

RESEARCH ARTICLE

Clinical Training Challenges Facing Undergraduate Nursing Students in Intensive Care Units

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Abstract

Background: Clinical training plays an important role in influencing students learning behaviors and acquisition of nursing clinical competencies. Clinical training as an essential part of nursing education helps to transform theoretical knowledge into clinical practice.

Aim of the study: was to discover the clinical training challenges facing undergraduate nursing students in intensive care units.

Research design: A descriptive exploratory design was utilized to conduct this study.

Setting: This study was conducted at faculty of Nursing, Helwan University.

Subject: A purposive sample of 240 students of the second year students enrolled in academic year (2021-2022).

Tools: Two tools were used:

Tool I: Student Interviewing Questionnaire. **Tool II:** Modified Student Satisfaction Questionnaire.

Result: The current study findings concluded that 67.5% of studied nursing students not perceived challenges, while 22.5% of them perceived challenges regarding clinical training in intensive care units, also 62.1% of the studied nursing students had a high level of satisfaction and 22.1% of them had low level of satisfaction regarding clinical training in the intensive care units.

Conclusion: There was a highly statistically negative correlation between total satisfaction and total challenges regarding clinical training in intensive care units among the studied nursing students.

Recommendations: The clinical evaluation should be performed actually on the patients in the hospital and being supportive to eliminate the students fear of infection. Additionally, providing notes about their performance. Moreover, Giving appropriate time to answer oral examination and provide written instruction about how to deal with the device at intensive care units.

Introduction

Intensive care units (ICUs) are specialist hospital wards that provide treatment and monitoring for patients who are very ill. They're staffed with specially trained healthcare professionals and contain sophisticated monitoring equipment. ICUs are also sometimes called intensive therapy units (ITUs) (*National Health Services (NHS), 2023*).

Critical care nurses must acquire advanced practical skills, competencies, and capacities to provide safe and high-quality care for their ICU patients. Nursing professionalism is dependent on the preparation of nursing students who have recently graduated for a necessary work environment and care practices that take shape throughout nursing education (*Mohamed & Elbiaa, 2022*).

Nursing education involves provision of practical training with the purpose to prepare students for future duties as nursing care professionals. Nursing discipline in the 21st century requires competent nurses who have the capacity to make best clinical judgments and think critically in order to solve daily health care complexities based on evidenced based practice. Nursing as a practice based profession, requires clinical learning environment to equip nursing students with professional abilities by combining cognitive, psychomotor, affective skills and coaching the students (*Berhe & Gebretensaye, 2021*).

clinical learning environment is referred as a complex atmosphere which involve the staff, patients, and the nurse educators that surrounds the learners and affects nursing student's career either by improving or hindering their performance. It is the first site for nursing students to get real life experience which help them in their upcoming profession. Clinical learning objectives are included to empower nursing students to develop clinical competencies and socialize with the profession. These events occur within a complex and dynamic learning clinical environment (*Agyekum, 2022*).

Key words:
Clinical Training,
Challenges, Intensive
Care Units, Undergraduate
Nursing Students

DOI:
10.5455/jcmr.2023.14.05.25

2. Assessing of factors affecting undergraduate nursing students' satisfaction during their clinical training in ICUs.

Research Question:

The objectives of the study were achieved through answering the following questions:

1. What is the clinical training challenges facing undergraduate nursing students in intensive care units?
2. What are the factors affecting undergraduate nursing students' satisfaction during their clinical training in ICUs?

Subject and Methods

I) Technical item:

The technical item includes research design, setting, subject and tools for data collection.

I. Research design:

A descriptive exploratory research design was utilized to conduct this study, descriptive research design is a type of research design that aims to systematically obtain information to describe phenomenon, situation or population. Exploratory research is a methodology approach that investigates research question that have not previously been studied in depth(Thomas, et al, 2022).

II. Setting

This study was conducted at Faculty of Nursing Helwan University, one of largest educational universities in Egypt, and receives nursing students from both gender who graduated from various educational background (secondary High School, Technical Nursing Institute, and international students). It consists of four floors and contains 3 simulation laps and various nursing departments including (Adult HealthNursing, obstetric and pediatric Health nursing, psychiatric Nursing and Nursing Administration). The clinical training was conducted at several settings including intensive care units.

