the clinical practice performed by the nurses and the theoretical knowledge we learn in school are not consistent with each other. (K4, 20 years old, 2nd-year student)
- There is a difference between the education provided by the school and what we learn from the nurses in the hospital... Due to these differences, we face difficulties when we carry out our practice in the clinics. (K9, 27 years old, 4th-year student).

Theme III: Students' opinions about theoretical education and the challenges regarding practicing in clinical settings.

The students participating in our study experienced certain challenges regarding practicing in clinical settings and stated that the theoretical knowledge provided to them was not applied by the nurses who worked in the clinics and that, in this sense, there was an inconsistency between the theory and the practical implementation. Both nurses and patients approached the students in a biased way; they considered them interns and therefore did not allow students to properly engage in practice, causing difficulties. The participants also stated that the hospital where the clinic was located was too small, the number of the cases was inadequate, and they faced challenges due to a lack of materials. Students also stated that they could not practice properly since the number of cases per student was very low due to the high number of students, while the number of patients was very low:

- The patients in the clinic tell us that we are not nurses, they are biased against us and they do not let us practice... There are so many questions in our care plans and patients get bored when we ask these questions and do not want to talk to us... The number of patients is very low yet the number of students is very high, therefore patients do not want to interact with students. (K3, 22 years old, 2nd-year student)
- Patients and clinical nurses are biased against students... This is an obstacle to our practicing in a clinical setting... The hospital is small... There are only a few cases... The

number of patients is inadequate... It's very common for the patients to be transferred... One department has 10-15 students... The number of instructors is inadequate... There are limitations caused by the fact that the hospital is small... Due to this situation, we practice less. (K6, 22 years old, 3rd-year student)

- There is a lack of materials and this creates problems for us when we want to provide care or treatment to the patients in the clinics. (K9, 27 years old, 4th-year student).

Theme IV: Students' opinions about the preferred education and instruction methods in order for them to feel competent

The students who participated in the study indicated that there was a need for simulation models for developing each skill which are new, of good quality and could respond like a human being; they would have preferred to practice more frequently on more patients in clinics with the instructor; they stated that the number of instructors should be increased; laboratories should be larger and well-equipped; the hospital where they did their clinical practice should be more inclusive; they should practice more frequently on simulation models or on themselves; role-play exercises, group and case discussions, mind maps, visually-rich slides and the videos supporting the slides should be used more frequently; and finally, the students stated that they wanted to practice on cadavers.

- I wish I could practice on models more to improve my hand skills, but it is difficult as the models in the school are not good enough to practice on... I would like to have a more inclusive laboratory and the hospital environment for my clinical practice, to practice in a training and research hospital, to practice with models that can respond like human beings, to have more instructors, to have instructors who can look after each student individually, and to have more functioning models... The number of theoretical courses could be reduced and the practical implementations could be increased... Practicing on models by seeing what we do is more effective in terms of learning. (K2, 18 years old, 1st-year student)
- I believe that videos and simulation models

are more effective in learning...In our lectures, we did role-play exercises and had case discussions; we watched videos and slides, and practiced on simulation models... To make it better, I would like to practice more on advanced models, practice more frequently with fewer students, and perform more case studies... We could also have hands-on training on a cadaver... I can't forget what I have seen very easily... I wish I could have an internship in a more advanced hospital. (K5, 21 years old, 2nd-year student)

Discussion

Nursing is a profession that requires cognitive and psychomotor skills and specific behaviors and attitudes. Therefore, one of the most effective methods in nursing education is simulation techniques that enable students to participate actively and practice by seeing. In nursing education, the activities performed and the skills developed in pre-clinical and clinical settings play an important role in transferring theoretical knowledge into the clinical environment, and nursing students are required to improve their clinical competences in laboratory settings (Cant and Cooper, 2010; Dunn and Hansford, 1997; Kapucu and Bulut, 2011; Wellard et al., 1995). Previous studies conducted with simulation models showed that the use of advanced simulations in student training had positive impacts on problem-solving and critical-thinking skills (Foronda et al., 2014; Mompoin-Williams et al., 2014; Park et al., 2015; Wang et al., 2013). In contrast, the literature also includes one research article that found out that simulation techniques did not have any impact on students' problem-solving and critical-thinking skills (Kim and Choi, 2015).

