

## Practical Training Barriers Among Nursing Students In Critical Care Settings

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### Abstract

**Background:** There are many barriers experienced by nursing students and affect the quality of practical training and also affect students' satisfaction about their training. **Aim:** This study was conducted to assess practical training barriers among nursing students in critical care settings **Method:** This study was conducted in Central laboratory at Faculty of Nursing Ain Shams University and Critical care settings at Ain Shams University hospital. **Sample:** Purposive sample of 70 2<sup>nd</sup> year students were recruited in the present study. **Tools:** 1) Student Interview Questionnaire.2) Student Satisfaction Level Questionnaire. **Results:** The present study revealed that students' practical learning is affected by many barriers including barriers related to communication between student and faculty staff and nursing staff working at critical care units, lack of training opportunities, lack of equipment and supplies, unavailability of simulators at skills lab and presence of theory practice gap. Also, more than half of studied students are satisfied with practical training at critical care settings. **Conclusion:** The results of this study concluded that there were many barriers facing students during clinical training at critical care (at hospital and faculty), also students have a moderate satisfactory level about their practical training. **Recommendations:** Further studies should be designed to overcome the barriers that have negative effect on clinical training quality and students' satisfaction about their practical training at critical care units.

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**Key words:** practical training, barriers, critical care settings.

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### INTRODUCTION

Practicing in real clinical settings is critical for student nurses to cultivate their competence and confidence to face the future challenges of professional practice and to integrate well into clinical settings (Christiansen & Bell, 2010).

Clinical practice serves a variety of functions, including applying and connecting theory and practice, sustaining students' professional identity and their motivation to be health care professionals, improving their techniques, as well as enhancing their critical thinking and problem-solving ability (Baglin & Rugg, 2010).

Even though clinical practice has significant benefits for nursing students, they are still stressed by new experiences, such as using high tech medical equipment, meeting the needs of patients and families, and developing relationships with other health care professionals (Chan, So, & Fong, 2009).

One of the most critical experiences for student nurses is their exposure to patients in the clinical. It is where they encounter the human side of nursing. From an educational perspective, the clinical placement is the venue where skills, knowledge and attitudes developed in the theoretical part of the curriculum

are applied, developed and integrated (Newton et al., 2010).

Sharif (2010) defines the clinical practice as an area that allows students to have direct experience with the real world of nursing, to practice the clinical skills required for the job, to learn about general nursing routines and to learn about the responsibility of the nurse that will hone and improve their skills in preparation to becoming a registered nurse.

#### **Significance of the study:**

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The student performance (academic achievement) plays an important role in producing the best quality graduates who will become manpower for the country thus responsible for the country's economic and social development (Ali et.al,2009).

Academic Success of graduate student will be enhanced if the optimal related barriers are low (kernan 2011).

Student will become a competent future nurse so we must concerned with challenges and barriers facing them during their practical training to improve their education level.

#### **Aim of the study:**

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##### **The study aims to:**

This study aims to assess practical training barriers among nursing students in critical care settings which will be achieved through:-

1-Assessment of practical training barriers facing nursing students during laboratory and hospital training.

2-Assessment of factors affecting student's satisfaction with their practical training at critical care settings.

##### **Research question:**

This study will answer the following questions:

- What are the practical training barriers facing nursing students during laboratory and hospital training?
- What are factors affecting student's satisfaction with their practical training at critical care settings?

#### **Subjects and Methods**

##### **A-Research design:**

A descriptive exploratory quantitative design was utilized to develop a better understanding of problem. It often accomplished by using descriptive statistics.

##### **B- Research Setting:**

This study was conducted in Central laboratory at Faculty of Nursing Ain Shams University and Critical care settings at Ain Shams University hospital

##### **C- Subjects:**

A purposive sample of 70 second year students enrolled in academic year (2018-2019) at Faculty of Nursing Ain Shams University.

##### **Inclusion criteria:**

1. 2<sup>nd</sup> year students form both gender.
2. Students who had finished their practical training at critical care settings.
3. Accepting to participate in the study.

##### **D-Tools for data collection:**

The study data was collected through the following tools:

### student Interview Questionnaire (Appendix III):

It is a self-administered questionnaire used to assess practical training barriers facing students. It was developed by the researcher in an Arabic language based on review of relevant recent related literatures (*Berg & Glenda 2004; Ali, 2012; Babenko, et al., 2012; Chaun & Barnett, 2012; Moghimi et al., 2014 and Baraz, et al., 2015*) It includes:

#### A) The first part:

It is concerned with nurses' personal demographic characteristics which included age, gender, marital status, residence, qualification, receiving practical training at critical care units before and attendance of any training courses related to critical care.