III. Subject

1. Sample size:

Purposive sample of second year nursing students was used to calculate the sample size; the total number was (650 students). Representative sample of (37%) of total number of nursing students from both gender who accepted to participate in the study were included. So that, the study sample was (240) nursing students. The following formula was used to calculate the total number of subjects and the investigator depended on the following equation to calculate the sample size.

$$N = \frac{p*(1-p)*(Z\alpha / d)^2}{}$$

N=population size

Z α = The standard score corresponding to the level of significance at 95% (standard value of 1.96)

P=Property availability and neutral ratio = 0.50.

d= The error rate is equal to 0.05

2. Students who finished their clinical training at intensive care units.
3. Accepting to participate in the study.

Tools for data collection

Two tools were used to collect the data of the study:

Tool (I) Student Interviewing Questionnaire:

Clinical teaching and learning are integral components of nursing education. Most clinical teaching and learning activities occur in the clinical setting where theory is translated into practice in healthcare providing institutions. Although the clinical environment is a significant place to apply the theories learned in the class room, there remains a gap in the magnitude of applying the theory to practice. The effective application of theory to practice depends on many factors, including creating learning opportunities for students and support by preceptors (Mazionienė, et al., 2019).

Significance of the study

Constructive clinical training plays an important role in influencing students learning behaviors and acquisition of nursing clinical competencies. Clinical training as an essential part of nursing education helps to transform theoretical knowledge into clinical practice (Kalyani et al., 2019).

As regard Abdel-Samea et al., (2020) who found that there is a lack of proper integration of theory and clinical practice, students accompaniment and clinical supervision. There are four quality attributes of a clinical learning environment which are physical environment, interpersonal and psychosocial aspects, organizational culture, and clinical teaching components. There is a complex interaction between these factors in such a way that students learning may be positively or negatively affected.

Factors such as motivated nursing staff, positive and supportive ward climate, and positive relationships between students and nursing staff have been documented to positively influence clinical learning. It is further documented that rigid ward routines, lack of team spirit and commitment to teaching nursing students, low staff morale, and inadequate supervision of students have a negative influence on the quality of students learning(Jacob et al., 2022).In Egypt, a study has found that 68.6% of Studied nursing students reported a shortage of supplies in critical care Settings.(Mohamed et al., 2018).So, the aim of the study was to discover the clinical training challenges facing undergraduate nursing students in intensive care units.

Aim of the study

The aim of the study was to discover the clinical training challenges facing undergraduate nursing students in intensive care units through:

1. Exploring the challenges facing undergraduate nursing students during their clinical training.

2. Type of the sample:

Purposive sample of the second year students enrolled in academic year (2021-2022) at Faculty of Nursing, Helwan University was involved in the study.

3. Inclusion criteria

1. Second year students of both genders

knowledge of various aspects of the study using books/articles, internet, periodicals and magazines to develop tools for data collection.

B-Validity:

Content validity was conducted to determine whether or not the instrument measures what it designed to measure. The developed tool was formulated and submitted to five experts in Adult health nursing department at Helwan university four assistant professors and one Lecturer. The experts revised for clarification, relevance, applicability. Modifications were made based on experts' comments and recommendations, including rephrasing some sentences, re-arrangement of some sentences and addition of a few questions.

Reliability:

Reliability of the developed tool was tested to determine the extent to which the questionnaire validity and the extent to which the items measure the same concept and the extent to which the items are correlated with each other, the reliability rate for the study tools were assessed using coefficient cornbach's alpha test.

C. Pilot study:

The pilot study was carried out on 10% of the students involved in the study (24) to examine the clarity of questions and time needed to complete the study tools. Modifications were made based on the pilot study, this sample was excluded from the total study sample.

III. Administrative items:

After explanation of the study aim and objectives, an official permission was obtained from the Dean of faculty of Nursing-Helwan University and the head of Medical Surgical Nursing department asking for cooperation and permission to conduct the study.

Ethical consideration:

An official permission to conduct the proposed study was obtained from the Scientific Research Ethics Committee - Faculty of Nursing Helwan University. The ethical considerations were included explaining the purpose and nature of the study, stating the possibility to withdraw at any time, confidentiality of the information where it was not accessed by any other party without taking permission of the participants. Ethics, values, culture and beliefs were respected. Participation in the study was voluntary and subjects were given complete full information about the study and their role before signing the informed consent.

IV .Statistical item:

Data entry and analysis were performed using SPSS statistical package version 26. Categorical variable were expressed as numbers and percentages, while continuous variable were expressed as (mean±SD). Pearson correlation was done to measure correlation between quantitative variables. For all tests, a two-tailed P-value ≤ 0.05 was considered statistically, P-value ≤ 0.05 was considered statistically significant, P-values ≤ 0.01 was considered highly statistically significant. While p-value >0.05 was considered not significant.

