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Akram Sayed Salama
General Directorate of
Nursing, Ministry of Health,
Gaza Strip, Palestine

Yousef Mohamoud Awad
Department of Nursing,
University of Palestine, Gaza
Strip, Palestine

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Advantage and limitation of nursing students' training at governmental intensive care units in Gaza strip: Nurses' perceptions

Akram Sayed Salama and Yousef Mohamoud Awad

Abstract

Background: Today's the health care system is suffering from an increase in the number of critically ill patients being cared for in a ward environment.

Material and Methods: A cross-sectional analytical design was used in the present study to explore the advantages and limitations of nursing students' training at governmental intensive care units in Gaza strip as perceived by involved ICU nurses, head nurses and supervisors. The study was conducted in five ICUs in the main governmental hospitals of Gaza strip. The study subjects include ICU nurses' students (n=85), ICU head nurse (n=5) and ICU supervisors nurse (n=3). The data was collected by self-constructed structured questionnaire with 51 close-end questions was developed after extensive literature review which went through content and face validity. The questionnaire covered the variables in four main domains.

Result: there was a significant nurses' agreement toward nursing students training at ICU (mean 3.69, t= 73.941). The nursing instructor at the intensive care unit domain (mean 3.93, t = 68.765) capture the higher agreement score among other domains, while the clinical training environment in the intensive care units shows the least one (mean 3.55, t= 60.939). This result indicates that the clinical instructor does his best to provide students with new knowledge, experience motivation, support and help the for gaining new skills that practiced in the intensive care unit. The clinical environment of the ICU needs to be improved some intensive care unit space not suitable for students to take practice freely.

Conclusion: Intensive critical care environment is considered as an effective place to promote nursing students' clinical learning for most of the nursing students.

Keywords: Intensive critical care, nursing students training, Gaza strip

1. Introduction

1.1 Back ground

The purpose of undergraduate nursing education is to prepare qualified nurses to be committed to high quality, safe patient care, and proper clinical practice and transform theoretical knowledge into patient care ^[1]. Clinical learning environment is an effective entity on the learning process for nursing students as the practice area. However, learning in clinical environment has several benefits, but it can be challenging, unpredictable, stressful, and constantly changing environment; particularly intensive care unit (ICU) as it's stressful and has an impact on quality of care in terms of patient outcomes and safety ^[2]. The quality of clinical preparation of nursing students has a great influence on the quality of the program. Critical care placement offers a wealth of learning opportunities for nursing students ^[3]. Intensive care environment is an emotional and intellectually challenging environment, which requires advanced knowledge, habitually applied skill and understanding of the value of caring holistically. Critical care is an area that presents many learning opportunities for providing nursing students sufficient clinical experiences before graduation ^[4]. As intensive care patients require more complex or acute nursing care, clinical practicum in an intensive care unit (ICU) is valuable for nursing students ^[5]. This allows students to apply wide array of skills and can observe interdisciplinary teamwork and decision making ^[6]. Clinical practicum in intensive care develops clinical reasoning by organizing information; however, students may have different experiences during their clinical practicum ^[7, 8]. Today's the health care system is suffering from an increase in the number of critically ill patients being cared for in a ward environment. As a result, nurses require the knowledge and skills to effectively manage this patient group. Skills such as prompt recognition of the sick patient,

Corresponding Author:
Akram Sayed Salama
General Directorate of
Nursing, Ministry of Health,
Gaza Strip, Palestine

effective communication and performing basic management care skills are necessary ^[9]. Nursing training is a combination of theoretical and practical learning experiences that enable nursing students to acquire the knowledge, skills, and attitudes for providing nursing care. Nursing education is composed of two complementary parts: theoretical training and practical training. A large part of nursing education is carried out in clinical environments ^[10]. As more nursing programs integrate critical care experiences within the curriculum, recent national surveys of accredited baccalaureate nursing programs have shown that the majority of curricula include critical care content among required courses ^[11]. Undergraduate nursing students should be taught essential skills in recognition of a deteriorating patient; these skills must include how to call for appropriate help early, correct interpretation of abnormal signs and how to implement measures to prevent further deterioration. Accurate documentation of findings and communication with colleagues should be incorporated into teaching programs ^[12].

