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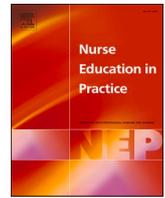
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Health-promoting and -impeding aspects of using peer-learning during clinical practice education: A qualitative study

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ABSTRACT

Aim: The aim of the present study was to elucidate health-promoting and -impeding aspects of peer-learning by examining nursing students' descriptions of learning together as peers, and how this might interact with their health.

Background: Peer-learning is a useful strategy for teaching and learning in nursing students' clinical practice education. In the research, benefits such as improved cooperation and increased self-confidence have been described and labelled as health-promoting.

Design: A qualitative descriptive approach

Method: Thirteen first-year nursing students aged 22–45 years, who had completed their first clinical practice education on a medical or surgical hospital ward, participated in one-on-one semi-structured interviews. The interviews were analyzed using qualitative content analysis. Result: Working as a pair was primarily described as positive, as the peers felt basic support from each other, even though they described negative experiences that limited their own development and challenged their patience.

Conclusion: Peer-learning as a model for supervision in clinical practice incorporates valuable health-promoting aspects, as the students felt safe, supported, increased self-confidence, and participation. The interaction between peers helped them grow as human beings, and the mutual support the peers felt was a vital health-promoting aspect that limited the impact of the described health-impeding aspects, which included sometimes finding peer-learning trying, stressful and irritating.

1. Introduction

Clinical practice education (henceforth called clinical practice) is considered essential to nursing students owing to its major emphasis on learning skills and approaches that are fundamental to the nursing profession. Even though nursing students are generally satisfied with their clinical practice (Ekstedt et al., 2019; Warne et al., 2010), it can become a demanding reality for many nursing students. Nursing students' levels of stress and anxiety were found to be higher than those among non-nursing students (Bartlett et al., 2016), and nursing students' sources of stress were reported to predominantly derive from clinical practice (McCarthy et al., 2018). In the present paper, we explore whether peer-learning – a learning strategy in which peers work

collaboratively to learn with and from one another (Carey et al., 2018) – can promote nursing students health during their clinical practice.

2. Background

Clinical practice can be regarded as nursing students work setting, where the accompanying health-promoting and -impeding aspects are important to elucidate. For instance, Pitkänen et al. (2018) described how the clinical learning environment and support from the preceptor impact nursing students' experiences of their clinical practice. Another study reported health-impeding environments in which students' placements were characterized by lack of respect, trust, support, and where the extent of these shortcomings was dependent on the support

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nurses and lecturers gave students (Galletta et al., 2017). Learning and development at work have been described, in different theoretical frameworks, as health-promoting, i.e., as providing opportunities to develop new skills and knowledge (Grawitch et al., 2006; Kanter, 1993; Lindberg and Vingård, 2012; Porath et al., 2012). Other health-promoting aspects of work found in one review (Lindberg and Vingård, 2012) are good collaboration and teamwork, control, empowerment, communication and feedback, recognition, respect, role clarity and involvement. Furthermore, psychological capital, including self-confidence and self-efficacy, has been emphasized. Health-promoting aspects during clinical practice have been identified in several reviews of students. For instance, Kaihlanen et al. (2019) suggested that comfort and confidence are essential to learning in practice. Furthermore, Forber et al. (2016) and Jessee (2016) found that development of supportive relationships between students, staff and preceptors and students' learning in clinical settings were dependent on the situations the students encountered during their placement as well as on the learning and supervision models used. Some of the above-described health-promoting aspects are also clearly related to decreased levels of stress, better mental health outcomes and reduced burnout (Laschinger et al., 2019; Laschinger and Grau, 2012).

Peer-learning is based on the idea that learning involves social cognition and that experience, understanding and knowledge acquisition are shaped in interactions between humans. Peer-learning can include small groups or paired learning from similar social groupings, among individuals who are not professional teachers but who help each other learn and learn themselves by helping others (Boud et al., 2001). In the present study, peer-learning refers to a pair of students, enrolled in the same course, who have mutual responsibility for a group of patients and are supervised by one preceptor. The peers help each other, share information, bounce ideas around, solve problems, and discuss their situation, goals, and needs with each other (Pålsson et al., 2021).