Results:

Table (1): illustrates that (72.5%) of the studied nursing students was age between 20 and 22 years with a mean ± SD is 19.23±1.35. Also, (85.8%) of the studied nursing students were female with a female to male ratio

It was adapted from *Mohamed et al., (2018)* and it was included the following two parts.

Part I: A Structured Interview Questionnaire to assess student's general characteristics. It included demographic characteristics such as (age, gender, marital status, qualifications before joining the faculty, residence and attendance any training courses related to intensive care units).

Part II: The Clinical Training Challenges Facing undergraduate Nursing Students in Intensive Care Units.

It was filled by the second year students to explore Clinical Training Challenges Facing undergraduate Nursing Students in Intensive Care Units and consisted the following:

The first part: It was included of (31) statements it was used to assess clinical training challenges regarding to human element which divided as the following: (13) statements for characteristics of the trainer, (7) statements for ability of trainer to communicate, (2) statements for the ability of the trainer to apply skills within intensive care units, (4) statements for student's feelings while dealing with critically ill patients in intensive care units and (5) statements for student's opinions about nursing staff members working in intensive care units.

The Second part: it was included of (22) statements used to assess clinical training challenges to non-human element which consisted of (6) statements for training environment regarding intensive care settings, (2) statements for equipment and supplies at intensive care settings, (6) statements for procedure book and (8) statements for regulations concerning the clinical training of the (medical-surgical) department.

Scoring system:

Answers were scored as (3) for each not perceived challenge answer, (2) grades given for sometimes Answers and (1) grade for perceived challenges answers, the total grade was (159 score), total scoring system was calculated as follow:

- Not perceived challenges less than 60%
- Some-times perceived challenges 60% < 75%
- Perceived challenges ≥ 75%

Tool II: Modified Student Satisfaction Questionnaire:

It was Adapted from *Mohamed et al, 2018* to assess factors affecting student satisfaction during their clinical training at intensive care units. This tool consisted of four parts. It included (26) statements as following: (3) statements for the trainer role before clinical training, (9) statements for the trainer role during clinical training, (5) statements for the Trainer role after clinical training and (9) statements for Trainer role during clinical evaluation.

Scoring system for tool II:

Answers were scored as (3 scores) for Yes, (2 score) for Some-times and (1 score) for No, the total grade was (78 score), so that, the total scoring system was calculated as follow:

- High level of satisfaction ≥ 75%
- Moderate level of satisfaction (60% - < 75%)
- Low level of satisfaction < 60%

II) Operational item:

A-Preparatory phase:

It was included reviewing of past, current, national and international related literatures and theoretical

intensive care units among the studied nursing students is $\bar{x} \pm SD= 60.20 \pm 18.73$ with a highly statistically significant difference at ($P = 0.000$).

Table (4): show that, there was a highly statistically significant relation between demographic characteristics (age, gender, qualifications before joining the faculty of nursing, place of residence, & attendance training courses) and total challenges among the studied nursing students, at ($P \leq 0.01$.)

Table (5): show that, there was a highly statistically significant relation between demographic characteristics (age, gender, qualifications before joining the faculty of nursing, place of residence, & attendance any training courses related to intensive care units) and total satisfaction among the studied nursing students, at $P \leq 0.01$. And also shows statistically significant relation between marital status and total satisfaction at P value =0.041.

Table (6) clarifies that, there was a highly statistically negative correlation between all dimensions and total challenges regarding clinical training at the intensive care units among the studied nursing students and all dimensions of satisfaction (before, during ,after clinical training and during students evaluation) at $P = 0.000$.

=6.1:1. Moreover, (95.8%) of them were single. Additionally (59.6%) of the studied nursing students had a secondary high school. While regarding place of residence and attendance any training courses related to intensive care unit training courses were from urban and didn't attend any training courses regarding critical care with the percentage of (86.2% & 81.7%) respectively.

Figure (1) It demonstrates that (67.5%) of the studied nursing students not perceived challenges regarding clinical training at the intensive care units and (22.5%) of them perceived challenges, while only (10%) sometimes perceived challenges regarding clinical training at the intensive care units

Table (2): represents that the total mean score of the student's challenges regarding clinical training at the intensive care units is $\bar{x} + SD= 91.05 + 32.33$ with a highly statistically significant difference at ($P = 0.000$).