Finally, a world where the struggle between life and death polarizes itself, making it a feeling of fullness. All these aspects can affect people who work in the ICU environment, especially students who are beginners. For them, this may be a fruitful area for the genesis of an attitude of respect and regard for men to be cared for, besides that it enables them to acquire knowledge and technical skills ^[13]. Clinical education not only does it provide opportunities for students to apply the theory learned in the classroom to the real world of clinical nursing, it is also a socialization process through which students are inducted into the practices, expectations and real-life work environment of the nursing profession ^[14]. One of the key characteristics of nursing as a science and profession is that its education requires a close relationship between theoretical domain and clinical domain ^[15].

2. Significance of the study

In this paper, we argue that while the issue of nursing students' training at Intensive Care Units of governmental hospitals, it is not received the due attention that reflects its significance, and hence, the question that continues to challenge nursing directors, is how to help nursing students' to be trained at the Intensive Care Units without causes unintentional errors. A greater understanding of the effect of nursing students' training at Intensive Care Units on nursing staff performance can lead to supportive and proactive nursing practices. It may also enhance the quality work life environment in which nurses can continue to demonstrate professional caring behaviors to patients and colleagues. In, Gaza strip nursing education program is offered by nursing faculty. It has 4-year course during eight half academic years in the form of theoretical courses (80 to 100 credit hours) and clinical courses (30-40 credit hours). Students are apprenticed after or at the same time as learning theoretical courses. Clinical education is mainly done by faculty members. It has 5 universities and 5 colleges of nursing each university and college have average number are 3000 students, most of students need training in many departments like intensive care unit, emergency department, medical, surgical. Large number of students can burden on the provision of nursing service, especially in decrease of the coordination between the universities and Ministry of Health.

On other hand, in Palestine, there are no previous published studies that articulate this problem, and thus the question to be considered is whether the caring aspect of nursing is diminished by working in overcrowded nursing students in intensive care unit or not.

3. Aim of the study

The aim of this study is to explore the advantages and limitations of nursing students' training at intensive care units in governmental hospitals of Gaza strip as perceived by involved ICU nurses, head nurses and supervisors.

3.1 Research objectives

1. To assess the nurses' perception about the functioning of the nursing students at intensive care units.
2. To assess the nurses' perception about the limitations of the nursing students' enrollment at intensive care units e.g. overcrowding.
3. To determine the differences in nurses' responses that relies to their sociodemographic factors
4. To suggest recommendations that could help policy makers in decision making in regards situation.

4. Material and Methods

4.1 Study Design

A descriptive cross-sectional study was applied in order to assess the nurses' perceptions at governmental intensive care units in regards to enrolment of the students' nurses in ICU caring. The researchers preferred to use this design as it is appropriate for describing the status of phenomena, testing relationships among variables and involving the collection of data during a single period of data collection ^[16].

4.2 Setting of the study

The study was conducted at the 5 major hospitals including intensive care unit in Gaza strip namely; El-Shifa complex, European Gaza hospital, Al Indonesia hospital, Naser complex and Al Nasser Paediatric hospital.

4.3 Study population

The study population of this study consist of all the nurses (100 eligible nurses) who are working at intensive care unit in governmental hospitals of Gaza strip in addition to their head nurses and supervisors.

4.4 Sampling method and sample size

Due to the relatively small number of study population, the researcher census sampling method as a sampling design in which all of study population subjects was taken as a study sample, which 93 nurses were captured as a study sample.

4.5 Tools of the study

A self-constructed structured questionnaire with 51 close-end questions was developed after extensive literature review which went through content and face validity. Data about the nurses' sociodemographic characteristics were gathered via a self-administered questionnaire in Arabic version. The questionnaire covered the variables in four main domains; namely

1. Student's theoretical and practical competence in the intensive care unit (N=15).
2. Nursing instructor at the ICU (N=13).
3. Clinical training environment in the intensive care units

(N=14).

4. Safety precautions and infection control (N=9).

The questionnaire was designed as a Likert scale of 5-points (1= strongly agree, 2= agree, 3= neutral, 4= disagree, 5= strongly disagree) questions about nurses' perceptions toward enrollment of student nurses in the ICU care, in addition to two ranked questions determine the opinions of participants about advantages and limitations of enrollment of student nurse in ICU patients' care according to top (1 being the most and number 5 being the least), and additionally one close-end question.