#### The second part:

It includes (38 questions) to assess barriers to practical training regarding the non-human element.

#### ❖ Regarding scoring system:

Students' answers are including satisfied and unsatisfied. All the unsatisfied elements are considered practical training barriers.

### Student Satisfaction Level Questionnaire (Appendix III):

Developed by the researcher in an Arabic language based on review of relevant recent related literatures (*Robinson, 2009; Borjian, et al., 2011; Edraki, Rambod & Abdoli, 2011; Osier, 2013; Hakim, 2014; Juliana, Steve, Venise & Jascinth, 2015; Papastavrou, Dimitriadou, Tsangari, & Andreou, 2016*) and completed by students to assess their satisfaction level during practical training at critical care settings. It includes:

### Trainer role pre-practical training (3 questions).

**Part 2: Trainer role during practical training at the skills lab (13 questions).**

**Part 3: Trainer role during the practical training at the critical care settings (9 questions).**

**Part 4: Trainer role after practical training (5 questions).**

**Part 5: Trainer role during student evaluation at the end of practical training (10 questions).**

#### ❖ Scoring system:

The total score was 80 marks. Every question was given "Yes" = 2, "Sometimes" = 1, and "No" = 0.

The score was categorized into low, moderate and high level of satisfaction as follows:

High level of satisfaction  $\geq 80\%$

Moderate level of satisfaction  $60\% - < 80\%$

Low level of satisfaction  $< 60$

## II. Operational design:

The operational design included preparatory phase, ethical considerations, validity and reliability, pilot study, field work and limitation of the study.

### - Preparatory phase:

It included reviewing of relevant literature, and theoretical knowledge of various aspects of the study using books, articles, internet, periodicals and journals to develop data collection tools.

### - Pilot study

Before starting the actual study, a pilot study was carried out on 10% from the study students (7 students) who met the inclusion criteria to test the applicability, clarity and efficiency of the tools, as well as to estimate the time

needed to answer it. The modifications were done for the used tools according to the results of pilot study then the final form were developed. Data obtained was excluded from the study and the pilot study's sample was replaced.

**- Validity and reliability:**

**Testing validity** of the proposed tools by using face and content validity. Face validity aimed at inspecting the items to determine whether the tools measure what supposed to measure. Content validity was conducted to determine whether the content of the tools cover the aim of the study. This stage developed by a jury of 7 experts, three of them professors and two assistant and two of them lecturers of medical surgical nursing at faculty of nursing, Ain Shams university.

The experts reviewed the tools for clarity, relevance, comprehensiveness, simplicity and applicability; minor modification was done.

**Testing reliability** of proposed tools was done statistically by alpha Cronbach test for the following:

Student Interview questionnaire = 0.689  
Student Satisfaction Level Questionnaire = 0.815

**- Field work:**

Practical training for 2<sup>nd</sup> year nursing students at medical surgical department included five clinical areas (medicine, general surgery, orthopedic surgery, neurological surgery and critical care).

- Students were divided into five groups and make a rotation at all clinical areas all over the academic year.
- The study sample included two groups 35 students from group 1 and

35 students from group 2 at the end of their practical training at the critical care area.

- The purpose of the study was simply explained to the students who agreed to participate in the study prior to any data collection.
- The actual fieldwork started from 11<sup>th</sup> November 2018 for group 1 and lasted for 7 weeks and for group 2 started from 11<sup>th</sup> February 2019 and lasted for 7 weeks.
- 5 students were assessed every week.
- The tools for data collection were filled in by students in the presence of the researcher.
- Assessment of practical training barriers was done using student interview questionnaire.
- Assessment of student satisfaction level was done using student satisfaction /questionnaire.

**III. Administrative Design:**

To carry out the study, an official permission was obtained from the Dean of Faculty of Nursing, Ain Shams University. The students included in the study were informed about aim of the study. An oral permission was obtained from them, and confidentiality was assured.

**IV. Ethical Considerations:**

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Ethical approval was obtained from Scientific Ethical Committee of the Faculty of Nursing of Ain Shams University before starting the study. The purpose of the study was explained to the students and oral consent was obtained from them to participant in this study. They assured that anonymity, confidentiality and right to withdraw from the study at any time would be guaranteed. Ethics, values, culture and beliefs were respected.