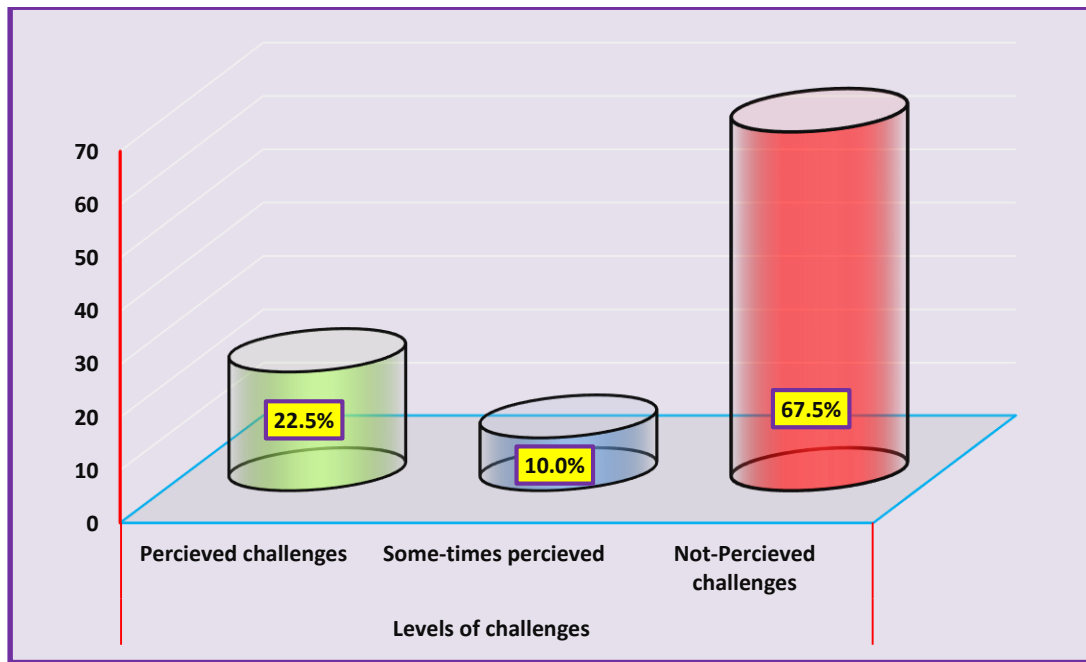
Figure (2) Demonstrates that (62.1%) of the studied nursing students had a high level of satisfaction regarding clinical training at the intensive care units, followed by (22.1%) with a low level of satisfaction while (15.8%) had a moderate level of satisfaction regarding clinical training at the intensive care units.

Table (3): represents that the total mean score of students' satisfaction regarding clinical training at the

Table (1): Frequency distribution of the studied nursing students according to their personal characteristics (n=240)

Items			
Age (year)	▪ 18 <20	6	2.5
	▪ 20 <22	174	72.5
	▪ ≥ 22	60	25.0
	▪ Mean ± SD	19.23 ± 1.35	
Gender	▪ Male	34	14.2
	▪ Female	206	85.8
	▪ Female to male ratio	6.1:1	
Marital status	▪ Single	230	95.8
	▪ Married	10	4.2
Qualifications before joining the faculty of nursing.	▪ Technical Institute of nursing	97	40.4
	▪ Secondary High School	143	59.6
Place of residence	▪ Rural	33	13.8
	▪ Urban	207	86.2
Attendance any training courses related to intensive care unit	▪ Yes	44	18.3
	▪ No	196	81.7

Figure (1): Percentage distribution of total level of challenges regarding clinical training at the intensive care units among the studied nursing students (n=240)



