



Collaborative Learning Experiences of Nursing Students in the Clinical Learning Setting: A Qualitative Study

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Abstract

Introduction: Collaborative learning encourages students to work with peers and leads to the development of problem-solving and communication skills, and the transfer of knowledge learned in the classroom to be used in the clinical setting. This study aims to explain the role of collaborative learning experiences of nursing students in the field of clinical training.

Methods: In this qualitative study, 20 nursing students who experienced specialist clinical training were selected using object-based sampling. The data were collected using semi-structured and focus group interviews. The interviews were transcribed verbatim and the relevant themes were extracted and categorized using content analysis.

Results: The results revealed that group interactions lead to useful experiences in clinical works. It was also shown that collaborative learning affects the clinical success of nursing students. The participants stated that group work in clinical settings is the most important learning experience in the training course. While contributing to learning development, group participation helps the students to deal with the assigned tasks more efficiently and support each other by sharing their knowledge and establishing friendly relations. The themes derived from the data included 1) peer support, 2) clinical reasoning, and 3) group capabilities.

Conclusion: Collaborative learning is an important factor in improving clinical work. The results of the present study underlined the weakness of educational programs in terms of collaborative learning. Therefore, educators and education professionals are recommended to support the development of a suitable context for active and collaborative education and learning.

Keywords: Education, Nursing students, Clinical setting, Collaborative learning

Introduction

Collaborative teaching/learning is one of the essential elements in medical science education, including clinical education. There are different approaches to clinical education but three general approaches include the traditional model in which the instructor is directly responsible for guiding the student in the clinical setting, and also the clinical instructor/supervisor model and the collaborative model. In this collaborative education method, participants work together to achieve a common goal by creating strong theoretical knowledge and providing opportunities to connect theoretical education and clinical education,

which leads to the development of students' clinical adequacy (1,2). This collaboration occurs when students work together in small groups to share their knowledge and experiences. All of these activities are performed to achieve a specific goal (3). Clinical education can be considered as an activity that facilitates learning in a clinical setting in which the clinical instructor and the students are equally involved (4).

One of the goals of clinical education is to prepare students for their main professional functions, increase their professional responsibilities, and gain independence in doing things, as well as empower students to apply knowledge and competencies in



their professional life. Getting help from peers' learning facilitation strategy has been identified as a way to reduce problems and increase learning outcomes (5,6). Collaborative learning is a social and intellectual stimulus for educating nursing students, which can be used to encourage students to play an active and responsible role in learning. Clinical experience is an opportunity for students to learn nursing in a real clinical setting (7). A clinical setting is a place that allows students to use their knowledge for leading a professional life. Nursing students should move towards practical knowledge after receiving theoretical knowledge (8). The clinical setting provides the ground for learning and at the same time acts as a factor involved in teaching and learning. The goals of clinical work for nursing students include developing analytical and critical thinking skills, competence and proficiency, psychomotor skills, communication skills, time management skills, and increasing self-confidence to work as a nurse in the future (9,10). To practice and reinforce what they have learned and become skilled nurses to perform assigned functions and roles, nursing students need supporters who are interested in clinical work. By entering the clinical setting, a nursing student experiences a new educational environment that is different from the classroom educational environment in terms of effective learning factors. Collaborative education and learning programs and the support of peer groups can play an effective role in improving the quality of clinical education (11-13). Clinical work provides learners with the experience of working with real clients who have real problems and enables them to use their knowledge in practice, develop their decision-making and problem-solving skills, and learn how to learn and also be responsible for their actions (11,14,15). It is now clear that there must be a commitment to ensuring the proper education of nursing students, a type of education that leads to the development of students' clinical adequacy by creating strong theoretical knowledge and providing opportunities to connect theory and patient care activities (16).

Collaborative learning groups provide the experience of clinical training to foster social skills and empathy with others. Providing education in the form of collaborative learning enhances the learner's independence while working in groups, and quickly leads students to independence in learning, self-directed decision-making, and detecting and solving problems. This method is based on the active acquisition of information through the analysis of problems and the effort to reach their answers and helps learners to express and justify their opinions