### V. Statistical Design:

The collected data were organized, analyzed using appropriate statistical significant tests. The data were collected and coded. Then, the data were analyzed with the program (the statistical package for social science) (SPSS) under windows version 11.0.1. Number and percentage for qualitative variable were done. For relation between variables, fisher's exact test and paired t-test were used. Also, alpha Cronbach test was used to test reliability of tools. Test of significance was used and regarding significance of the result, the observed differences and associations were considered as follows: **Non significant (NS)**  $p > 0.05$ , **Significant (S)**  $p < 0.05$ , **Highly significant (HS)**  $p < 0.01$

### Results:

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**Table (1):** shows the student's age, the result revealed that, 54.3% were 20 years or less than 21 years old with mean  $\pm$  SD  $20.3 \pm 1.1$ . While 61.4% of the students were females. As regards to marital status 92.9% of studied students were single and 51.4% of them live in a rural areas, while 64.3% of studied students graduated from high school. Also the result revealed that 55.7% of studied students don't receive practical training in critical care units in a hospital, also 62.9% of them didn't attend any training courses related to critical care.

**Table (2):** shows that, 88.6% of studied students find that the trainer initiate confidence among his students and has the Skills to use all available resources

efficiently. While 85.7% of students find that the trainer has the skill that make student feel safe during the practical training. Also 84.3% and 62.8% of student find that trainer encourages excellent students and supports weak students respectively.

**Table (3):** Shows that, 65.7% of studied students feeling stressed while dealing with the critically ill patients. Also 57.1% of them fear of infection during care of patients at critical care units while 24.3% of studied students have difficulty communicating with critically ill patients.

**Table (4):** Shows that, 70% of studied students find that nursing staff members working in the critical care units are neither skilled nor experienced, 57.1% of them find that nurses don't help them to get information that they need about patients within the critical care units. While 50% find that nurses don't help them during practical training in critical care units.

**Table (5):** shows that, 68.6% of studied students find that there is a shortage of supplies in critical care settings. While 18.6% of studied students find that personal protective equipment is not available within critical care settings at the hospital.

**Table (6):** reveals that, there was highly statistical significant negative Correlation between total barriers and students' satisfaction level about practical training about critical care (in the hospital and skills lab) ( $p > 0.05$ ).

**Table (1):** Number and percentage distribution of the studied students according to their demographic characteristics. (N=70).

| Demographic Characteristics of the students.                        |  | No | %    |
|---|--|----|------|
| Age   |  |    |      |
| 18 - <19 years.   |  | 12 | 17.1 |
| 20 - <21 years.   |  | 38 | 54.3 |
| ≥ 21 years.   |  | 20 | 28.6 |
| $\bar{x}$ 20.3 ± 1.1  |  |    |      |
| Gender  |  |    |      |
| Male  |  | 27 | 38.6 |
| Female  |  | 43 | 61.4 |
| Marital Status  |  |    |      |
| Single  |  | 65 | 92.9 |
| Married   |  | 5  | 7.1  |
| Residence   |  |    |      |
| Rural   |  | 36 | 51.4 |
| Urban   |  | 34 | 48.6 |
| Qualifications before joining the faculty of nursing                |  |    |      |
| High School   |  | 45 | 64.3 |
| Technical Institute of Nursing                                      |  | 25 | 35.7 |
| Receiving practical training in critical care units at any hospital |  |    |      |
| Yes   |  | 31 | 44.3 |
| No  |  | 39 | 55.7 |
| Attendance of any training courses related to critical care         |  |    |      |
| Yes   |  | 26 | 37.1 |
| No  |  | 44 | 62.9 |

**Table (2):** Number and percentage distribution of the studied students' opinion about the characteristics of the trainer. (N=70).

| Items  | No |     | Sometime |      | Yes |      |
|--|----|-----|----------|------|-----|------|
|  | N  | %   | N        | %    | N   | %    |
| Has the desire for training.   | 5  | 7.1 | 10       | 14.3 | 55  | 78.6 |
| Looked professional.   | 3  | 4.3 | 20       | 28.6 | 47  | 67.1 |
| Able to interact professionally with different patterns of students.                             | 2  | 2.9 | 9        | 12.9 | 59  | 84.2 |
| Able to interact professionally with different patterns of hospital staff.                       | 4  | 5.7 | 14       | 20.0 | 52  | 74.3 |
| Able to interact professionally with different patterns of technicians working in the skill lab. | 2  | 2.9 | 19       | 27.1 | 49  | 70.0 |
| Able to interact professionally with different patterns of faculty members.                      | 4  | 5.7 | 20       | 28.6 | 46  | 65.7 |
| Has the Skills to use all the available resources efficiently.                                   | 1  | 1.4 | 7        | 10.0 | 62  | 88.6 |
| Initiate confidence among his students.  | 3  | 4.3 | 5        | 7.1  | 62  | 88.6 |
| Let the student feel safe during practical training.   | 1  | 1.4 | 9        | 12.9 | 60  | 85.7 |
| Deals with students fairly.  | 2  | 2.9 | 14       | 20.0 | 54  | 77.1 |
| Deals with students in flexible way.   | 1  | 1.4 | 26       | 37.2 | 43  | 61.4 |
| Keep in mind individual differences between students.  | 3  | 4.3 | 27       | 38.6 | 40  | 57.1 |
| Encourages excellent students.   | 2  | 2.9 | 9        | 12.9 | 59  | 84.3 |
| Supports weak students.  | 3  | 4.3 | 23       | 32.9 | 44  | 62.8 |

