

# Pathology of Clinical Education in Intensive Care Unit: A Qualitative Study

Katayoun Jalali\*, Leila Bazrafcan, Samaneh Sabaghian and Mohammad-Reza Dehghani

Department of Medical Education, Shiraz University of Medical Sciences, Shiraz, Iran

## Abstract

**Introduction:** Improvement in the quality of clinical education leads to training professionally competent nurses in different fields, especially intensive care units. This study aims to survey the nursing instructors and students' experiences about the existing challenges and complexities of clinical education in intensive care units.

**Methods:** This is a qualitative study based on phenomenology approach. The data were collected through semi-structured interviews carried out in educational hospitals of Mashhad nursing school. Nursing academic staff, instructors and students were selected through purposive sampling and enrolled in the study. Sampling continued until data saturation. Interviews, as agreed by the participants, were recorded and then downloaded word by word. Based on Guba and Lincoln's criteria, the researcher tried to increase the reliability of the findings through allocating sufficient time for collecting the data, using two colleagues familiar with the coding of qualitative data and their analysis and referring to the participants to confirm the data.

**Findings:** 10 nursing academic staff and instructors working in the intensive care unit participated in this study. To clarify various aspects of the subject, we performed two interviews with 6 nursing students and 5 nurses. The analysis of data yielded 1457 codes which were reduced to 612 and categorized into 3 main themes and 8 subcategories or sub-themes. The main themes included destructive factors, educational strategies and education in intensive care units.

**Discussion:** Education in the intensive care unit is a valuable opportunity for learners. They learn not only the clinical aspects of patient care but also appropriate behavior and relationship of the treatment team in critically ill patient care. Negative experiences indicate the impact of destructive factors on the quality of education in intensive care units. The instructors' awareness about the clinical education methodology competencies seems to be necessary.

**Keywords:** Faculty nursing • Intensive care units • Qualitative research • Competencies • Physical examination

## Introduction

Clinical education is a process in which students acquire skills gradually and by attending the patient's bedside and they will be prepared to solve problems by gaining experience in logical reasoning. Clinical work stimulates students to use creative thinking skills to solve problems and provides opportunities for students to turn their theoretical knowledge into mental, psychological and motor skills. In fact, clinical teaching is a complex learning situation that is influenced by the content of learning, environment, action, and the reaction of participants (teacher, student, patient and etc). In this kind of situational teaching, learners will see the teacher's relationship with the patient and in these interactions, they will learn the skills of interviewing physical examination and counseling [1].

Clinical education forms an important part of education for nursing and midwifery students. The progress of nursing education depends on clinical education. Although the role of clinical and theoretical teaching in nursing education is high in the same ratio, clinical teaching is of great importance for nursing students and the most important part of learning takes place in clinical teaching [2,3].

Improving the quality of clinical education can lead to the training of highly qualified nurses in various clinical settings, especially in intensive care nursing unit that requires qualified nurses to provide specialized services to severely ill patients. The intensive care unit is one of the specialized fields in the health care system, which is also important in providing specialized services to patients other than specialized education [4].

\*Address for Correspondence: Katayoun Jalali, Department of Medical Education, Shiraz University of Medical Sciences, Shiraz, Iran; E-mail: Jalali001@yahoo.com

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In order to improve the quality of education in nursing clinical teaching, attention to teaching method theoretical teaching, the improvement of the educational environment, psychological state of students is particularly important for stress and role of teacher [5]. Many variables, such as the relationship between teachers, staff, size and volume of topics, and clinical pressures affect the quality of clinical education. Therefore, students experience an environment full of stress and mental tensions that can be effective in their future careers [6].

In clinical education, teacher and student interact with one another as partners and colleagues. Student, clinical teacher and patient create three sides of an educational triangle, and as a result of the interaction between these three groups in the clinical environment, learning will be achieved [7]. Many studies on clinical education in Iran and around the world have been conducted with different approaches that illustrate the complexities of clinical education in intensive care units in the nursing field. Therefore, in this study, we tried to evaluate the problems and barriers of clinical education in the intensive care unit with a systematic look, so that, in future a model could be developed to correct the present situation [8].