Earlier studies on peer-learning in clinical practice have described the following health-promoting aspects: increased student confidence (Markowski et al., 2021; Carey et al., 2018; Nelwati et al., 2018), self-efficacy (Pålsson et al., 2017), and involvement (Carey et al., 2018). Passing on skills by demonstrating them for each other and sharing skills based on your own experience are also thought to promote health, because they further students' development and clinical knowledge (Choi et al., 2021; Nelwati et al., 2020; Carey et al., 2018; Stenberg and Carlson, 2015). Furthermore, improved cooperation, teamwork and communication skills have been reported in systematic reviews on peer-learning (Markowski et al., 2021; Nelwati et al., 2018), and giving each other emotional support has been found to be significantly related to experiences of reduced stress and anxiety (Carey et al., 2018; Nelwati et al., 2018). Few limitations associated with peer-learning have been reported in the literature, but students' have described impeding aspects in the form of having to share scarce resources with the peer. Furthermore, poor student learning when personalities or learning styles clash has been suggested as a possible disadvantage (Pålsson et al., 2021; Carey et al., 2018) as has experiencing negative competition (Briffa and Porter, 2013; Secomb, 2008).

In sum, the research suggests that peer-learning is a model with many advantages, and these advantages have also been described within the framework of health-promoting aspects. Moreover, it is known that students experience health-impeding aspects such as stress, anxiety and negative competition during clinical practice. Thus, it is of great interest to generate more precise knowledge about students' experiences of what happens in the peer interaction and how this might interact with their health. The aim was to elucidate health-promoting and -impeding aspects by examining nursing students' descriptions of learning together as peers.

3. Method

3.1. Design

An interpretive, descriptive and qualitative approach was used.

3.2. Participants and setting

A convenience sample of 13 first-year nursing students, i.e. in the second semester of six, who had their first clinical practice on a medical or surgical hospital ward were included (12 women and 1 man; 22–45 years of age). None of the students had previous experience of peer-learning. The clinical practice was fulltime and lasted for four weeks: two weeks of traditional supervision followed by two weeks of peer-learning. During the period with traditional supervision, the students were assigned to practice one-to-one with an individual preceptor who provided demonstrations and instructions. Furthermore, they had the opportunity to become familiar with the hospital ward and specific routines. During the final two weeks, two students had the same schedule, the same preceptor, and shared responsibility for a small group of patients. All students and responsible staff at the units had been informed about the peer-learning model.

3.3. Data collection

The students were informed about the study, verbally and in writing, on the first day of their clinical practice period by a lecturer not involved in the data collection. If they agreed to participate, they were informed that they would be contacted by the data collector (AL) to schedule the one-on-one interview in connection with the end of the peer-learning period. The students were to choose the time and place for the interview. Semi-structured interviews were conducted mainly at the university during October–November 2014; they lasted between 20 and 40 min and were recorded on a digital MP3 player. The interview guide covered questions about the nursing students' experiences of working together with a fellow student and their perceptions concerning what learning together as peers means to them. The questions were open-ended in nature, e.g., "How did you experience the clinical practice period with peer-learning?" [Positive and negative aspects] "How did it affect you?" The interviewer probed participant responses using follow-up questions such as "Can you describe this more?" to tap into deeper levels of the students' experiences.

3.4. Data analysis

The transcribed interviews were analyzed using manifest and latent qualitative content analysis (Graneheim and Lundman, 2004), which involves interpreting the underlying meaning of the text. To understand and become familiar with the text and to obtain a sense of the whole, the transcriptions were read through several times by the first and last authors (EÄ, ML). Meaning units were then identified based on the study aim, condensed, and labeled with a code to get an overview of what the informants had talked about. Thereafter, the codes were grouped according to their similarities, and sorted into eight subcategories. Based on their content, the subcategories were linked and abstracted into two categories representing the health-promoting and -impeding aspects, respectively. The categories describe the manifest content of the informants' perceptions of learning together as peers, i.e., the categories were labeled so as to stay close to the content of the text. See Table 1 for an example of the analysis process. The latent content was identified by re-reading the transcriptions to interpret the underlying meaning of the text, and in accordance with the content of the meaning units a theme was formulated (Graneheim et al., 2017) that represents how the informants talked about the studied phenomena. The codes, categories and theme were continuously discussed by the co-authors until agreement on interpretation and labelling was achieved.