4.6 Data entry and analysis

The process of data entry and analysis were including the following process:

- Overview of questionnaires.
- Designing data entry model using SPSS program (version 22).
- Coding and data entry into the computer by assistance of a statistician.
- Data cleaning to ensure accurate entry of data
- Analysis of data; that the anticipated procedures will include:
 - Percentage, mean and standard deviation for distribution of the study variables.
 - One sample (t) test, two sample t test.

4.7 Validity and reliability

4.7.1 Face and content validity

The questionnaire was evaluated by panel of experts in the field of nursing and research methodology in order to evaluate adequacy of the instrument to measure what supposed to be measure, which will ultimately give an instrument more confidence upon it.

4.7.2 Reliability of the instrument

Reliability of an instrument is the degree of consistency of questionnaire. For this purpose, reliability coefficient for pilot sample was measured. Cronbach's coefficient alpha above 0.70 was considered as recommended by Polit, and Beck (2012).

4.8 Eligibility criteria

The nurses were chosen according to the inclusion criteria; including to be registered nurses, head nurses and supervisors who are employed for at least 6 months in the adult or pediatric ICUs of the selected governmental hospitals in Gaza strip.

4.9 Data collection

Data was collected by the researchers. Each questionnaire has a consent form in the first page that asks the participants to participate voluntary in the study. Time allocated for each questionnaire is about 15-20 minutes.

4.10 Ethical and administrative considerations

The study protocol was approved by the Palestinian Ministry of Health represented by Human Resources Development (HRD) and the authorized ethical body represented by Helsinki Committee in Gaza Strip. Confidentiality also was ensured during and after questionnaire filling as a written consent form was signed

by all participants.

4.11 Limitations of the study

- Some difficulty in including all eligible nurses due to working rotation shifts especially at night shift.
- Limited literature about the topic, since it is the first study done in Gaza strip.

5. Results

5.1 Description of the sample

The sociodemographic characteristics of the 93 participants are illustrated in Table 1. The greater part (74.2%) was male nurses, and females were (25.8%). The mean age of the study population was show high homogeneity (30.53 ± 5.875) as they were selected from homogeneous target population. 88.2% of the participant were have the bachelor of nursing. The vast majority of the study sample (23.7%) was drawn from El-Shifa Medical Complex and European Gaza hospital as considers the main hospitals in Gaza strip, as well as the majority of participants' job titles were nurses (91.4%) and the mean years of experience was 5.71 ± 4.862 years.

Table 1: Characteristics of the study Population

Variables	Category	Frequency "n"	Percentage %
Gender	Male	69	74.2
	Female	24	25.8
	Total	93	100
Age	Mean \pm SD	30.53 ± 5.875	
Qualifications	Nursing diploma	2	2.2
	Bachelor	82	88.2
	Postgraduate studies	9	9.6
	Total	93	100
Hospital	El-Shifa complex	22	23.7
	European Gaza hospital	22	23.7
	Indonesee hospital	14	15.1
	Naser hospital	20	21.4
	Nasser Pediatric hospital. Hospital	15	16.1
	Total	93	100
Job Title	Nurse	85	91.4
	Head Nurse	5	5.4
	Nursing Supervisor	3	3.2
	Total	93	100
Years of experience	Mean \pm SD	5.71 ± 4.862	

5.2. Description of study domains

5.2.1 Overall Study-Related Factors

Table 2 showed that there was a significant nurses' agreement toward nursing students train at ICU (mean 3.69, $t = 73.94$). The Nursing instructor at the intensive care unit aspect (mean 3.93, $t = 68.76$) capture the higher agreement score among other domains, while clinical training environment in the intensive care units shows the least one (mean 3.55, $t = 60.93$). This result indicates that the clinical instructor does his best to provide students with new knowledge, experience motivation, support and help the for gaining new skills that practiced in the intensive care unit. The clinical environment of the ICU needs to be improved some intensive care unit space not suitable for students to take practice freely.