## Materials and Methods

The research method is qualitative with the approach of phenomenology. Data collection through the semi-structured interviewing method in the environment of this research which includes educational hospitals of Mashhad university of medical sciences and the research community of board members and nursing students who were selected by objective sampling from these groups. Sampling was performed to ensure data saturation. The interviews were recorded with the participants' consent and then were written word-for-word on paper. In this study, the researcher tried to further validate the findings using methods such as allocating sufficient time to collect data, getting help from two colleagues familiar with qualitative research at the codification and analysis stage, referring to participants to confirm findings by taking into account the four criteria of Guba and Lincoln for verifying the accuracy of the data (credibility,

confirm ability, transferability and dependability) [9,10]. Data extraction and analysis were in the form of qualitative content analysis and then data integration of data. At this stage, according to the data analysis method in integrated review studies, the text data are extracted and then research was coded based on the amount of response to the question and in the next step, the codes were categorized based on the degree of continuity, similarities or differences between them. Then, by continuous and repeated comparisons between classes, the classes were merged and the main classes were explained, and with the continuation of the process of comparison and identification of relations between classes, themes, or main themes were explained. Due to the complexity of this stage and a large amount of text data, in order to reduce bias or data loss, MAXQDA software is used to decode, categorize, integrate and combine text findings and final results are presented by explaining the final themes and a pattern of relationship between the findings [11-13]. It should be noted that while collecting data, the analysis was performed by registering field contacts and the resulting codes were merged into the interview codes. The local university ethics committee provided ethical approval and informed consent was obtained from the participants before inclusion. Ethical protocol number was rec. 1398.268.

## Findings

In this study, 10 faculty members and nursing instructors participated in the intensive care unit. Also, to clarify the different aspects of the topic, two interviews were conducted with 6 nursing students and 5 nurses working in intensive care unit. Data analysis initially resulted in the generation of 1457 codes. After reducing codes and revising classifications, 612 codes were obtained that were classified into three categories or main themes, and eight subcategories or sub-themes [14]. The main themes include the harmful factors of education in the intensive care unit, strategies of education in the intensive care unit and the potential for education in the intensive care unit. Also, the validity and accuracy of the data was confirmed by the four criteria of Lincoln and Guba (Table 1).

Main categories	Subcategories
Harmful factors of education in intensive care unit	Factors related to three pillars of clinical education (patient, student, instructor)
	Factors related to management of intensive care unit
	Factors related to educational environment
Strategies of education in the intensive care unit	Preliminary strategies
	Process strategies
	Supplementary strategies
Educational potential in the intensive care unit	Individual potential
	Group potential

**Table 1.** Main and sub-categories of study theme.

Each of main themes with an example of participants' phrases is as follows:

**First theme (harmful factors of education in intensive care unit):** In this study, findings related to participants' experiences regarding challenges and harmful factors of education in intensive

care unit include all causes of injury and difficulties caused by various conditions and areas of intensive care unit education process that affect the education of nursing students [15]. This category was divided into three subcategories including factors related to three pillars of clinical education (patient, student and

instructor), factors related to how to manage intensive care unit and factors related to the educational environment.

Factors related to triple pillars of education are those categories of injuries and challenges that main pillars in clinical education are somehow involved in their creation, *i.e.* patient, student, instructor and the participants in the study consider them as obstacles to implement the training process in the intensive care unit [16].

When I arrived and saw patient in such condition and various devices blowing siren, I did not know what to do, so I was afraid that I would touch wrong things, even when the doctor asked me to help him while I didn't know exactly what to do, my hand was shaking me and I was feeling bad [17]. The rational thing to do is to focus on training, but you see that we are moving towards research and we are moving away from education because the level of education is not tangible. If you teach three hours today, you will not gain anything, but when you have three articles, you will become an associate professor [18].

I saw myself what one of my classmates did to a patient, and the instructor did not even notice. If the nurse did not realize that student would suction the patient's brain. A patient that due to her particular circumstances should not get nasal suction.

In the category of factors related to management of intensive care unit, harmful factors of the training process in intensive care unit that was associated with inadequate management of the education system exists. Management of educational system is a process during which a meaningful structure will be established between components and elements of a system, goals, and activities of participants will be determined with practical planning and necessary facilities will be provided. In this study, those factors were considered that were relevant to conditions and backgrounds of management of the system at group and university level [19].

Unfortunately, in the structure of the nursing organization, treatment is not coordinated with education. The reason is that faculty and clinical nursing instructors, like the medical group, are not the same and there are no meetings for coordination and awareness of new schedules. We need a lot of things in the unit that are not available. We have a few and limited resources and the patient should pay for consumable devices. The hospital cannot afford the budget.

In this study, the learning environment is students and instructors' perceptual and emotional graph of the surrounding environment. The harmful factors related to the educational environment are environmental conditions that in contributors' opinions interfere with training in the intensive care unit and disturb the teaching and learning process in the unit. One of the professors always says that nurses should not make a mistake at all, is it possible for someone to be perfect and without mistake? Does she think that students are here to learn and they may have some mistakes? That causes a great deal of psychological stress and not feeling good. There are so many expectations from the instructor, duties toward family, writing paper, make questions, book, research work and ... that is something over 24 hours of course, all these pressure and work is stressful for the person and makes environment unpleasant [20].

