



Clinical education

Nursing students' perceptions towards being taught the fundamentals of care by clinical nurses within a simulated learning environment: A qualitative study

Daniela Lillekroken

Department of Nursing and Health Promotion, Oslo Metropolitan University, PB 4 St. Olavs plass, N-0130, Oslo, Norway

ARTICLE INFO

Keywords:

Basic nursing care
Clinical nurses
Nursing students
Simulated learning environment

ABSTRACT

Research in nursing education demonstrates that the fundamentals of care are paid less attention in this field resulting in negative consequences for students' learning outcomes. The aim of this qualitative study was to explore nursing students' perceptions towards being taught the fundamentals of care by clinical nurses within a simulated learning environment. The study has a qualitative explorative design. Data was collected through participant observation and focus group interviews and analysed using qualitative content analysis. The analysis revealed two main categories indicating how the students gained knowledge in the research setting: 'Getting the best of both worlds', and 'Having it in many ways'. The findings are discussed against Vygotsky's theory of cognitive development suggesting that the students were content with being taught the fundamentals of care by clinical nurses within an simulated learning environment.

1. Introduction and background

In Norway, nursing education is completed over a period of three years, which includes theoretical knowledge and practical training. When they graduate, students achieve a Bachelor's grade of Nursing. Clinical training constitutes 50% of the undergraduate curriculum in nursing and is carried out via an interplay between university faculties and the clinical field (Norwegian Ministry of Education and Research, 2012). During their first clinical period, nursing students are required to execute techniques and procedures of the fundamentals of care (FoC) within the context of long-term care. To enhance their abilities, skills and critical thinking, nursing students are given the chance to practice and understand the processes involved in the FoC within a simulated learning environment (SLE) before applying them to real-world situations.

The FoC, as a concept, has been labelled and operationalised in different ways. While Nightingale (1860) regarded the FoC as 'essential elements' in providing basic nursing care, Henderson (1964) referred to them as 'human needs'. Kitson et al. (2010) defined the concept as 'fundamentals' that relate to 14 basic needs, including: respiration, feeding, elimination, personal hygiene and dressing, mobility, rest and sleep, temperature control, care for communication and education, expressing sexuality, safety, prevention and medication, dignity, privacy, respecting choices and comforting, and pain management. During their first year of nursing education, students gain theoretical

knowledge of both the physiological (e.g. respiration, feeding, circulation, elimination, mobility, etc) and psychosocial needs (e.g. safety, dignity, privacy, etc), then they practise providing and supporting these basic needs within an SLE.

Simulation has been increasingly used in nursing education to enhance the integration of theoretical knowledge into practice (Adib-Hajbaghery and Sharifi, 2017). However, although Benner et al. (2009) stressed the importance of enabling nursing students to integrate theoretical knowledge in their clinical practice, a literature review conducted by Crookes et al. (2013) revealed that it is nevertheless challenging to connect nursing theory with practice. These challenges also apply to the integration of theoretical knowledge about the FoC into practice, thus resulting in an undervaluation of their impact (Schneider and Ruth-Sahd, 2015). One explanation for this may be that some students believe the FoC are not part of the nurse's duties (Allan and Smith, 2009), and they will therefore not prioritise the knowledge needed to improve their skills in this area. This has resulted in a devaluation of the importance of adequate clinical preparation to provide quality FoC to patients (Ausserhofer et al., 2014). Another explanation may be the lack of evidence regarding research that provides a deeper understanding and expands the knowledge base, with a focus on improving nursing students' FoC learning outcomes (Zwakhalen et al., 2018). As a consequence, the FoC are inadequately or incompletely provided, sometimes omitted, or, even more, harmfully, having a negative impact on patient outcomes and safety (El-Soussi and Asfour,

E-mail address: dali@oslomet.no.

<https://doi.org/10.1016/j.nepr.2019.03.010>

Received 3 July 2018; Received in revised form 5 February 2019; Accepted 9 March 2019

1471-5953/© 2019 Elsevier Ltd. All rights reserved.

2017; Lake et al., 2017). In addition, whilst most of the research on nursing education emphasises the simulation of acute-care clinical experiences, little attention has been paid to FoC learning activities; therefore, there is a lack of evidential backing for FoC education (Alderman et al., 2018; Feo et al., 2018).