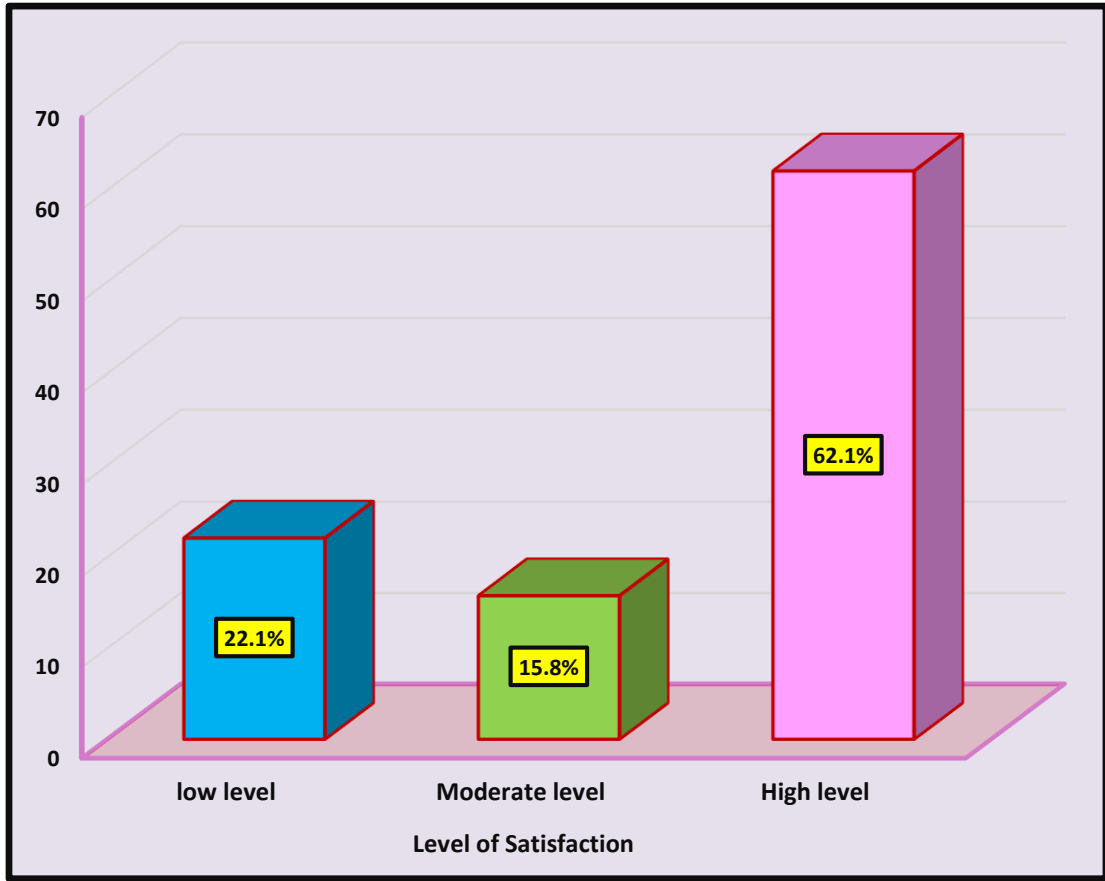
$\chi^2=131.7, P= 0.000$

Table (2): Total mean score of the studied nursing student's challenges regarding clinical training at the intensive care units (n=240)

Variable		No	%	Min	Max	\bar{x}	SD	test	P value
Students' challenges	Not perceived	162	67.5	54	97	71.41	14.9		
	Some-times perceived	24	10.0	99	121	113.6	6.65		
	perceived	54	22.5	122	158	139.9	13.03		
Total		240	100.0	54	158	91.05	32.33	522	0.000**

*Significant $p \leq 0.05$ F: ANOVA Test **Highly significant $p \leq 0.01$

Figure (2): Percentage distribution of total level of satisfaction regarding clinical training at the intensive care units among the studied nursing students (n= 240)



$\chi^2=90.6, P= 0.000$

Table (3): Total mean score of the studied nursing students' satisfaction regarding clinical training at the intensive care units among the studied nursing students (n=240)

Variable		No	%	Min	Max	\bar{x}	SD	F test	P value
Students' satisfaction	High level	149	62.1	65	78	73.45	4.46		
	Moderate level	38	15.8	47	62	49.89	4.63		
	Low level	53	22.1	26	46	30.36	7.25		
Total		240	100.0	26	78	60.20	18.73	1414	0.000**

*Significant $p \leq 0.05$ F: ANOVA Test Highly significant $p \leq 0.01$

Table (4): Relation between total challenges regarding clinical training and personal characteristics among the studied nursing students (n= 240)

Items	z	Total challenges						P value
		Not Perceived		Perceived		Total	P value	
		N	%	N	%			
Age (years)	▪ 18-< 20	6	6	2.5	0	6	0	0.00**
	▪ 20-< 22	174	96	40.0	0	174	0	
	▪ ≥ 22	60	60	25.0	0	60	0	
Gender	▪ Male	34	34	14.2	0	34	0	0.01**
	▪ Female	206	128	53.3	0	206	0	
Marital status	▪ Single	230	10	4.2	0	230	0	0.81
	▪ Married	10	152	63.3	0	162	0	

Qualifications before joining the faculty of nursing	Technical Institute of nursing	97	97	40.4						
	Secondary high school	143	65	27.1		0		5	3	00**
Place of residence	▪ Rural	33	33	13.8						
	▪ Urban	207	129	53.8		0		5	4	01**
Attendance of any training courses related to intensive care units	▪ Yes	44	44	18.3						
	▪ No	196	118	49.2		0		5	9	00**