**Table (3):** Number and percentage distribution of the studied students regarding their feeling while dealing with critically ill patient. (N=70)

| Items  | No |      | Sometime |      | Yes |      |
|--|----|------|----------|------|-----|------|
|  | N  | %    | N        | %    | N   | %    |
| I feel stressed while dealing with the critically ill patients.        | 4  | 5.7  | 20       | 28.6 | 46  | 65.7 |
| I have difficulty in communicating with the critically ill patients.   | 17 | 24.3 | 26       | 37.1 | 27  | 38.6 |
| I fear of infection during care of patients in the critical care units | 9  | 12.9 | 21       | 30   | 40  | 57.1 |
| Prior to give care to the patient, I should get his approval           | 30 | 42.9 | 2        | 2.9  | 38  | 54.2 |

**Table (4):** Number and percentage distribution of the studied students' opinions regarding nursing staff members working in the critical care units. (N=70).

| Items  | No |      | Sometime |      | Yes |      |
|--|----|------|----------|------|-----|------|
|  | N  | %    | N        | %    | N   | %    |
| They are skilled and experienced   | 49 | 70.0 | 1        | 1.4  | 20  | 28.6 |
| Understand the student's role within the critical care units   | 20 | 28.6 | 20       | 28.6 | 30  | 42.8 |
| Help the student to get information about patients within the critical care units                      | 40 | 57.1 | 21       | 30   | 9   | 12.9 |
| Give help to the student during practical training in critical care unit                               | 35 | 50.0 | 5        | 7.1  | 30  | 42.9 |
| Give the student the opportunity to deal directly with critically ill patients under their supervision | 13 | 18.6 | 31       | 44.3 | 26  | 37.1 |

**Table (5):** Number and percentage distribution of the students' opinion regarding equipment and supplies within critical care units at hospital. (N=70)

| Items  | No |      | Sometime |      | Yes |      |
|--|----|------|----------|------|-----|------|
|  | N  | %    | N        | %    | N   | %    |
| There is a shortage of supplies in critical care settings                                | 6  | 8.6  | 16       | 22.8 | 48  | 68.6 |
| Personal protective equipment is available within critical care settings at the hospital | 13 | 18.6 | 27       | 38.5 | 30  | 42.9 |

**Table (6):** Correlation between total barriers and the students' satisfaction level regarding practical training about critical care (in the hospital and skills lab) (N=70).

| Item           | Total satisfaction |         |
|----------------|--------------------|---------|
|                | Calculated r       | P value |
| Total barriers | - 0.604            | .000**  |

\*\*≤ 0.001 highly significant

## Discussion

Regarding gender, the study result revealed that about More than three fifth of the studied students were females. this may be due to females have the greater interest in studying nursing in Egypt .This result supported by **(Dehghani, Orang, Abdollahyfar, Parviniyan Nasab, Vejdani (2014) )** Who study" Barriers to patient education in clinical care viewpoints of nurses" who found that four fifth of the studied students were females.

Regarding marital status, the study result revealed that Most of the study students were Single. This result supported by Juliana, Steve, **Venise & Jascinth. (2015)** who study" Factors that influence the clinical learning experience of nursing students at a Caribbean school of nursing" who found that more than four fifth of the studied students were single.

Regarding Qualifications before joining the faculty of nursing, the study result revealed that more than three fifth was at high school. This result inconsistent with **(Gloria , Oyetunde & Ali (2015)** who study" Perception of Nursing Students and Preceptors about Factors Influencing the Clinical Performance of Nursing Students." who found that more than three fifth was of participants were diploma holders.