According to Zwakhalen et al. (2018), although the FoC are the most frequently provided healthcare services, they are the least evidence based. The idea that the FoC are neither important nor complicated has influenced nursing students' perceptions and understands, resulting in negative consequences for their learning outcomes (Macmillan, 2016). Huisman – de Waal et al. (2018) stated that the FoC seem almost invisible in nursing education, especially at the undergraduate level, and newly graduated nurses often lack the requisite knowledge and skills to adequately deliver the FoC in clinical practice (Voldbjerg et al., 2018). Therefore, the delivery of the FoC has recently come under increased international scrutiny, with concerns that nurses and nursing students are unable to recognise the FoC needs of patients and appropriately identify whose responsibility it is to address those needs (Jangland et al., 2018). Given the limited knowledge regarding how to improve the students' abilities, skills and critical thinking regarding FoC, as well as recent calls for innovation in this area (Jackson and Kozłowska, 2018) new ideas concerning how FoC can be taught have fertile ground in which to take root. To the best of the researcher's knowledge, there have been no previous studies aimed at exploring nursing students' perceptions towards being taught the FoC by clinical nurses within an SLE. Therefore, Oslo Metropolitan University invited nurses from a long-term care setting to teach and demonstrate the FoC to undergraduate nursing students within an SLE. This paper presents the findings from a qualitative study conducted in this setting.

2. Theoretical framework

Sociocultural perspectives, including the roles that culture, interaction and collaboration play in the quality of nursing students' learning comprise the main approach to education at Oslo Metropolitan University; therefore, Vygotsky's theory of cognitive development (1978) was chosen as the theoretical basis for this study. According to Vygotsky (1978), three themes are often identified in sociocultural learning: (1) human development and learning originate in social, historical and cultural interactions; (2) the use of psychological tools, particularly language, mediate the development of higher mental functions; and (3) learning occurs within the zone of proximal development (ZPD). These themes are closely interrelated and non-hierarchical. The findings from this study are discussed in light of these themes.

3. Method

This study has an explorative design with a qualitative approach, using a 32-item checklist of consolidated criteria for reporting qualitative research (COREQ), as described by Tong et al. (2007). The aim of this study was to explore the nursing students' perceptions towards being taught the FoC by clinical nurses within an SLE, therefore, to satisfy the aim of the study, the following research question was formulated: What are nursing students' perceptions towards being taught the FoC by clinical nurses within an SLE?

3.1. Setting and participants

The research setting was the SLE at the Department of Nursing and Health Promotion at the Oslo Metropolitan University. The SLE consists of seven large specially equipped rooms, functioning as training facilities. Each room is equipped with six hospital bed stations, smart blackboards, data, TV screens and video cameras for performance recording and review during simulation and debriefing period.

To identify student participants for this study, convenience

sampling was conducted, resulting in a sample of 150 students. According to Polit and Beck (2017), convenience sampling is chosen when the primary data source does not have additional requirements. Regarding the demographics of this sample, most of the participants were female, as nursing is a female-dominated profession (Ross, 2017). Their ages varied from 20 to 38 years. Some of participants had work experience in health care or other professions.

During their first year of nursing education, students perform different simulation activities to gain the requisite FoC competencies for their first clinical period within a long-term care setting. The focus of the clinical period is to meet the FoC needs of residents in a nursing home; therefore, the nurse participants were identified via purposeful sampling. Purposeful sampling involves identifying and selecting individuals that are especially knowledgeable about or experienced with a phenomenon of interest (Polit and Beck, 2017). The only inclusion criterion considered when recruiting clinical nurses was that the participants had clinical experience in providing the FoC within a long-term care setting. The sample included five nurses who met the criterion and held a position requiring an 80% or full-time commitment. The nurses were all women, with ages varying from 25 to 59 years, and work experience ranging from 3 to 38 years. Their academic qualifications spanned from a bachelor's degree to a master's degree in nursing. Two of the nurses also had preceptorship experience.

3.2. Recruitment and data collection

All participants were recruited by the researcher. At the beginning of the Fall semester, the students were provided with verbal and written information about the study during a face-to-face first meeting. The nurses were contacted by email and telephone. Prior to the start of the study, the nurses were invited to visit the SLE at the university, to familiarise themselves with the physical environment. They were also briefed on the FoC simulation themes, expected learning outcomes from each theme, current syllabus and teaching strategies. The student/nurse ratio was 15/1.

The data was collected over a period of seven weeks, from mid-August to early October 2017. The data collection methods included participant observation and focus group interviews (six with students and one with nurses).