and ideas and to get familiar with others' opinions (17). This reinforces communication skills, effective teamwork, critical reasoning, and student self-assessment. In clinical education, students, especially newcomers, must gain sufficient legitimacy to enter the community or clinical department and be considered potential members of the working community. This may be difficult for nursing students, as their presence in the department depends on certain factors, and their position may not be sufficient to prepare them and subsequently participate in significant groups (7). Experts also argue that achieving the main goal of nursing education, which is the training of trusted and qualified graduates, depends to a large extent on high-quality clinical education (5). The nursing profession must constantly seek to improve the clinical experience of students to maximize their learning. To do this, the research-based information must be available to authorities so that, based on this information, they can provide appropriate planning and design for the students' clinical experience. Failure to provide relevant and appropriate clinical experience can have consequences not only for students but also for the curriculum and nursing profession. Inadequate clinical experience can lead to student frustration with nursing and ineffective learning, and as this problem persists, the entire program will have difficulty achieving its goals, resulting in the training of nurses who do not have the necessary adequacy as a nurse (4,13,18). The experience of nursing educators in facilitating learning in clinical settings is more important than just engaging in care, but the teaching method that has received the most attention from nursing educators is education that directly engages students in clinical training. Students' clinical training is one of the main parts of nursing education (4). Therefore, the evaluation of clinical education can play an important role in improving the quality of nursing education. Reviewing the available studies, the researchers concluded that in the case of clinical experience, there is a limited number of qualitative studies on the clinical experience of nursing students in Iran, and a qualitative look at collaborative learning experience of nursing students can be the starting point for the use of collaborative learning in educating students. Accordingly, this study aimed to explain nursing students' experiences of the role of collaborative learning in clinical education.

Methods

This study is part of a qualitative research project that was conducted based on the grounded theory using conventional content analysis. Given that nursing students participate in the training program in groups

of at least 5 and at most 8 persons as a requirement for the case study using the nursing process, they experience collaborative learning as a teaching strategy in small groups in different clinical courses. This study aimed to explain the process of collaborative learning in clinical education based on students' experiences. The participants were selected using purposive sampling. Since the focus in qualitative research is mainly on information obtained from individual experiences rather than the sample size, in this study, the data were saturated after in-depth interviews with 20 nursing students. The criteria for entering into the study were to be a student, engaged in studying at the time of conducting the study, having the experience of undergoing clinical education for at least 3 years, willingness to be interviewed, and the ability to express experiences. First, the objectives of the study were explained to the participants and they were told that their participation is voluntary. The data were collected using semi-structured and in-depth interviews. In addition to the face-to-face interviews, the students were interviewed as focus groups. Without trying to give a specific direction to the conversation, the interviewer tried to capture the participants' real world and their educational experiences. Ethical considerations were observed in this study by obtaining full and informed consent to participate in the study, asking for the participants' permission to record the interviews, maintaining honesty, and not forcing the students to participate in the study. The interviews were conducted by ensuring the participants about their scientific contribution and confidentiality of their statements, information, and identity. The interviews were conducted in a quiet space at a suitable time by making prior arrangements with the participants. The interviews began with open questions (e.g., Could you explain your experience of collaborative learning in clinical education). After completing the interviews, the recorded interviews were transcribed, the collected data were analyzed, and the relevant themes were extracted and categorized. The research data were collected with systematic research and purposeful and open-ended questions. The duration of each interview was 40 to 60 minutes. The process of data collection and analysis lasted for two and a half academic years.

In this study, the four criteria of trustworthiness of qualitative research including credibility, dependability, confirmability, and transformability were used to

increase the accuracy and robustness of the data. To check the credibility of the data, the transcripts of the interviews were reviewed and confirmed by the participants, and any possible ambiguity and inconsistency were removed. To check the dependability of the data, the external report method was used, and research colleagues were asked to review the codes.

Furthermore, to ensure the confirmability of the data, the researcher extracted the codes without any bias and prejudice by observing bracketing. The researcher tried not to involve her presuppositions as much as possible in the process of data collection and analysis.

Transferability means using the results in similar situations. In this study, to increase the transferability of the findings, it was tried to record all the details of the study including the characteristics of the participants and the research environment. The transferability of the findings was increased by comparing the data with the findings of other studies. The researcher searched for disconfirming evidence without bias. The researcher also tried to provide the possibility of judging the transferability of the findings to another setting by providing a clear description of the research setting, the participants, and the themes and also connecting them with the participants' statements.

After reviewing the contents several times, the recorded voices from the interviews were listened to accurately and typed word for word. Although the analysis of the data was done at the time of the interviews or data collection (simultaneous analysis), the data were analyzed by content analysis, which is defined as a research method. Afterward, the data were summarized, the codes were extracted and categorized manually by the researcher, and the main themes were identified. Lastly, the findings were analyzed and then the conclusions were drawn.

Results

In this study, the data from the experiences of 20 participating students were collected through interviews (Table 1). In-depth interviews were conducted with nursing students. Each interview took an average of 45 minutes. Using the content analysis, 465 initial codes were identified from the interview transcripts and three main themes of peer support, clinical reasoning and group capabilities were extracted and subcategorized as follows (Table 1).