Significant p ≤ 0.05 **highly significant p ≤0.01

Table (5): Relation between total satisfaction regarding clinical training and personal characteristics among the studied nursing students (n= 240)

Items	z	Total satisfaction						X ²	P-Value	
		Low		Moderate		High				
		N	%	N	%	N	%			
Age (years)	▪ 18 < 20	6	0	0.0	0	0.0	6	2.5	48.8	0.000**
	▪ 20 < 22	174	53	22.1	35	14.6	86	35.8		
	▪ ≥ 22	60	0	0.0	3	1.3	57	23.8		
Gender	▪ Male	34	0	0.0	3	1.3	31	12.9	15.3	0.001**
	▪ Female	206	53	22.1	35	14.6	118	49.2		
Marital status	▪ Single	230	0	0.0	0	0.0	10	4.2	6.3	0.041*
	▪ Married	10	53	22.1	38	15.8	139	57.9		
Qualifications before joining the faculty of nursing	Technical Institute of nursing	97	0	0.0	0	0.0	97	40.4	99.4	0.002**
	Secondary high school	143	53	22.1	38	15.8	52	21.7		
Place of residence	▪ Rural	33	0	0.0	2	0.8	31	12.9	17.0	0.001**
	▪ Urban	207	53	22.1	36	15.0	118	49.2		
Attendance of any training courses related to intensive care units	▪ Yes	44	0	0.0	0	0.0	44	18.3	32.9	0.000**
	▪ No	196	118	49.2	118	49.2	118	49.2		

*Significant p ≤ 0.05 **highly significant p ≤0.01

Table (6): Correlational matrix between dimensions of satisfaction and challenges regarding clinical training at the intensive care units (n= 240)

Total challenges	Total satisfaction regarding clinical training			
	Before clinical training	During clinical training	After clinical training	During students evaluation
The human element				
▪ Characteristics of the trainer	-0.951 0.000**	-0.942 0.000**	-0.911 0.000**	0.923 0.000**
▪ Ability the trainer to communicate	-0.896 0.000**	-0.879 0.000**	-0.856 0.000**	0.868 0.000**
Ability of the trainer to apply skills	-0.855 0.000**	-0.919 0.000**	-0.948 0.000**	0.946 0.000**
Student's feeling while dealing with ill patients in ICUs	-0.591 0.000**	-0.711 0.000**	-0.792 0.000**	0.782 0.000**
▪ Students' opinions about nursing staff	-0.651 0.000**	-0.767 0.000**	-0.833 0.000**	0.820 0.000**

The non-human element					
▪ Intensive care units		-0.779	-0.873	-0.918	0.912
		0.000**	0.000**	0.000**	.000**
▪ Equipment & Supplies at ICUs		-0.781	-0.860	-0.898	0.864
		0.000**	0.000**	0.000**	.000**
▪ Procedure book		-0.956	-0.935	-0.890	0.903
		0.000**	0.000**	0.000**	.000**
regulations concerning clinical training of the department		-0.936	-0.978	-0.979	0.974
		0.000**	0.000**	0.000**	.000**
▪ Total		-0.974			
		0.000**			

assessment skills among nursing students in Arab Peninsula" who reported that highly percentage of the studied nurses were males.

Concerning to the marital status of the studied nursing students, the current study result showed that the majority of them were single. This may be due to the current study result conducted between faculty of nursing students which not finished their education. This result was similar with *Lepiani-Diaz et al., (2023)* entitled "The Impact of Clinical Training Seminars on Stress and Perception of Clinical Placement Stressors among Spanish Undergraduate Nursing Students: A Two-Phase Mixed-Methods Study" who reported that most of the studied nursing students were single.

As regard to qualification before joining the faculty of nursing, the current study result found that more than half of the studied nursing students had a secondary high school. This result was contrasted with *Mbakaya et al., (2020)* entitled "Nursing and midwifery students' experiences and perception of their clinical learning environment in Malawi" who stated that more than half of the studied nursing students third year of study.

Regarding place of residence and attendance of any training courses related to intensive care units the current study result showed that most of the studied nursing students were from urban and didn't attend any training courses related to intensive care units regarding critical care. This maybe due to most of the students don't have a license to practice nursing profession, so hospitals refuse to join them in training, still undergraduates and occupied with their study. And most of them were from urban because of geographical distribution of populations is increased in urban so most of nursing students were from urban.