In total, seven different themes (one pr. uke) were taught and demonstrated, including the provision of personal hygiene, supporting nutritional needs, elimination, dressing, mobility/activity, measuring vital signs and administering medication. Case scenarios related to each theme were designed to help the students develop the FoC skills in an integrated manner. The students trained their skills with each other, by acting as 'patients' or 'nurses', and on torso manikins. Each simulation session began with informing the students about the purpose of the simulation and ended with a debriefing that focused on identifying the *who, what, when, why, and how* of the simulation.

3.2.1. Participant observation

A total of 105 h of participant observation was completed, each observation session lasted 3 h. Each week, a new theme was introduced by the nurse, which was subsequently demonstrated and then performed by the students either individually or in small groups of three. The observations were focused on the interactions between the nurse and the students during the simulation activities, including their communication with each other, and how the nurses provided information about and demonstrated each procedure. It was also important to observe which learning activities were performed independently or together with the nurse and/or other students, if and how the students used healthcare data programme (VAR), how the nurses provided feedback and guided the debriefing phase, and how the students responded to the nurse's feedback and debriefing. Field notes were written during the simulation sessions.

By being a participant observer, the researcher had the opportunity

to be present and have informal conversations with the participants about the *who*, *what*, *when*, *why*, and *how* of a particular moment during each simulation, hence providing information about the participants and their environment (Polit and Beck, 2017).

3.2.2. Focus group interviews

In addition to participant observation, the researcher conducted and moderated seven focus group interviews, six with the students (one with six students, two with seven students and three with eight students), and one with all five nurses. Although all 150 students were invited to participate in the focus groups, only 44 agreed to participate. The focus group interviews were conducted at the end of the observation period. The interviews lasted for an average of 45 min, were digitally recorded, and transcribed verbatim by the researcher. The interviews were guided by a semi-structured interview guide with open-ended questions such as, ‘What has it been like to be taught the FoC by clinical nurses?’ Other themes for discussions included the students’ perceptions regarding the advantages and disadvantages of being taught the FoC by clinical nurses within an SLE, their expectations towards the nurses, and how they assessed their learning outcomes after each simulation session. During the interviews, some follow-up questions were asked to deepen the answers or to fuel the discussion, which helped the participants to describe differing or similar views about the topic of interest (Polit and Beck, 2017).

3.3. Data analysis

The text data is 193 pages in total (32 pages of field notes and 161 pages of interview transcriptions). The text was analysed using a three-step qualitative content analysis (Elo and Kyngäs, 2008). There are three approaches to qualitative content analysis: conventional, directed or summative (Hsieh and Shannon, 2005). Since there is no previous research on the topic under study, the conventional content approach was chosen to guide data analyses. The advantage of the conventional approach is that the researcher can gain direct information from study participants without imposing preconceived categories or theoretical perspectives, instead allowing the categories and subcategories to be informed by the data (Hsieh and Shannon, 2005).

The first step (preparation) started with several readings of the whole text to obtain a sense of the content. In this step, the meaning units of analysis, which informed the research question, were purposely selected and highlighted. The second step (organising) included open coding, creating categories and data abstraction. During open coding, the researcher wrote keynotes (codes) on the right margin of the text. The codes were collected and grouped under higher-level headings, called ‘categories’, then, through interpretation, the related categories were synthesised into even broader categories. In the last stage, abstraction, each category was labelled using words extracted directly from the text. At the end of this process, several subcategories were identified and sorted into groups based on similarity in meaning. The analysis was considered complete when theoretical saturation was reached (Saunders et al., 2018). Two higher-degree categories were developed and reported as findings. A sample of categories and

subcategories from the content analysis is shown in Table 1:

In Findings-section, each category will be presented and illustrated with quotes from field notes (FN) and from focus group interviews (FG). During the focus group interviews, the students referred to the clinical nurses as ‘nurses’ and the researcher as ‘teacher’. To increase the readability of the text and to delineate who the students were referring to, these two definitions were made consistent within the text.

3.4. Ethics

Ethical approval to conduct this study was obtained from the Department of Nursing and Health Promotion at the Oslo Metropolitan University. The study has also been registered with the Norwegian Centre for Research Data (NSD, project no. 54974). Research was conducted according to principles of the Declaration of Helsinki (WMA, 2013), including: informed consent, consequences and confidentiality. All participants received verbal and written information about the study. Written informed consent was obtained from all the participants. The student participants did not receive any benefits; however, the nurses were paid for their time spent teaching the students within the SLE.