Table 1. The participants' demographic data

Participants	Number	Sex	Education	Marital Status			
Students	20	Male	6	Master	5	Single	13
		Female	14	Bachelor	15	Married	7

Peer support: (1) Feeling satisfied and adequate, (2) feeling positive belonging, and (3) improving self-confidence.

A. Clinical reasoning: (1) Execution of the nursing process, (2) evidence-based nursing, and (3), problem-solving based learning.

B. Group capabilities: (1) Sharing abilities and participation in group tasks, (2) group dynamics guided by the instructor, and (3) communication skills (Table 2).

Peer support

Peer support and shared learning: Working together in a group allows the participants to share their feelings, experiences, and problems, get feedback and learn from each other. Sharing experiences helps the participants develop self-confidence and understand their value by participating in discussions, presenting their ideas, and caring for the patient, *“When we work together, we work with more confidence and have a greater sense of competence in patient care”* (Participant 9).

Most participants were willing to perform clinical tasks and gain clinical experience while recognizing patient care and doing a careful analysis of the patient's conditions. The participating students stated that they were more satisfied when working in a group compared to the time when they were engaged individually in the patient care as this helped them to learn from each other's experiences and work collaboratively in clinical tasks.

Based on the results of this study, the students could better handle the assigned tasks with the spirit of cooperation in the clinical settings when the patient care tasks were divided among them. This teaching method encouraged the students to be more active while performing care tasks and act more carefully and with greater responsibility when trying to learn new things. However, they considered mere traineeship activities for care functions as habits and passive experiences. The analysis of the students' common experiences in terms of educational activities indicated common themes such as deep learning experiences, clinical reasoning, group participation, and support from group members and peers. According to the clinical lesson plan, the activities are determined from the beginning and the students will take responsibility

for doing it. The spirit of collaboration starts from the beginning of the work by reviewing and collecting patient information, searching for documentation, and asking from trainers, health staff, senior students, etc. *“We regularly collect the materials in cooperation with other group members. When it comes to our reporting, we find that we have come up with a different view about the commission”* (Participant 6).

Clinical reasoning

One of the main themes extracted from the participants' experiences was clinical reasoning. The implementation of the nursing process as a tool for clinical learning could make the students familiar with the art of reasoning and logical thinking and increase their readiness for dynamic clinical situations. One of the important nursing functions is to make decisions about client care. In response to this need, clinical nursing education places great emphasis on clinical reasoning and the use of evidence in the nursing process so that nurses can make better decisions in the clinic and work more independently and skillfully.

Most of the participants considered this training method to be effective in developing problem-solving skills. According to one of the participants, *“I understand the content more completely when we discuss and study the clinical topics in question, and of course, I would like to know if there were other issues related to the topic under discussion that I have not thought about before”* (Participant 10). *“Unlike other groups, we are much active and engaged in the clinical group. In our case studies, we are mostly preoccupied with finding the best care solution and the causes of the patient's problems”* (Participants 11 and 4). *“I listen to the instructed materials eagerly in clinical sessions, and I never forget the issues discussed with other students and the professor in real cases”* (Participant 5). *“Most of the participants considered the role of the instructor to be important in guiding collaborative learning activities in the clinic. If the instructor, while providing clinical work, asks the students to advance their work by analyzing the case and based on the nursing process, and the instructor himself/herself raises questions while discussing, of course, all members of the group will have to analyze the issues and get involved in the discussion”* (Participant 12).

Table 2. Categories and subcategories identified in the study

Main category	Subcategory	Primary categories
Synergy in clinical learning	Peer support	Feeling satisfied and adequate
		Feeling positive belonging
		Improving self-confidence
	Clinical reasoning	Execution of the nursing process
		Evidence-based nursing
		Problem-solving based learning
	Group capabilities	Sharing abilities and participation in group tasks
		Group dynamics guided by the instructor
		Communication skills

According to the participants' experiences, clinical skills are developed based on up-to-date resources, during the training period and their involvement with clinical responsibilities and activities. The data from the participants' experiences led to the extraction of evidence-based performance. Most participants found this training method effective in learning and coming up with care solutions. For instance, one of the participants stated, *"Problem-based collaborative learning in the clinical setting is an active learning method that forces students to study individually and work in groups"* (Participant 3). *"Of course, at first we had concerns, and it was rather difficult to adapt to the new approach. But this method provided an opportunity to search for clinical cases and scientific solutions for care. I feel that I have learned more new things and developed a more complete view compared to mere observation"* (Participant 6). *"In the beginning, it was very difficult for me to search for clinical cases, and finding the material seemed useless, but now that we've been doing it for a few semesters, I developed a deeper understanding of patients and I gained a lot of capabilities. And, I feel more satisfied"* (Participant 13).