Table 2: Mean scores for all domains

Total of domains	Mean Score (5)	± SD	%	T	P-value	Rank
Student’s theoretical and practical competence in the intensive care unit	3.61	.567	72.2	61.31	.001	3
Nursing instructor at the ICU	3.93	.551	78.6	68.76	.001	1
Clinical training environment in the intensive care units	3.55	.561	71	60.93	.001	4
Safety precautions and infection control	3.72	.606	74.4	59.21	.001	2
All	3.69	.481	73.8	73.94	.001	

* The mean score (>3.40) is statistically significant at p <0.05, and relative weight >60

5.2.2. Student’s theoretical and practical competence in the intensive care unit domain

Table 3 showed there was a significant agreement (mean 3.60, t = 61.31) among perception nurses about the crucial role of student’s theoretical and practical competence in the intensive care unit in training at intensive care unit. Of which, the item No. 2 “intensive care unit training is essential to prepare students profession in the future”. was captured the highest mean (weight %) score of 4.3 (86.6%), while the item No. 15 “ The duration of training for students in the intensive care unit is sufficient”. had the lowest mean score of 3.03 (60.6%). This result support that the total period in nursing training in ICU is enable and acquiring nursing students more opportunities for practicing new and complex tasks.

Table 3: Student’s theoretical and practical competence in the intensive care unit

No.	Items	Mean Score (5)	± SD	%	T	P-value
1.	Aspects of nursing training focus on acquiring nursing skills related to the ICU.	4.23	.573	84.6	71.06	.001
2.	ICU training is essential to prepare students profession in the future.	4.33	.631	86.6	66.19	.001
3.	Students have a high degree of participation during ICU training.	3.70	.704	74	50.68	.001
4.	Students have sufficient scientific knowledge that enabling them to train in the intensive care unit.	3.34	.950	66.8	33.95	.001
5.	Students have sufficient practical skills to train them in the intensive care unit.	3.39	.909	67.8	35.92	.001
6.	The students' level of study is appropriate and qualifies them for training in the ICU.	3.54	.828	70.8	41.18	.001
7.	Students can perform some of nursing procedures within the ICU.	3.78	.640	75.6	57.02	.001
8.	Students can give different medications with different methods according to ICU protocol.	3.63	.942	72.6	37.22	.001
9.	Students can determine the physical needs of the patient in the intensive care unit.	3.33	.936	66.6	34.32	.001
10.	Students can determine the psychosocial needs of the patient in the intensive care unit.	3.35	1.007	67	32.12	.001
11.	Students acquire different skills and knowledge during ICU training.	3.92	.695	78.4	54.43	.001
12.	Students have the ability to handle and use medical equipment and devices within ICU.	3.52	.916	70.4	37.01	.001
13.	Students are actively assisting when there are patients overcrowding.	3.51	.951	70.2	35.53	.001
14.	4Students can practice in different working shifts.	3.49	.996	69.8	33.84	.001
15.	The duration of training for students in the ICU is sufficient.	3.03	1.088	60.6	26.87	.001
	Total	3.60	.567	72.14	61.31	.001

5.2.3 Nursing Instructor at the ICU

Table 4 exhibited there was a significant agreement (Mean 3.90, t =68.76) among nurses about the role of nursing instructor at the intensive care unit. Of which, the item No. 5 and 6 respectively “The clinical instructor is a good model for students”, and “The clinical instructor gives positive and effective feedback”. Were captured the highest mean score

(weight %) of 4.11 (82.2%). While the No. 12 "The clinical instructor has good inter-personal communication skills with others" was at least mean score (weight %) of 3.73 (74.6%). The results also showed that the clinical instructor play a good role model for his students, and give positive feedback, guidance and facilitate the training process.