All the participants were assured that if they chose to leave the study at any time, there would not be any negative consequences on their education or employment at the university. Nevertheless, the researcher was aware of the students’ vulnerable positions, especially during the observation stage, as their role as students may have discourage them from withdrawing. Therefore, before each observation session, the students were reminded that they would be observed, hence giving them additional opportunities to assent to or withdraw from the study. None of the students nor nurses suggested any discomfort during observation, and none chose to withdraw.

3.5. Rigor

Five criteria were established to ensure the trustworthiness of the qualitative data, including: credibility, transferability, dependability, confirmability, and reflexivity (Noble and Smith, 2015). According to Elo et al. (2014), trustworthiness is supported by the researcher’s ability to report the content analysis process accurately at all three steps, which was performed in the present study.

Prior to the onset of the study, the credibility of the content analysis was ensured by selecting the most suitable data collection methods and sample to answer the research question. The participant observation offered sufficient time to gain an in-depth understanding of the culture of teaching and learning in the research setting, while the focus group interviews offered an understanding of nursing students’ perceptions towards being taught the FoC by nurses within an SLE. To support transferability, the researcher described the research context, the participants, the analysis of the data, and the findings. Dependability was supported by providing a thorough description of the research process, hence enabling other researchers to conduct similar studies. Confirmability was reinforced by offering quotes from the participants when presenting the findings. The researcher strived to use data that

Table 1

Nursing students’ perceptions towards being taught the FoC by clinical nurses within an SLE.

| Subcategories | Categories |
|---|-----------------------------------|
| ‘We were lucky to have two experts at the same time to teach us ‘why’ and ‘how’ ...’ ‘The teachers provided us with theoretical knowledge, while the nurses provided their expertise from practice’ ‘The nurses have experience’ ‘I feel confident when I have somebody to ask’ ‘There are many ways to gain knowledge’ | ‘Getting the best of both worlds’ |
| ‘Learning by doing’ ‘Learning by watching’ ‘I want to learn how to do something else and develop new knowledge’ | ‘Having it in many ways’ |

accurately represents the information provided by participants, thereby indicating that the interpretations of the data were not invented or based on preconceived notions.

According to Berger (2015), the researcher's position and reflexivity in qualitative research is of paramount importance at all stages of the research process; therefore, the researcher's professional background as a nurse educator with both clinical and research experience in long-term care settings could affect the processes of data collection and analysis. The researcher, who has knowledge of the syllabus and the expected learning outcomes, is familiar with the 'language' of the research setting and could therefore address certain topics or follow-up questions during the focus group interviews. This might have influenced both the amount and quality of the data, in a positive way (i.e. enriching the data); however, there is also a risk that researchers may take similarities between participants for granted and thus, overlook certain aspects of each participant's experiences, thereby impeding the discovery and construction of new knowledge (Enosh and Ben-Ari, 2016). To avoid this, the researcher maintained a constant awareness of how preconceived notions may affect the study.

4. Findings

Two main categories emerged in the data analysis: (i) 'Getting the best of both worlds' and (ii) 'Having it in many ways', reflecting the students' perceptions towards being taught the FoC by clinical nurses in an SLE. Two statements made by the students were selected as representatives for the categories to which they belong.

4.1. 'Getting the best of both worlds'

This category reflects the students' perceptions on the advantages of having two educators during the simulation sessions. The students defined 'both worlds' as having two different perspectives through which they could gain knowledge; the theoretical perspective gained from teachers during lectures or through reading the syllabus, and the practical perspective of nurses, by practising within an SLE. The majority expressed that 'practice makes perfect' and seemed to embrace the idea of having a clinical nurse to teach them FoC skills. They felt that they had been given an opportunity to strengthen their skills by reflecting on theory regarding the FoC and/or by simulating different cases/situations. One student expressed that she felt lucky to have a nurse and a teacher at the same time:

They completed each other. I felt that I got the best of two worlds, as the nurse keeps up-to-date on the newest practical knowledge and the teacher is best at theory. (Student 1, FG 3)

Another student noted the advantages very clearly:

It seemed complicated to apply all those theories from lectures and from VAR into practice. However, when the teacher explained and the nurse demonstrated, I felt that the theory fell into place ... (Student 7, FG 4)

Most of the students were aware of the nurses' clinical experience, hence perceiving them as 'experts'. The students agreed that the nurses' work experience and practical knowledge facilitated the development of their own skills. They also indicated that the nurses' expertise legitimised the practices being demonstrated, as expressed by one student:

The nurses' work experience influences the manner in which they demonstrate. They are doing these procedures many times every day ... I learned a lot just seeing how she washed her hands before she approached the 'patient'. (Student 4, FG 2)

Some of the students were pleased to have sufficient time with the nurse and/or the teacher, as this gave them confidence and enhanced their own reflections on how to provide quality FoC. They also indicated that debriefing was important for their learning and expressed a desire to be evaluated while performing the different procedures.