Table 1
Illustration of data analysis process.

Meaning unit	Condensation	Code	Subcategory	Elucidated health-promoting or -impeding aspects
To ask like, "what do you think about that?", well that you ask each other and can formulate your questions in words so that you hear them yourself. Then you notice if you're way off the mark or if there is actually some substance there.	Ask [your peer] what do you think about this, you ask each other and can formulate your questions in words. Then you notice if you're way off the mark or if there is substance there.	Ask each other and can formulate questions in words for your peer then notice if you were on the right or wrong path.	Learning from and with each other through exchange of new and previous experiences during mutual reflection on various interpretations helps you grow as a person	Encouragement
Stand back and watch or, the opposite, that I got to do a lot and she had to stand there watching and then she felt a bit irritated. Naturally, it was felt from both sides.	Stand back and watch or, the opposite, that I got to do a lot and she had to stand there watching, then she felt a bit irritated. It was from both sides.	Both of us could feel irritation when we had to stand back and watch.	Irritation with dividing work tasks better done alone to promote learning.	Irritation

3.5. Ethical considerations

The Regional Ethical Review Board in [blinded for review] approved the research plan (Reg. no. 2013/528). The integrity of participants was safeguarded by ensuring confidentiality and voluntary participation. Participants could withdraw their participation or refuse to answer any question during the interview. The interviewer was not involved in the nursing students' education and was unknown to the participants. It was regarded as important that the researcher involved in the data collection not be a member of the teaching team, given the power relationship that may exist between students and lecturers.

4. Results

The students' perceptions of feeling safe, having support and increased self-confidence as well as being able to participate were interpreted as health-promoting aspects and are illustrated in the category "Working as a pair who cooperate in a supportive nursing context provides (increased) security," see Table 2. The identified impeding aspects are illustrated in the category "Worn out and losing patience over

Table 2
Overview of categories and theme revealed during the manifest and latent qualitative content analysis of nursing students' perceptions of learning together as peers, interpreted as health-promoting and -impeding aspects.

Theme	Category	Subcategory	Elucidated health-promoting and -impeding aspects
"Security in the interaction promotes students' health despite challenging experiences when working as a pair"	"Working as a pair who cooperate in a supportive nursing context provides (increased) security"	Learning from and with each other through exchange of new and previous experiences during mutual reflection on various interpretations helps you grow as a person Cooperation where two people listen to, watch, show consideration for and support each other gives a sense of security in learning. Collaborating develops practical skills and results in increased responsibility, sense of control and security when the same patients are followed during the shift. Good structural prerequisites, participation in care work as well as support and being listened to by staff facilitated cooperation Irritation with dividing work tasks better done alone to promote learning. Uninformed staff carrying out nursing tasks in the rooms assigned to students Having to be together all the time was trying Discussion of work tasks does not occur when the work is stressful.	Feeling safe, having support, increased self-confidence, and participation in daily practice. <i>Safe, close, honest and respectful teamwork encouragement personal development motivation eased feeling of pressure cooperation sense of control well-organized ward cooperation/ support from staff being listened to being appreciated</i>
	"Worn out and losing patience over always being together"	Irritation with dividing work tasks better done alone to promote learning. Uninformed staff carrying out nursing tasks in the rooms assigned to students Having to be together all the time was trying Discussion of work tasks does not occur when the work is stressful.	Trying, stressful, and irritation. <i>trying feeling of not knowing no time to reflect challenging to compromise take a step back irritation annoyed</i>

always being together," which demonstrates students' perception that always being together was trying and stressful as well as their irritation with the need to share tasks. The two identified categories that represent the health-promoting and -impeding aspects are further described below and supported with interview excerpts, which are numbered to indicate the interview they were taken from. The students used phrases that were interpreted as health-promoting or -impeding aspects; these are written in italics in the text.

Overall, working as a pair was primarily described as a positive experience. The peers felt vital, mutual and basic support from each other. This support limited the impact of the described negative experiences, which restricted their own development and challenged their patience. Thus, we abstracted the latent content regarding the informants' perceptions of what learning together as peers means to them as "Security in the interaction promotes students' health despite challenging

experiences when working as a pair," this is illustrated in the excerpt below. For an overview of the theme and categories, see [Table 2](#).