**The second theme (educational strategies in intensive care unit):** This theme includes all activities aimed at conducting an

intensive learning process in the intensive care unit that will help students to learn their courses. This category was divided into three subcategories: Initial strategies, process strategies and supplementary strategies.

Preliminary strategies in this study include all activities that are done at the start of training in intensive care unit and even before it, in order to provide the facilities and requirements for implementing a training process in intensive care unit.

At the beginning of the internship, I choose some topics for them and I tell them to study these chapters in advance. In fact, I tell them what is necessary for intensive care unit. Process strategies in this study include all activities that are conducted during intensive care unit internship with the goal of developing teaching and learning process for learners.

I teach depending on the type of care we give to the patient, for example, if the patient requires a specific medicine, we will talk about it. How to prescribe medicines and what are their side effects. Sometimes, I tell students to get catalogs of medicines and we read them together.

Further strategies in this study include all activities undertaken at the end of an internship or afterward with the aim of evaluating and validating learning. At the end of the internship, I talk to them to see what they have learned and what they should have learned, but they didn't. At the end of the course, I ask students to do a procedure and at the same time I evaluate them.

**Third theme (educational potential in intensive care unit):** Another structure of professors and instructors' experiences involved in this study was exposure to educational potential in the intensive care unit. Educational potential in ICU in this study involves the use of educational moments that are practical during intensive care education process. This theme or its main category was divided into two sub-themes or subcategories named individual potentials and group potentials.

To do the right thing in the right way, in addition to all the factors mentioned, there is a need for the individual potential to respond to the strategies, responsibilities and legal issues of nursing. Individual potential includes valuable features of an individual who prepares a person to learn and endure the challenges of intensive care unit. Some students, who know how to work with computers and cell phones, work with devices in a strange tenderness manner that staffs of the department are surprised. Well, in this digital age, if you want to be a successful professional, you have to learn very well and professionally about computers and English.

Group potentials involved in this study includes values and expectations that are not foreseen informal curriculum of training in intensive care unit, but during training, these values are transmitted to learners through interactions within unit and students will learn these concepts during their educational experiences. Our work is a model. Our behavior and appearance is also a model. That's why it's very important for me to look right when they are modeling us.

## Results and Discussion

The results of this study indicate that there were two positive and negative experiences from training in the Intensive Care Unit (ICU)

for participants in the study. On the one hand, facing a number of harmful and challenging factors for students and instructors that can influence implementation of clinical education in intensive care unit, and on the other hand, using a series of strategies to implement training process in intensive care unit that are results of years of instructors' experiences. Using these strategies, according to the participating instructors in the study, has increased the satisfaction of students from training in intensive care unit, as well as, carries out the feeling of success in holding this training method for them and it has been referred to as positive experiences.

Harmful factors of education in intensive care unit includes all harmful factors and problems arising from existing conditions in educational hospitals that clinical education in intensive care unit has been done, which has caused this process to be damaged and difficult. These factors were classified into three subcategories namely factors related to three main elements of clinical education (patient, student and instructor), factors related to management of intensive care unit and also factors related to the educational environment.

According to findings of this study, one of the factors related to the three pillars of clinical education (patient, student and instructor) that challenges training in intensive care unit, we can mention of care given in stressful and unpredictable situations, instructor and student' concern about causing harm, ethical conflicts and professional tensions while caring for a patient and lack of sufficient motivation for instructor and student. Clinical environment is an unpredictable situation and unlike the classroom environment, control is much less. Contrary to the present study, which mentions the unpredictable environment of intensive care unit as a challenge in clinical education, based on constructivist theory, it is recommended that learning situations be organized so that students face different perspectives on a subject, because unpredictable situations and confrontation with different situations in the clinical environment can help students to learn. In their view, teachers should attempt to enable learners to deal with the complex environment. As we know, clinical education is patient-centered teaching and patient-centered teaching is teaching of clinical skills using real patients. However, the nursing encounters the fact that patients are not educational devices and this change of attitude has been created in clinical instructors so that with regards to their ethical responsibilities during training in patients' bedside, they pay particular attention to dignity and grace of patients and they are always worried about the patients' rights. Hence, nursing society is involved with important ethical responsibilities.

Psychologists have emphasized the need to pay attention to motivation in education because of its effective relationships with learning new skills, strategies and behaviors. In this regard, Yoo, et al. in their study on reviewing motivation, communication skills and problem-solving in nursing students showed that high motivation level in students, according to skills they've learned will lead to their improvement.

Another challenging factor in the training of intensive care unit, in this study, is factors associated with management of unit; limitation in available resources, the gap in structure and assessment of the system and weakness of planning. Also, in the study of there are factors such as lack of teaching skills, existence of different levels of learners, lack of adequate motivation for training, high volume of tasks, unpredictability of the clinical environment, and this opinion

among teachers that younger assistants and teachers should be responsible for teaching, are mentioned as clinical education barriers.