Receiving instant feedback from the nurses and/or the teacher helped them adjust their provision of care, as exemplified in the following field note:

One student struggled with giving and taking the bed pan to/from another student playing the patient role. The student asked for help, and the nurse came and showed the student some tricks to ease the placement of the bedpan under the patient. The student seemed to be satisfied with the nurse's guidance and performed as she was been told. The nurse watched the student's performance, then, said: 'Now you get it! You only need to train a few times to improve your skill.' (FN, page 21)

4.2. 'Having it in many ways'

This category reflects the students' perceptions towards the nurses' different methods of knowledge provision. Many students stated that they preferred to have a dialogue during the simulation sessions and to ask questions. While some of the students preferred to 'learn by doing', many preferred to gain knowledge through 'learning by watching'. They wanted to observe how the nurse performed the procedure, then performing it together with others, and eventually acting independently, as expressed by one student:

I need to see first how the nurse performed the procedure before I would do it. I have to learn to do it properly, as we will perform these procedures on real patients. (Student 2, FG 5)

Most of the students read the syllabus in advance and came prepared at the simulation session as this would facilitate their learning, their clinical performance, and their development of their clinical skills. They noted that the theoretical background gained from their preparations helped them reflect on how theory could be linked to practice, as well as form arguments and explanations about why and how they performed the FoC, as seen in the following quote:

I think that it is easier to understand how to apply theory if you read about it in advance. When we worked with the case involving the patient who has suffered a stroke, the nurse explained how to put on and take off the shirt when the patient was immobile and could not move one of his arms. I remembered what I read: start with the 'sick' arm. The nurse encouraged me and said: 'Try it and you will understand why!'. (Student 6, FG 4)

Many of the students, especially those with previous work experience in healthcare, were satisfied with the nurses' demonstrations of how they could perform the same procedure on the same patient in different ways. The students stated that they expected to learn something new from the nurses, in addition to the knowledge they gained from lectures or by reading the syllabus. This idea is mentioned in the following dialogue between two students during the last focus group interview:

I have some work experience from a nursing home, and I usually perform some of these procedures on a daily basis. It was invigorating to learn something new and different than I already knew ... I understand now the importance of providing the FoC adequately and how the theoretical knowledge helps me develop my skills better. (Student 5, FG 6)

I agree ... we can see, by observing how the nurses grab the towel, that they have much experience ... There are many ways to provide the FoC, but now I have learned how to reflect on which way is best for that particular patient, at that moment. (Student 2, FG 6)

Although learning is a process over which each student has individual responsibility, some novice students were motivated to learn by cooperating with other students who had work experience. They felt that by assessing each other's performances, they could increase their confidence and gain knowledge, as described by one student:

I don't have any work experience. By attending the lectures, reading in

advance about the procedures and training our skills on each other, we can gain knowledge in many ways. The knowledge will eventually settle if I train and have someone beside me to ask me why and how, and to support me regardless. I have my fellow students in addition to the nurse and the teacher. (Student 3, FG 1)

5. Discussion

The aim of this study was to explore nursing students' perceptions towards being taught the FoC by clinical nurses within an SLE. The findings indicate that the students benefited from having clinical nurses teach them the FoC. The students believe that they got the best of both worlds and gained knowledge through many methods, as they felt that nursing educators contribute with theoretical knowledge while clinical nurses provide practical knowledge. This emphasises the need for clinical nurses and nursing educators to collaborate in providing quality learning and teaching the FoC to improve the students' learning outcomes.