"I feel successful and learn more by finding care solutions in articles" (Participant 8). *"Using up-to-date scientific information is very important in evaluating the patient's conditions, and in many cases, it is necessary to implement the nursing process using up-to-date resources as we have to examine the cases carefully and find and present relevant resources to analyze the patient's problems"* (Participant 4). The group members have a common goal in collaborative learning. These goals should be clear, important, achievable, and coordinated. The members seek to gain evidence, ask certain questions, and resolve some issues related to the patient. Clinical reasoning is based on information and evidence, and the validity of reasoning depends on the underlying evidence.

Group capabilities

The third main theme extracted from the data was the participants' group capabilities that contained three subcategories: (1) Sharing abilities and participation in group tasks, (2) group dynamics guided by the instructor, and (3) communication skills.

Nursing students tend to have a defined position in the group. Several students in different groups and programs may be assigned to a specific clinical position. The participants stated that group participation in performing clinical tasks leads to a

sense of effectiveness and efficiency in them. However, they experienced individual learning in their primary care tasks as a dominant method in their clinical education program, which they considered to be a factor in superficial learning and a one-dimensional view of the students. *"The tasks assigned to us in most wards are usually performed in groups of 5-6 students as a part of the internship program. The group members actively participate in performing the nursing process based on the training program and guidance of the clinical instructor"* (Participant 17).

"If the goal is to work in a group based on a division of labor and a plan and if there is a topic to talk about in the next session, the students will get involved in the discussion and they can express their ideas about a given topic, for example, how to prevent and treat a problem. This allows everyone to contribute to the discussion and this can have a great impact on students' learning. In the beginning, some students did not like group work, but given the huge bulk of materials and assignments, we preferred to perform our activities in a group so that we could help each other" (Participant 11).

"We are much more comfortable interacting with patients and staff when we are working in groups of at least two people" (Participant 3).

The students' perceptions of interpersonal relationships naturally have both positive and negative aspects. Not all participants had positive experiences of interpersonal communication. Some of the participants expressed concern about poor communication, especially the lack of ability of nursing students and nurses in general in the healthcare system. For instance, one of the students stated (Participant 9), *"Sometimes you see that bedside do not consider students at all. No matter how much the students enter the hospital with interest, these maltreatments may discourage them"* (Participant 3). The students unanimously agreed that during focus group discussion as a result of the application of collaborative learning, their individual and group skills have increased. Training sessions, which include presentations as well as questions and answers, allow participants to express their feelings about their experiences, use theory to validate their actions, and suggest other ways for future action. This technique helps learners to develop their reflective skills. Accordingly, learners become active, inquisitive, and spontaneous individuals who, instead of being passively present in clinical wards, take the initiative in learning so that learning from their point of view is purposeful and meaningful. Experiencing this training

style will lead to individual and group development.

Discussion

This study examined the nursing students' experiences of collaborative learning during clinical training. The analysis of the participants' experiences showed that the students' empirical and theoretical knowledge, as well as their practical skills in dealing with cases in clinical situations, have improved during collaborative learning activities (12). One of the main themes extracted from the participants' experiences was "peer support". The students' participation and collaboration in the clinic will lead to satisfactory results, including participatory care. Learning from each other, participating in work and getting help from each other in care, receiving the patient's medical history, doing procedures such as changing dressings, venipuncture, catheterization, ECGs, etc. were some of the areas of clinical collaboration and participation for the participants. The students' friendship and collaboration in the clinical environment is a valuable resource that gives them a sense of comfort in asking questions from each other. Students also see each other's clinical skills and give feedback to each other in a positive way. Peer support is one of the key factors influencing student learning in clinical practice. Group members rely on each other and share their experiences (19,20), and this is more effective for enhancing their learning outcomes especially in the final academic years, and students use each other's knowledge, experience, and expertise as a learning resource to the extent that classmates see each other as a wise and critical person. Classmates play an important role in providing positive emotional support. Besides, the perception of having the same feelings and experiences with other students helps students to get rid of loneliness and try to learn from peers. The value of friendship in clinical training is another important point for members of clinical groups (12,21,22). It is a friendly relationship that makes it possible to ask any question. While doing clinical work, the students proved that being with other students is beneficial. The most important benefits of an internship program are being with the group members and receiving feedback and support from other students. Learning from peers by creating mutual support between students increases their accuracy and self-confidence in clinical decisions. Involving students in learning-teaching activities, by providing the possibility of receiving feedback, support, and guidance from peers improves and deepens clinical learning. The results of

McConnell's study showed that collaborative learning techniques and case studies have been effective on students' problem-solving and decision-making skills (21).