This result was contradicted with *Hassan et al., (2019)* entitled "Practical Training Barriers among Nursing Students. In Critical Care Settings" who found that highly percentage of the studied nursing students didn't attend previous training courses regarding critical care while more than half of them were from rural areas.

As regard to total level of challenges regarding clinical training at the intensive care units among the studied students. The current study result demonstrated that more than two thirds of the studied students not perceived challenges regarding clinical training and more than one fifth of them perceived challenges, while one tenth of them some-times perceived challenges regarding clinical training.

This result was supported by *Diab & Elgahsh, (2020)* entitled " E-learning during COVID-19 pandemic:

Discussion

Clinical practice is a fundamental link for students to acquire clinical competences (e.g. general nursing skills, critical thinking and teamwork). The nursing student becomes competent when uses his/her knowledge, skills and attitudes to make clinical judgments and solve problems. The clinical practice is based on integrating the theoretical foundations of nursing with its application to practice, in real situations according to the experiential learning theory (*Fernández-García, et al., 2021*).

Psychological change, physical stress, challenges in caregiving, challenges in communication, challenges in ambivalent feelings related to death, and lack of belongingness were key factors that impacted nursing students' learning during their practice in the ICU. Understanding nursing students' expectations is important to take appropriate measures to overcome challenges (*Liu, et al., 2022*).

So, the aim of the study was to discover the clinical training challenges facing undergraduate nursing students in intensive care units. To fulfill the aim of this study, the following two stated research questions were formulated:

3. What are the clinical training challenges facing undergraduate nursing students in intensive care units?
4. What are the factors affecting undergraduate nursing students' satisfaction during their clinical training in ICUs?

Discussion of the present study is categorized into the following parts:

As regard to age of the studied nursing students, the current study result showed that less than three quarters of the studied nursing students their age was between 20 and 22 years old with a mean age of 19.23 ± 1.35 . This result was supported with *Mohamed & Elbiaa, (2022)* entitled "Perceived Barriers among Undergraduate Nursing Students toward Performing Physical Assessment of Critical Care Patients" Egypt. who reported that more than two thirds of them their age was more than 22 years old with a mean age of 21.13 ± 1.12

Concerning to gender of the studied nursing students, the current study result showed that most of the studied nursing students were female with a female to male ratio = 6.1:1. From the investigator point of view this result may be due to common gender in nursing field in Egypt are females, and this may be due to females have the greater interest in studying nursing in Egypt.

This result was contrasted by *Alamri and Almazan, (2018)* entitled "Barriers of physical

Concerning to relation between total satisfaction regarding clinical training and personal characteristics among the studied nursing students, the current study result showed that there was a highly statistically significant relation between demographic characteristics and total satisfaction among the studied nursing students.

From the investigator point of view, this could be related to that older students who had previous training and experience in the nursing field and those with previous nursing qualifications had more level of coping, acceptance and satisfaction about clinical training than younger students without previous training.

This result was supported with *Ali & Hassan, (2019)* who applied study to assess the intern nurse students' satisfaction with clinical learning environment in different clinical training areas and showed that there was statistical significance difference between gender and satisfaction domain while there was significant positive correlation between working hours/week and faculty support domain, also significant positive correlation between age and Learning opportunity and total domains, but there was insignificant correlation between the rest of total working hours and age variables and dimensions of satisfaction.

As regard to correlational matrix between dimensions of satisfaction and challenges regarding clinical training at the intensive care units among the studied nursing students, the current study result showed that there was a highly statistically negative correlation between total challenges & all dimensions of satisfaction (before, during, after clinical training and during clinical evaluation) and all dimensions of challenges regarding clinical training at the intensive care unit among the studied nursing students. Additionally there was a highly statistically negative correlation between total satisfaction and total challenges regarding clinical training at the intensive care unit among the studied nursing students.

This result was in the same line with *Safan & Ebrahim, (2018)* who conducted a comparative study entitled problems and obstacles facing nursing interns and its relation to their performance at clinical setting and found that there were negative correlation between Problems, obstacles and satisfaction.