Given the lack of research exploring the topic under study, the findings presented in this paper are barely supported by previous studies, nor can they be discussed against their similarities or differences with previous findings. Therefore, the discussion of these findings is grounded in [Vygotsky's \(1978\)](#) theory of cognitive development. This theory is based on the student's ability to learn how to use socially relevant tools (i.e. computers, digital devices and medical instruments) and culturally based signs (e.g. professional language) through interactions with other students or teachers (i.e. clinical nurses or nursing educators) who socialise the students into their culture (i.e. the nursing and healthcare culture). Within the SLE, which consists of specially equipped practice rooms, nursing students train to use medical instruments or digital devices as well as develop their professional nursing language through dialog. The findings revealed that this simulation programme gave the students the opportunity to articulate their theoretical and practical knowledge. In addition, by asking questions or getting feedback, they could construct their knowledge, or advance their level of knowledge.

For most of the students, the opportunity to train their skills alongside their peers was important for their learning. According to [Vygotsky \(1978\)](#), any task that students are able to complete by collaborating today, they will be able to do independently tomorrow. As revealed by the findings, although many students adopted different learning strategies (i.e. 'learning by doing' or 'learning by watching'), most of them appreciated the option of being coached or guided through the simulations. When a student discovered an idea, behaviour or attitude during this process, as was illustrated in an aforementioned field note, the student internalised that experience and made it a part of her own mental functioning. This phenomenon reflects [Vygotsky's \(1978\)](#) explanation for the process of internalisation, which facilitates learning. In the present study, internalisation helped students with previous work experience to actively process their experiences during the simulation sessions, thereby, helping them modify 'old' knowledge based on past experiences, integrate it into their own ways of thinking and further develop a new and higher level of knowledge. This mental function cannot be absorbed or transmitted verbally from nurses to students but must be actively constructed by the students on their own, as a result of their collaborations with each other and/or with clinical nurses. According to [Vygotsky \(1978\)](#), this collaboration facilitates learning.

Internalisation also supports the student's ZPD, within which there are three aspects that may influence functional pedagogy: the use of whole, authentic activities; the need for social interactions; and the process of individual change ([Vygotsky, 1978](#)).

The use of whole, authentic activities refers to students applying theoretical knowledge and skills to real-world tasks within a meaningful cultural context. Here, relevant learning activities or simulations

of practical cases/situations may establish an environment in which students can embed their ZPD. Different cases/situations have been designed to prompt students to use their theoretical knowledge to develop specific skills, which will help them deliver the FoC in an integrated manner. However, practical knowledge is constructed via dialog between the students, clinical nurses and nursing educators, and not limited to the perspectives of a single group or individual.

The need for social interaction in learning refers to specific collaborative activities which facilitate the linking of theory to practice, leading to an interaction between students, nursing educators and/or nurse preceptors (who have more practical experience). Students in the present study expected to learn something new and/or different, as they acknowledged that the clinical nurses were 'experts' in providing the FoC.

The process of individual change refers to a student's ability to engage in ongoing transformation, which is a result of social interaction that stimulates cognitive development. This was reflected in the observation that many students asked or were asked about the *how* and *why* of the procedures performed, hence demonstrating that they were stimulated to refine their knowledge and assign meaning and significance to their learning activities.

5.1. Limitations of the study

The study has some limitations which are important to acknowledge. The first limitation concerns context and sample. The study was carried out at one university, which has resulted in highly localised and context-specific findings. Furthermore, although the student sample was robust, the number of clinical nurses was small; therefore, the findings are limited to the participants' personal perceptions, which can impact their generalisability.

The second limitation concerns the possibility of conducting member checks to improve the credibility of the data. The researcher moderated the focus group interviews, wrote the field notes and transcribed the interviews alone. At the end of the simulation programme, when the students began their clinical period and the clinical nurses returned to their places of work, it was impossible to gather the same sample of students and nurses to validate their statements. However, as each focus group interview conducted with the students had only 6–8 participants, the students were given the necessary time to reflect on and express their experiences. During the interviews, the students confirmed and reinforced each other's perceptions, and affirmed that there was nothing more to add, suggesting that they gave detailed answers.

Finally, the third limitation is that neither the content of the learning activities and the simulations, nor the impact of the clinical nurses' teaching on the students' learning outcomes were primary concerns for discussion; hence, the knowledge gained from this study is limited to the students' perceptions of being taught the FoC by clinical nurses within an SLE.

6. Conclusion

This study reveals that nursing students' achievement of FoC learning outcomes is dependent on the nature of support they receive from clinical nurses and/or from nursing educators. The students reported that when they received help from others who they perceived as more knowledgeable, this supported their ability to link theoretical knowledge with clinical practice during the simulation sessions. These findings demonstrate how nursing students learn and who they are learning from. Clinical nurses have much to offer, both in clinical settings and within an SLE; therefore, nursing educators and clinical nurses should cooperate closer, as they help students link theory to practice and support them in their achievement of FoC learning outcomes.