It's good for sure because you can bandy ideas around, that's what I think, I can't really say why but well, I guess you grow a bit when you can actually talk about what you've done, can see what the results are...//... It was, like I said, a little bit frustrating for a while because it was a bit like, who will be allowed to do it, but what can I say, it's still good that there are two of us (9).

4.1. Interpreted health-promoting aspects when learning together as peers

The category "Working as a pair who cooperate in a supportive nursing context provides (increased) security" describes health-promoting aspects found in the students' perceptions of working together in a student pair. The interaction between the peers was described as *safe* and as being characterized by *close, honest and respectful teamwork*, in which the students listened to each other. Learning from and with each other was described as enriching their learning, because the students had varying experiences and perceived things differently. *"It feels safe when we both get to learn things together, because we understand things differently"* (8). They discussed their different perceptions and approaches to solving problems together. This led to new ways of thinking, and they described how they *encouraged each other* and sharpened each other's awareness. *"You have to put your thoughts into words and then you hear, you notice if they're off the wall or if there's some substance there"* (2). The students described having gained knowledge and insight into the nursing role when learning together, noting that being able to supervise a peer contributed to *personal development* and gave *motivation* to continue studying and to try things out on their own.

Having continuity and jointly caring for the same patients during their hospital stay *eased the students' feeling of pressure* in relation to managing all the necessary tasks and measures. *"We followed the same patients every day...//...we followed up on how they felt about things, so we knew the patients better as well as their needs"* (13). The students described how they *cooperated well* in patient care situations, which encouraged them to dare to assume responsibility for their assigned patients. Moreover, the students described experiencing increased *self-confidence and sense of control* when they cared for patients together. *"I've learned to calm myself down, think things through and discuss them"* (2). The feeling of being in control included knowing what should be done in patient care, performing and finishing tasks, finding routines and becoming aware of their own limitations. *"Knowing your limitations, I guess I think that's being in control"* (6).

The students said that having a *well-organized ward* with good structural preconditions, e.g., computers and medical trolleys, and having an available preceptor who is familiar with the peer-learning model and who supports and gives space for students' individual and joint learning were important. Other health-promoting aspects when learning together as peers were having *good co-operation* with and *support* from the staff, feeling one is *being listened to*, and being *appreciated* for the work one does. The students felt safe in the knowledge that they could ask for help from both nurse assistants and RNs. *"We turned to each other and bandied ideas around first, and if we were still unsure, we always asked, there was always someone there we could ask"* (6). Thus, they saw themselves as *participating in daily practice*, and this was an essential health-promoting aspect when learning together as peers.

4.2. Interpreted health-impeding aspects when learning together as peers

The category "Worn out and losing patience over always being together" describes health-impeding aspects found in the students' experiences. Always being together was *trying*. The students described sometimes being *stressed* by each other, by the *feeling of not knowing* and the fact that they had to repeatedly pose questions to the personnel or their preceptor. *"Sometimes being two of us all the time and walking around with each other can be difficult, you don't want to say it's hard to cooperate either, it's*

just too much sometimes, maybe you need to be alone at times and work independently" (9). Another health-impeding aspect was that, on stressful workdays, the peers were not given time to carry out their common daily reflection, which they found regrettable. *"You reflect on things more afterwards, when you're not feeling the pressure and stress"* (3).

The students described having no problems getting along and allocating tasks between them, even though they found it *challenging to compromise* on who performed certain tasks. They also said that sharing the more interesting tasks sometimes felt difficult. *"It makes you [step back] because you don't get all the opportunities yourself, but you have to share them"* (11). However, the students also felt that learning to work together was important and that they sometimes had to *take a step back* to allow their peer to learn. Some of the students also described becoming *annoyed* because watching when the other student performed the task was difficult, even if they also felt they too were learning while watching their peer. They said they had wanted to do more tasks on their own and to focus on developing their own practical skills. *"Practicing is really important, of course you get practice by observing, but I would have liked to observe a bit less and to try things myself a bit more"* (10). This situation was intensified when nurse assistants performed tasks in the room the students were responsible for or when patients did not require a great deal of care, e.g., walked independently or took care of themselves, making it extra challenging to divide the tasks.