Clinical reasoning has been considered as an important aspect of professional performance in nursing. Developing critical thinking skills using the nursing process to solve nursing care problems is critical. Critical thinking occurs when a person constantly thinks systematically and explores and evaluates the information in an analytical way that ultimately leads to decision-making (3,22). The participants stated that collaborative learning in the clinic is effective in finding care solutions at all stages of the nursing process (assessment, diagnosis, goal recognition, planning, implementation, and evaluation). Students/instructor discussions help to integrate new information with biological knowledge and improve clinical performance.

To succeed in clinical practice, the students needed the encouragement of an expert such as a clinical instructor. The students' experience showed that students participating in collaborative learning in clinical practice need a proper curriculum and teacher encouragement to guide and motivate them. The existing clinical training programs do not give students the ability to become qualified nurses and acquire clinical skills. The role of teachers in students' clinical training is prominent and they play an important role in the success of clinical education and linking theory and practice (19,23). One of the most important skills of nursing instructors is the ability to guide and facilitate learning and improve teamwork and collaborative learning in students. Nursing educators should allow the learner to think and search scientifically and encourage them to think logically to solve care-related problems. The nursing instructor should try to revive students' intellectual development, that is, the power of analysis through the use of active teaching methods based on problem-solving (4,18,24).

Another theme identified in this study was group capabilities with three subcategories: (1) Sharing abilities and participation in group tasks, (2) group dynamics guided by the instructor, and (3) the participants' communication skills. Nursing students tend to define their position in the group and participate in clinical tasks. Several students may be assigned to a specific clinical position in different groups and programs. Newcomer students may be anxious or feel alienated when entering the clinical ward. Several studies have emphasized the importance of active student participation in clinical education. Active participation in the clinical setting is regarded

as a positive experience. The students who were under stricter control reported discomfort and stress, while those who were active in the clinical setting had pleasurable experiences of increased learning (21, 25).

Before learning, students need a sense of belonging to a group. The members' interactions with each other in clinical groups, feedback on clinical experience while dealing with real patients and communication with staff in various forms increase students' cooperation and self-confidence. Having a sense of belonging is one of the most important things for nursing students in clinical practice. Appropriate interpersonal relationships between nursing students and members of the health team, especially bedside nurses improve this sense of belonging. Cooperation, synergy, and group learning are important factors in the educational process. With the increase of educational experience with this educational method, students' independent learning during the training course, involvement, and communication skills will be developed (26,27).

Proponents of this educational approach argue that adults need to be able to cooperate instead of compete to succeed in the workplace and social relations. One of the ultimate and important effects of the collaborative approach is that students learn participation and collaboration skills. Participating in client care also builds students' self-confidence. Students who are allowed to participate and practice in the clinical setting are more motivated. In the collaborative approach, learners communicate with each other, and this enhances their cooperation and self-confidence (7,16).

One of the biggest challenges that students face in clinical settings is the need to be socially qualified and to be accepted by staff and clients. A client or patient who has been cared for by a nursing student for some time in a clinical setting may influence students' understanding of their experience and level of self-confidence. In addition to increasing the level of learning, nurses who have been trained collaboratively are more adaptable to change and innovation (7,21).

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Conclusion

Considering the synergy of collaborative education in the clinical setting, the professional nature of nursing and the necessity of teamwork in the clinical setting, nursing education should encourage students from the beginning for teamwork and active participation in the learning process. The consequences of collaborative learning during clinical education have been associated with students' useful experiences and have been designed, experienced, and studied in various forms, including problem-based learning, case study, etc.

Given the naturalistic aspect of qualitative research, the limitations of this study, like other similar qualitative studies, are related to the generalizability of its findings. Accordingly, the researcher tried to increase the transferability of the findings and make them more usable in similar populations by having more communication with the participants, preventing the researcher's bias by separating the participants' experiences from the original data and taking into account all aspects and events of the real environment. Improving students' individual and group ability and increasing their capacity to face real conditions of the clinical environment is one of the main goals of clinical education, which is well possible by using the collaborative learning/teaching strategy. Therefore, it is suggested that collaborative learning continues in small groups from the classroom to the clinic and use of this learning method be supported more by clinical planners and educators.

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Conflict of Interest

This study has no conflict of interest.

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