Disclosure statement

The Author declares no conflict of interest.

Ethical approval

This research project has been approved by the Norwegian Centre for Research Data (NSD, project no. 54974) and the Department of Nursing and Health Promotion at Oslo Metropolitan University, Norway.

Funding sources

The research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

Acknowledgements

The author extends her thanks to all students and clinical nurses who participated in this research and the leadership at the Department of Nursing and Health Promotion at Oslo Metropolitan University for given their approval to conduct this research.

Appendix A. Supplementary data

Supplementary data to this article can be found online at <https://doi.org/10.1016/j.nepr.2019.03.010>.

References

- Adib-Hajbaghery, M., Sharifi, N., 2017. Effect of simulation training on the development of nurses and nursing students' critical thinking: a systematic literature review. *Nurse Educ. Today* 50, 17–24. <https://doi.org/10.1016/j.nepr.2016.12.011>.
- Alderman, J., Kastelein, C., Feo, R., Frensham, L., Salamon, Y., Kitson, A., 2018. Prioritizing the fundamentals of care within the prelicensure nursing curriculum. *J. Nurs. Educ.* 57, 498–501. <https://doi.org/10.3928/01484834-20180720-09>.
- Allan, H.T., Smith, P.A., 2009. How student nurses' supernumerary status affects the way they think about nursing. *Nurs. Times* 105, 10–13.
- Ausserhofer, D., Zander, B., Busse, R., Schubert, M., De Geest, S., Rafferty, A.M., Schwendimann, R., 2014. Prevalence, patterns and predictors of nursing care left undone in European hospitals: results from the multicountry cross-sectional RN4CAST study. *BMJ Qual. Saf.* 23, 126–135. <https://doi.org/10.1136/bmjqs-2013-002318>.
- Benner, P., Sutphen, M., Leonard, V., Day, L., 2009. *Educating Nurses: a Call for Radical Transformation*. Jossey Bass Ltd, San Francisco.
- Berger, R., 2015. Now I see it, now I don't: researcher's position and reflexivity in qualitative research. *Qual. Res.* 15, 219–234. <https://doi.org/10.1177/1468794112468475>.
- Crookes, K., Crookes, P.A., Walsh, K., 2013. Meaningful and engaging teaching techniques for student nurses: a literature review. *Nurse Educ. Pract.* 13, 239–243. <https://doi.org/10.1016/j.nepr.2013.04.008>.
- El-Soussi, A.H., Asfour, H.I., 2017. A return to the basics; nurses' practices and knowledge about interventional patient hygiene in critical care units. *Intensive Crit. Care Nurs.* 40, 11–17. <https://doi.org/10.1016/j.iccn.2016.10.002>.
- Elo, S., Kyngäs, H., 2008. The qualitative content analysis process. *J. Adv. Nurs.* 62, 107–115. <https://doi.org/10.1111/j.1365-2648.2007.04569.x>.
- Elo, S., Kääriäinen, M., Kanste, O., Pölkki, T., Utriainen, K., Kyngäs, H., 2014. Qualitative content analysis. A focus on trustworthiness. *Sage Open* 4, 1–10. <https://doi.org/10.1177/2158244014522633>.
- Enosh, G., Ben-Ari, A., 2016. Reflexivity: the creation of liminal spaces - researchers, participants, and research encounters. *Qual. Health Res.* 26, 578–584. <https://doi.org/10.1177/1049732315587878>.
- Feo, R., Donnelly, F., Frensham, L., Conroy, T., Kitson, A., 2018. Embedding fundamental care in the pre-registration nursing curriculum: results from a pilot study. *Nurse Educ. Pract.* 31, 20–28. <https://doi.org/10.1016/j.nepr.2018.04.008>.
- Henderson, V., 1964. The nature of nursing. *AJN Am. J. Nurs.* 64, 62–68.
- Hsieh, H.-F., Shannon, S.E., 2005. Three approaches to qualitative content analysis. *Qual. Health Res.* 15, 1277–1288. <https://doi.org/10.1177/1049732305276687>.