Conclusion

In the light of the current study findings, it can be concluded that

More than two thirds of the studied nursing students not perceived challenges regarding clinical training at the intensive care units and more than one fifth of them perceived challenges. Additionally, more than two-thirds of the studied students had a high level of satisfaction, also more than one fifth of studied nursing students had a low level of satisfaction regarding clinical training at the intensive care units, moreover, half of studied nursing students had low level of satisfaction regarding the clinical trainer gives notes about students performance, performs the actual clinical evaluation of student's performance on the patient, also giving enough time to answer oral examination. There was a highly statistically negative correlation between total satisfaction and total

Obstacles faced nursing students and its effect on their attitudes while applying it" who found that there was the highest level of total obstacles present among more than two thirds of academic students in the first year and the lowest level of total obstacles present among more than half of academic students in the fourth year was that faced nursing students during using e-learning. Also *Ludin & Arsyad, (2021)* entitled "The Clinical Learning Environment of Intensive Care Units Perceived by International Islamic University Malaysia (IIUM) Undergraduate Nursing Students" who found that the nursing students' perception practice training of the CLE of ICU is positive.

Concerning to total level of satisfaction regarding clinical training at the intensive care units among the studied nursing students, the current study result demonstrated that about two thirds of the studied nursing students had a high level of satisfaction regarding clinical training at the intensive care units, followed by less than one quarter of them with a low level, while more than one tenth of them had a moderate level of satisfaction regarding clinical training at the intensive care units.

From the investigator point of view this result may be related to that the clinical instructors provided orientation to students about what has to be done by them in this clinical setting, provided the students with clear instructions, the clinical tasks assigned to students are clear and carefully planned, the clinical placement is interesting for students and have a sense of satisfaction with this clinical placement, the clinical instructor considered the students' feelings, talks with them personally, help them during clinical training, solve the problems facing them during clinical training and rounded on them continuously

This result was in the same line with *Hassan et al., (2019)* who found that more than half of studied nursing students are satisfied with practical training at critical care settings. Also this result was accordance with *Suliman & Warshawski, (2022)* who conducted a cross-sectional study to assess Nursing students' satisfaction with clinical placements: and showed that highly percentage of the studied nurses' satisfaction with their clinical.

In relation between total challenges regarding clinical training and personal characteristics among the studied nursing students, the current study result showed that there was a highly statistically significant relation between demographic characteristics (age, gender, qualification before joining faculty of nursing, place of residence, & attendance any training courses related to intensive care units training courses) and total challenges among the studied nursing students.

From the investigator point of view, this might be related to that older students who had previous training and experience in the nursing field and those with nursing qualifications such as technical nursing institute before joining faculty of nursing are more able to adapt with challenges rather than younger students with no previous training.

This result was supported with *Diab & Elgahsh, (2020)* who found that there was no statistically significant difference between the students' demographic variables and the obstacles they faced them, but statistically significant difference regarding age, gender variables.

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challenges regarding clinical training in intensive care units.

Recommendations

On the light of the study findings, the following recommendations are suggested:

A-recommendation to the Faculty

- ✓ Cooperation protocol between faculty and the hospital should be planned prior going to the clinical area and manage the supplies required for clinical training and provide the students with communication skills and infection control basics to overcome their fears of infection.
 - ✓ Further studies should be designed to overcome challenges of clinical training to improve students' training and enhance their satisfaction
 - ✓ Policy makers must develop strategy, protocol, or system to eliminate performance challenges.
- ##### Be Recommendations to the trainer
- ✓ Increase the number of supervisory staff by the nursing college to be appropriated with the number of students in the clinical practice in the hospitals .
 - ✓ Ensure the trainer have the desire for training, able to initiate confidence between students and provide support and motivation for their students.
 - ✓ The trainer must empowered with courses to cope with their profession including communication skills and self awareness.
 - ✓ Teach the trainer suitable way to communicate with the students within intensive care units
 - ✓ They should focus on demonstrating the importance of sub objective of clinical evaluation and provide notes about their performance
 - ✓ The trainer ensure the presence of cooperation between nursing staff and students , performs students clinical evaluation on the patient in the hospital and being supportive to eliminate the students fear of infection
 - ✓ provide notes about their performance, also give appropriate time to answer oral examination and provide written instruction about how to deal with the device at intensive care units.
 - ✓ Increase students confidence by applying clinical practice on the patient.

C-Recommendation to the intensive care units.

- ✓ Continuous supervision and appraisal interview should be conducted with nursing through daily, weekly discussion and at the end of clinical experience by immediate supervisor to discuss performance to learn more, develop knowledge and skills.
- ✓ Teaching team may increase the clinical skills of the students; these include the nursing staff in the hospitals with an experience for more than five years in the job to be preceptors on the students in the clinical units.
- ✓ Provide students with written instructions about how to deal with the device at intensive care units.
- ✓ Set policy that facilitates students reach to patients files.

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