The other harmful factor obtained from this study is factors related to the educational environment of the intensive care unit, in this regard we can mention the humiliating and stressful environment of the unit and lack of communication. In line with this study, other studies shown that the presence of high level of stress and anxiety during clinical education may have negative effects on students' clinical learning and clinical success and affect their proper functioning. Therefore, quick recognition of stressful events, evaluating the effects of stress on an individual and awareness of effective adaptive behaviors can help teachers to reduce the negative effects of stress. In addition, identifying existing problems in students' clinical education and taking action to remove and correct them will improve the achievement of educational goals and training of skilled people and improve the quality of care services. In the study of Mahdavi, et al. the most stressful factors of clinical education from the students' point of view is humiliating experiences such as teacher's warning in the presence of departmental staff and doctors. Also, in the area of interpersonal communication, lack of support from teachers for students had the highest degree of stress.

In this study, training strategies for intensive care unit include all activities aimed at conducting the educational process in intensive care unit that leads to learning courses by students. Participants' experiences, in this study, related to these strategies were categorized into three groups of preliminary, process and supplementary strategies.

Preliminary strategies include all activities that are initiated at the start of the intensive care unit training, and even before it, in order to elaborate facilities and requirements for conducting a training process in the intensive care unit. These strategies include program design, resource allocation and preparation. Preparing program includes the need for measurement, the design of objectives, content development and determination of content strategies. Allocating resources to educational resources, physical resources, human resources, time allocation and preparation also refers to inclusive preparation, patient, personnel and instructor. In this regard, Masjedi in their study suggest that educational managers and planners consider content and type of educational programs in different sectors by taking into account the impact of different teaching methods on learning.

Process strategies include activities that are performed during the implementation of the intensive care education to form the learning and learning process. These strategies include the design of the learning environment, forming interactions, fulfillment of expectations and the implementation of teaching methods. Masjedi, et al. in a study attempted to assess the impact of different teaching methods on the amount of learning in clinical units. They found that individual studies and outpatient clinics had the most impact on learning and journal club meetings had the least impact.

Supplementary strategies in this study include all activities done at the end of the internship or thereafter with the aim of evaluating and validating learning. These strategies include summarizing and evaluating. In their study, Gholami, et al. did not mention unique evaluation system for students as one of the corrective barriers to clinical education. In the study of Moghimiyani, et al.

that was conducted in order to compare the effect of direct and indirect monitoring on the anxiety of OSCE exam in nursing students, it was found that indirect monitoring in evaluation could reduce test anxiety. In this regard, it is advisable to pay more attention to this in the assessment of medical science curricula.

We discussed harmful factors and training strategies in the intensive care unit, but we should not ignore the potential of educability in the intensive care unit. Educational potential can be individual or group.

Individual potential includes technical intelligence and comprehensive analytical intelligence. Technological and analytical intelligence are two of the most valuable qualities for learning and meeting challenges of the intensive care unit. Based on the findings, students who are more capable in information technology and in general skills have a better performance in clinical education in the intensive care unit. In this regard, Bazrafkan, et al. studied factors affecting learning in the twenty-first century, which illustrates this fact. The findings of this study indicate that the six factors involved in using computers in education, development of virtual learning, use of mobile in communication, enjoy e-learning environments, the emphasis of learning on creating attitudes and instructor role as a facilitator have the greatest impact on learning in the twenty-first century.

Group or group potentials are profits and benefits that will obtain from teamwork in a clinical education environment, including professionalism, professional ethics and enduring career difficulties. Legal and ethical issues are taught theoretically to learners in the classroom, but practical training occurs while facing with patients, which reflects the role of the instructor in teaching ethical and communicational skills. According to Right, et al. awareness of being a model, leads instructors to look for situations in which they can put their attitudes, behaviors and skills in a position to be modeled, in order to be able to train professionalism (Wright and Carrese,). Also, empathy and teamwork not only bring about synergy and increase motivation in learners but also provide the potential for tolerating the difficult conditions of the intensive care unit. In this regard, C Brooke, et al. in their study emphasize the importance of teamwork and group training.

## Conclusion

Education in the ICU ward is a valuable opportunity for the learners. They learn not only the clinical aspects of patient care but also appropriate behavior and relationship of the treatment team in critically ill patient care. Negative experiences indicate the impact of destructive factors on the quality of education in the ICU wards. On the other hand, awareness of these factors and using appropriate strategies can contribute to and their application on the patients' bed, encouragement of the students to more actively attending the ICU and justification of the importance of learning clinical skills and improvement of this type of clinical education. The instructors' awareness about the clinical education methodology competencies seems to be necessary.

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