- Huisman – De Waal, G., Feo, R., Vermeulen, H., Heinen, M., 2018. Students' perspectives on basic nursing care education. *J. Clin. Nurs.* 27, 2450–2459. <https://doi.org/10.1111/jocn.14278>.
- Jackson, D., Kozłowska, O., 2018. Fundamental care – the quest for evidence. *J. Clin. Nurs.* 27, 2177–2178. <https://doi.org/10.1111/jocn.14382>.
- Jangland, E., Mirza, N., Conroy, T., Merriman, C., Suzui, E., Nishimura, A., Ewens, A., 2018. Nursing students' understanding of the Fundamentals of Care: a cross-sectional study in five countries. *J. Clin. Nurs.* 27, 2460–2472. <https://doi.org/10.1111/jocn.14352>.
- Kitson, A., Conroy, T., Wengstrom, Y., Profetto-Mcgrath, J., Robertson-Malt, S., 2010. Defining the fundamentals of care. *Int. J. Nurs. Pract.* 16, 423–434. <https://doi.org/10.1111/j.1440-172X.2010.01861.x>.
- Lake, E.T., De Cordova, P.B., Barton, S., Singh, S., Agosto, P.D., Ely, B., Roberts, K.E., Aiken, L.H., 2017. Missed nursing care in pediatric. *Hosp. Pediatr.* 7, 378–384. <https://doi.org/10.1542/hpeds.2016-0141>.
- Macmillan, K., 2016. The hidden curriculum: what are we actually teaching about the fundamentals of care? *Nurs. Leadersh.* 29, 37–46. <https://doi.org/10.12927/cjnl.2016.24644>.
- Nightingale, F., 1860. *Notes on Nursing: what it Is, and what it Is Not*. Harrison and Sons, London.
- Noble, H., Smith, J., 2015. Issues of validity and reliability in qualitative research. *Evid. Based Nurs.* 18, 34–35. <https://doi.org/10.1136/eb-2015-102054>.
- Norwegian Ministry of Education and Research, 2012. *Education for Welfare - Interaction in Practice*. Retrieved 15.06.18 from: <https://www.regjeringen.no/no/dokumenter/meld-st-13-20112012/id672836/sec1>.
- Polit, D.F., Beck, C.T., 2017. *Nursing Research: Generating and Asssing Evidence for Nursing Practice*. Wolters Kluwer, Philadelphia, PA.
- Ross, D., 2017. Challenges for men in a female dominated environment. *Links Health Soc. Care* 2, 4–20.
- Saunders, B., Sim, J., Kingstone, T., Baker, S., Waterfield, J., Bartlam, B., et al., 2018. Saturation in qualitative research: exploring its conceptualization and operationalization. *Qual. Quant.* 52, 1893–1907. <https://doi.org/10.1007/s11135-017-0574-8>.
- Schneider, M.A., Ruth-Sahd, L.A., 2015. Fundamentals: still the building blocks of safe patient care. *Nursing* 45, 60–63. <https://doi.org/10.1097/01.NURSE.0000464987.77315.76>.
- Tong, A., Sainsbury, P., Craig, J., 2007. Consolidated criteria for reporting qualitative research (COREQ): a 32-item checklist for interviews and focus groups. *Int. J. Qual. Health Care* 19, 349–357. <https://doi.org/10.1093/intqhc/mzm042>.
- Voldbjerg, S.L., Laugesen, B., Bahnsen, I.B., Jorgensen, L., Sorensen, I.M., Gronkjaer, M., Sorensen, E.E., 2018. Integrating the fundamentals of care framework in baccalaureate nursing education: an example from a nursing school in Denmark. *J. Clin. Nurs.* 27, 2506–2515. <https://doi.org/10.1111/jocn.14354>.
- Vygotsky, L.S., 1978. In: Cole, M., John-Steiner, V., Scribner, S., Souberman, E. (Eds.), *Mind in Society. The Development of Higher Psychological Processes*. Harvard University Press, London.
- World Medical Association Declaration of Helsinki, 2013. *Ethical principles for medical research involving human subjects*. *JAMA* 310, 2191–2194.
- Zwakhalen, S.M.G., Hamers, J.P.H., Metzethin, S.F., Ettema, R., Heinen, M., De Man-Van Ginkel, J.M., Huisman-De Waal, G., Vermeulen, H., Schuurmans, M.J., 2018. Basic nursing care: the most provided, the least evidence based. A discussion paper. *J. Clin. Nurs.* 27, 2496–2505. <https://doi.org/10.1111/jocn.14296>.