5. Discussion

Peer-learning was interpreted as having both positive and negative impacts on students' health. Many of the health-promoting and -impeding aspects associated with learning together as peers during clinical practice have also been emphasized in theoretical frameworks of health-promoting aspects of work, for instance by [Porath et al. \(2012\)](#), [Lindberg and Vingård \(2012\)](#), [Grawitch et al. \(2006\)](#), and [Kanter \(1993\)](#). Regarding peer-learning and the interpretation of nursing students' experiences of health-promoting and -impeding aspects in clinical practice, our findings are in line with results from other studies (e.g., [Choi et al., 2021](#); [Markowski et al., 2021](#); [Pålsson et al., 2021](#); [Nelwati et al., 2020](#); [Carey et al., 2018](#); [Nelwati et al., 2018](#); [Pålsson et al., 2017](#); [Briffa and Porter, 2013](#)), many of which focused on factors that promote students' learning. However, our contribution to the research field is a deepened understanding of nursing students' experiences of what occurs in the peer interaction and how this might interact with their health. The security experienced through the students' interaction was considered a vital health-promoting aspect. However, the students described always being together as challenging. Thus, the health-promoting aspects of peer-learning that emerged are supported by the fact that the students interacted as peers during their clinical practice and learned from and with each other ([Boud et al., 2001](#)). Sharing one's individual skills with a peer and demonstrating these skills for a fellow student have been described as contributing to students' development and clinical knowledge ([Choi et al., 2021](#); [Nelwati et al., 2020](#); [Carey et al., 2018](#); [Stenberg and Carlson, 2015](#)). Moreover, the interactions as peers gave the students a sense of control. The opportunities they had to assume responsibility and to have a feeling of control and gain a holistic understanding of a situation have all been identified as health-promoting factors ([Gibbons et al., 2011](#); [Lindberg and Vingård, 2012](#); [Nelwati et al., 2018](#)). Thus, being peers during clinical practice develops a supportive relationship between the students, which is interpreted as health-promoting. High levels of support at work are associated with increased well-being in the job-demand-control-support model (JDCS) developed by [Karasek and Theorell \(1990\)](#). They proposed that having a helpful relationship between coworkers and supervisors is of importance to experiencing positive outcomes ([Karasek and Theorell, 1990](#)), and this was also true of the mutual support the students felt from each other when learning together as peers. In relation to the elucidated health-promoting aspects, students' expressions such as feeling safe, having support and increased self-confidence as well as

being able to participate on the ward were common in the present study. However, the students experienced health-impeding aspects as well, in that being together all the time was trying and stressful, and sharing tasks could be irritating. Such impeding factors were described early by [Secomb \(2008\)](#). However, they still seem relevant in students' clinical practice, as they were described in a recently published article ([Pålsson et al., 2021](#)) as well. Because nursing students seem to primarily feel stress during their clinical practice ([McCarthy et al., 2018](#)), we regard it as important to acknowledge and prevent the impeding aspects students perceive, as they affect both their learning and their health.

The health-promoting aspects also contributed to students' perception of having experienced a rich learning process during their clinical practice. Previous research has shown that having a feeling of connectedness and support while learning together increases students' self-confidence ([Markowski et al., 2021](#); [Carey et al., 2018](#); [Nelwati et al., 2018](#)). Self-confidence and self-efficacy are thought to constitute health-promoting psychological capital, which is important to develop at work ([Lindberg and Vingård, 2012](#)). Thus, the students' interaction, i. e., co-operating with and supervising each other, provided the conditions to both improve their health and create a rich learning process, which they referred to as having grown as a human being. Furthermore, [Gibbons et al. \(2011\)](#) suggested that self-efficacy, dispositional control and support are important predictors of nursing students' perceived well-being. This suggestion is in line with the present results, and in their quasi-experimental study [Pålsson et al. \(2017\)](#) described how using peer-learning as a model for supervision improves nursing students' self-efficacy to a higher degree than does traditional one-to-one supervision.