Regarding receiving a practical training in critical care units at any hospital, the study result revealed that more than half don't receiving a practical training in critical care units. This may be due to the greater part of students don't have a license to practice nursing profession, so hospitals refuse to join them in training. This result supported by **(Heidari & Norouzadeh (2015)** who study" Nursing students perspectives on

clinical education." who found that about more than three fifth don't have previous work or training experience. Regarding total nurses' knowledge of bariatric surgery, the results of the current study indicated that more than two third of the studied nurses had unsatisfactory knowledge regarding knowledge of bariatric surgery. This may be attributed to they hadn't received any specific education related to bariatric surgery and wasn't included in their undergraduate curriculum of nursing education.

Regarding to students' opinion about the characteristics of the trainer, the study result revealed that the majority of students found that instructor initiate confidence among his students. This may be due working closely with clinical teachers can foster students' confidence and help them find meaning in their practice learning experience and supportive environments facilitate a process of socialization where anxiety lessens, confidence increases and learning is enhanced. This result supported by **(Bradbury-Jones, Irvine, & Sambrook (2010)** who study" Empowerment of nursing students in clinical practice: spheres of influence." who found that about more than three fifth of the trainers were initiate confidence among their students..

Regarding students found that the trainer has the skill that make student feel safe during the practical training; the study result revealed that the majority has the Skills that make student feel safe during the practical training. This result inconsistent with **(Cheraghi, Salsali &Ahmadi (2007)** who study" Iranian nurses' perceptions of theoretical knowledge transfer into clinical practice: A grounded theory approach " who found that more than three fifth of the trainer

didn't has the skills that make student feel safe during the practical training.

Regarding students' feeling while dealing with critically ill patient, students are feeling stressed while dealing with critically ill patients; the study result revealed that near two third of the students feel stress while dealing with critically ill patients. This may be due to lack of clinical experience, unfamiliar areas, difficult patients, fear of making mistakes and being evaluated by faculty members. This result supported by **Chesser-Smyth. (2005)** who study " The lived experiences of general student nurses on their first clinical placement: a phenomenological study. " Who found that more than two third the student feel stress while dealing with patients at clinical settings.

Regarding the fear of infection during practical training at critical care units; the study result revealed that more than half of the student's fear of infection during practical training at critical care units. This may be due to the critical care units is a major source of infectious diseases in the hospital and the most of the students have a lack of experience for how to deal with these diseases.

Regarding students' opinions regarding nursing staff members working in the critical care units the students found that nursing staff members working in critical care units are neither skilled nor experienced; the study result revealed that more than two third of the student's find that nursing staff members working in critical care units are neither skilled nor experienced. This may related to most of them are technical or diploma nurse and unavailability of in-service education programs.

This result supported by **Mabuda, Potgieter& Alberts. (2008)** which found

that more than half of nurses not have skills or experiences for clinical training. Concerning the results of the current study, it was found that, more than half of the studied nurses had unsatisfactory knowledge regarding immediate post-operative care as well as late post-operative care. This may be due to that the nurses didn't have enough information, training courses about it and absence of standard about nursing care related to immediate and late post- operative care.

Regarding the nurses don't help the student to get information about patients within the critical care units; the study result revealed that more than half of the nurses don't help the student to get information about patients within the critical care units. This may be due shortage in nursing staff and increased work load, so nurses had no option but to direct their energy to patient's needs.

This result supported by **Moghimi ,et al. (2014)** who study " Obstacles of clinical education and strategies for the improvement of quality of education in Yasuj university of medical sciences " Who found that more than three fifth of the nurses don't provide students with the information they need about patients within units.

Concerning the students' opinion regarding equipment and supplies within critical care units at hospital, the current study revealed that two thirds of students found that there is a shortage of supplies in critical care settings. Also less than one fifth of students found that personal protective equipment is not available within critical care settings at the hospital.

This finding is in congruence with a study done by **Flott & Linden. (2015)** entitled for "The clinical learning

environment in nursing education: A concept analysis" which confirmed that the lack of equipment and supplies was identified by studied students as a main barrier to clinical training.

level in relation to level of practical performance and nurses' educational level are affecting the

### **Conclusion**

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The results of this study concluded that, the practical training barriers at the critical care settings were lack of students' training experience regarding care of critically ill patient, overcrowding of the clinical settings, lack of equipment and supplies, ineffective communication with the nursing staff, students' stress, lack of training skills of the nursing staff, shortage in the nursing staff, procedure book wasn't written in a simple and easy language and the gap between theoretical curriculum and practical application.

### **Recommendations**

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- The Faculty should include summer training for students in the curriculum.
- Provide a supportive learning environment through providing simulators at the critical care skills lab.
- Cooperation between college and the hospital should be planned prior to go to the clinical area.
- Connecting the theoretical curriculum and practical application
- Further studies should be designed to overcome barriers of practical training to improve students' training and enhance their satisfaction.

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