Simulation-based techniques are used in nursing education to prepare students for clinical settings, enable student nurses to be self-confident and competent in clinical skills, and to increase patients' trust in student nurses (Senturk and Karahan, 2018; Tosun et al., 2008). Specific techniques, such as demonstration, simulation and role-play, should be used for enhancing students' self-confidence and skills in the pre-clinical period (Terzioglu et al., 2012). The findings of this study revealed that students

engaged in different techniques, such as role-play exercises, simulation, case study, and watching videos, and they learned about the practices which they later performed by seeing them. There are a number of research studies in the literature on the use of simulation in nursing education (Baptista et al., 2016; Fawaz and Hamdan- Mansour, 2016; Karadag et al., 2015; Karahan et al., 2019; Sari and Erdem, 2017; Sarmasoglu et al., 2016; Yilmaz Taskin et al., 2018). Previous studies have reported that computer-based simulation applications had a positive impact on students' self-efficacy, self-confidence, clinical decision-making, communication, and psychomotor and instructional skills; improved their critical thinking and motivation; enabled them to be accepted by nurses and patients; provided benefits for the patients; and increased their level of satisfaction (Gurol et al., 2016; Karahan et al., 2019; Sarmasoglu et al., 2016; Wagner et al., 2009; Yilmaz Taskin et al., 2018). Similar to the literature, the students who participated in our study also considered simulation-based practices as useful prior to clinical applications, they stated that it reduced the stress level in the clinic, and enabled students to overcome any problems in terms of their confidence by improving their skills.

The findings of this study revealed that the pre-clinical preparations of student nurses were not sufficient, they had a lack of self-confidence while implementing clinical skills, patients and nurses did not trust in students and did not allow them to perform invasive applications, and there were differences between the theoretical knowledge provided in the school and the clinical applications. In the previous studies, most of the students stated that their clinical and laboratory training was insufficient, that they were not able to sufficiently apply their theoretical knowledge in clinical settings, did not consider themselves competent in terms of their clinical skills, felt incompetent when they carried out their clinical practice, and that this situation led to problems between students and patients and nurses, and that there was an inconsistency between the theoretical knowledge provided by the school and its clinical applications (Alpar et al., 2008; Dunn and Hansford, 1997; Kapucu and Bulut, 2011; Senturk and Karahan, 2018;

Terzioglu et al., 2012). Related problems occurring during the nursing education also included: lack of practice due to the high number of students, disregard of students (Akyuz et al., 2007; Sercekus and Baskale, 2016), lack of clinical materials, lack of space for clinical practice and difference between theoretical knowledge and practice (Deniz, 2017), and suffering from stress due to lack of knowledge (Chan et al., 2009). These findings show similarities with the findings of our study.

In the current study, the students stated that they were anxious about practicing on patients, and they indicated that they wanted to work on simulation models which were of good quality and responded like a human being in order to overcome their clinical incompetence. Simulation-based techniques could then play a role in preparing student nurses for clinical practice, enhance their decision-making and practical skills and boost their self-confidence. Furthermore, the students noted that practicing alongside their instructors had a positive impact. Previous studies have also underlined that receiving positive feedback, information and guidance from instructors about the applications benefits students' self-development (Karadag et al., 2015; Sercekus and Baskale, 2016). The findings of this study are similar to the literature.

Conclusion

The evaluation of students' opinions on simulation and other instruction methods showed that the students found their theoretical knowledge insufficient and that they found their laboratory training 'partly' insufficient due to the outdated models and limited use of these models. In addition, they used a variety of learning methods, such as watching videos, practicing on simulation models, case and group discussions, slides, hand cards, mind maps, and role-play exercises. The students also stated that these methods were beneficial in developing their knowledge, were very effective in terms of their learning processes, enhanced their self-development, improved their confidence and skills, and enabled them to approach patients in a holistic way. The study revealed that students felt anxious during clinical practice, did not engage in clinical practice very frequently, were frustrated by the responses of nurses and patients

and performed better when their self-confidence increased.

Suggestions

In line with the findings of the study, it can be asserted that the number of instructors in vocational schools and faculties should be increased, laboratories should be well-equipped and instructors should provide one-to-one learning opportunities in laboratories and clinics. Students should communicate with clinical and supervisor nurses about their expectations, they should be trained by instructors who can function as role models, and instructors should support, encourage and guide students during their internships. Providing support to facilitate the establishment of laboratories that reflect the clinical environment will also enhance students' knowledge and skills.

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AYK, SŞ, BM and PTT developed the concept. AYK, SŞ, BM and PTT designed the study. AYK, BM and PTT were involved in data collection or processing. AYK and SŞ analyzed or interpreted the findings. AYK and SŞ critically reviewed the manuscript. The authors read and approved the final manuscript.