The students described well-organized wards with available preceptors and supportive staff. This situation was considered important to promoting nursing students' health during their clinical practice. The clinical learning environment and having support from the preceptor are important determinants of how students experience their clinical practice ([Pitkänen et al., 2018](#)), as is the supervision model used ([Forber et al., 2016](#); [Jessee, 2016](#)). [Galletta et al. \(2017\)](#) showed that lack of respect, trust and support from staff reduces students' satisfaction with their clinical practice. Such problematic relations with staff or preceptors were also described as a source of stress for nursing students in clinical practice ([McCarthy et al., 2018](#)). Above all, preceptors ought to provide nursing students with space and structure, thereby supporting nursing students' learning, both as individuals and as peers, and in doing so, also promoting students' health.

The present results showed that the students struck a balance between performing caring tasks by themselves and having to share these tasks with a peer. Earlier studies on peer-learning as a model for supervision have shown that students experience reduced opportunities to practice practical skills ([Pålsson et al., 2021](#); [Carey et al., 2018](#); [Austria et al., 2013](#); [Ravanipour et al., 2015](#)). This is regarded as an aspect that impedes nursing students' health, given the scarce resources they must share and the perceived negative competition ([Briffa and Porter, 2013](#); [Secomb, 2008](#)) they experience. However, the students in the present study also described having learned by observing their peer carrying out tasks. Thus, the fact that the students had to compromise and come to a mutual agreement to create a balance between co-operation and individual development was interpreted as contributing to their personal development and motivation to continuously try things out themselves. Furthermore, [Pulido-Martos et al. \(2012\)](#) showed that it is common for students to experience fear when they find themselves in unfamiliar situations. Several studies have demonstrated that having the support of a peer lessens the fear of making mistakes during clinical training ([Austria et al., 2013](#); [Ravanipour et al., 2015](#)). This was also described by the students in the present study, as they felt more secure when they were together. Thus, the mutual support described in the present study in relation to peer-learning promotes not only nursing students' clinical knowledge and skills, but also their health.

5.1. Methodological considerations

The aspects of trustworthiness, i.e., credibility, dependability and transferability ([Graneheim et al., 2017](#)), will be discussed. To assure variation in experiences of the studied phenomenon, students of different ages, gender and cultures were included. However, only one man participated, although this does reflect the actual distribution of women and men enrolled in the program to become a registered nurse. As the aim of the present study was to elucidate health-promoting and -impeding aspects by examining nursing students' descriptions of learning together as peers, interviews were judged to be the most appropriate data collection method. However, a survey could have been performed to measure the students' perceived quality of life, but we were interested in generating more precise knowledge about students' experiences and how these might interact with their health. During the analysis process, we have tried to not lose the meaning of the text and to cover all of the data. We also used excerpts to reinforce the findings. Thus, to enhance credibility, the setting, participants, and the methodological procedure are well defined in the study, and the results are illustrated using excerpts from the transcribed interviews. To enhance dependability, an interview guide was used to ensure that all informants were asked the same questions. Moreover, all interviews were conducted within a limited period near the end of the students' peer-learning period. To enhance both credibility and dependability, the research team collaborated by maintaining an ongoing open dialogue during the analysis process to achieve agreement in interpretations and labelling. The results may be transferable to contexts using peer-learning in nursing students' clinical education. A cautionary note, though, is that when transferring the results to another context, it should be kept in mind that the data were collected Oct.-Nov. 2014. Since then, the knowledge base on peer-learning has increased and been further developed. The interviews could be considered rather short, but the studied content area was well defined and the informants' responses were deemed informative.

6. Conclusions

Peer-learning as a model for supervision in clinical practice incorporates valuable health-promoting aspects for nursing students, i.e., feeling safe, having support, increased self-confidence and being able to participate. Further, the interaction between the peers helped them grow as human beings, not just professionally but also personally. However, the mutual support the peers felt from each other also included health-impeding aspects, which were experienced as trying, stressful and irritating. These results are important to acknowledge when nursing educators and healthcare sectors are planning and organizing nursing students' clinical practice education, as they would enable these professionals to support the health-promoting and prevent the health-impeding aspects of peer-learning.

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Declaration of Competing Interests

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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Ethical approval details

The Regional Ethical Review Board in Uppsala approved the research plan (Reg. no. 2013/528). The integrity of participants was safeguarded by ensuring confidentiality and voluntary participation. The interviewer had no involvement in the nursing students' education.

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