Table 4: Nursing instructor at the intensive care unit

No.	Items	Mean Score (5)	± SD	%	T	P-value
1.	The clinical instructor is competent and has sufficient information regarding the ICU to qualify him for the training process.	3.94	.749	78.8	50.67	.001
2.	The clinical instructor has sufficient experience with the ICU that qualify him for the training process.	3.91	.747	78.2	50.54	.001
3.	The clinical instructor has a high level of clinical skills to work in the intensive care unit	3.92	.741	78.4	51.09	.001
4.	The clinical instructor provides guidance to students to facilitate the training process	3.99	.684	79.8	56.27	.001
5.	The clinical instructor is a good model for students.	4.11	.714	82.2	55.46	.001
6.	The clinical instructor gives positive and effective feedback.	4.11	.714	82.2	48.99	.001
7.	The clinical instructor is available during the training period with the students in ICU.	3.88	.764	77.6	48.50	.001
8.	The clinical instructor can identify the strengths and weaknesses of students during ICU training	3.85	.765	77	54.35	.001
9.	The clinical instructor can continuously observe and monitor student performance in the ICU	3.90	.693	78	44.39	.001
10.	The clinical instructor encourages a climate of mutual respect between students and nurses working in the ICU.	3.90	.848	78	57.84	.001

11.	The presence of a clinical instructor does not allow mistakes to be made in ICU.	4.08	.679	81.6	36.32	.001
12.	The clinical instructor has good inter-personal communication skills with others	3.73	.991	74.6	50.09	.001
13.	The clinical instructor can provide sufficient training opportunities for students within the ICU	3.98	.766	79.6	50.99	.001
Total		3.90	.738	78	68.76	.001

5.2.4 Clinical training environment in the ICU

Table 5 showed that there was a significant agreement (mean 3.54, $t = 60.93$), of nurses about the clinical training environment at the intensive care unit. Of which, the item Nos.9, 10 and 14" the students' questions and queries are answered and given by the nursing staff", "the intensive care unit nurses provide a supportive environment for students, and "I am satisfied with the training of nursing students in the intensive care unit", were showed highest agreements with mean and mean relative score 3.95 (79), 3.96 (79.2%)

and 3.95 (79%) respectively. On other hand, the item No. 1 "the student's numbers are commensurate with the space of intensive care unit during training" was at least mean score (weight %) 2.98 (59.6%). The results reveal that the nursing staff are cooperative, helpful and give support to nursing students for students during their practice and the number of students is commensurate with physical environment of the intensive care unit, that to take in consideration when making the clinical practices schedules.

Table 5: Clinical training environment in the intensive care unit

No.	Items	Mean Score (5)	± SD	%	T	P-value
1.	The student's numbers are commensurate with the space of ICU during training	2.98	1.123	59.6	25.58	.001
2.	The student's numbers are proportional to the number of beds in the ICU during training.	3.10	1.133	62	26.35	.001
3.	The student's numbers during training in the ICU does not hinder the provision of appropriate nursing care by nursing staff.	3.18	1.122	63.6	27.34	.001
4.	Overcrowding in the ICU makes me feel bad.	3.73	1.002	74.6	35.92	.001
5.	Nursing students are not the reason for overcrowding in the ICU.	3.38	.943	67.6	34.52	.001
6.	Students are not feeling of fear and apprehension by the ICU training environment	3.06	1.061	61.2	27.84	.001
7.	The intensive care unit is well equipped, has all the tools and equipment needed to student's training.	3.78	.907	75.6	40.23	.001
8.	The ICU training environment helps students learn during the training period	3.94	.719	78.8	52.75	.001
9.	The ICU nurses provide a supportive environment for students.	3.95	.649	79	58.65	.001
10.	Students' questions and queries are answered and given by the nursing staff.	3.96	.674	79.2	56.59	.001
11.	Nurses in the ICU have enough time to provide help to nursing students.	3.45	.950	69	35.03	.001
12.	Students are allowed to use medical instruments, equipment and devices independently within the ICU	3.46	1.017	69.2	32.83	.001
13.	Nurses in the ICU take into consideration all students' educational needs.	3.74	.859	74.8	42.03	.001
14.	I am satisfied with the training of nursing students in the ICU.	3.95	.812	79	46.84	.001
Total		3.54	.5612	71	60.93	.001

5.2.5 Safety precautions and infection control in the intensive care unit

Table 6 showed that there was a significant agreement (mean 3.72, $t = 59.21$) about safety precautions and infection control in the ICU. Of which, the item No 3, "students maintain patient dignity in the intensive care unit

was shown the highest mean score 3.86 (77.2%), while the item No 1 "Nursing students apply occupational safety precautions to patients in the intensive care unit" was reported as the least mean score 3.60 (72%).

Table 6: Safety precautions and infection control in the ICU

No.	Items	Mean Score (5)	± SD	%	t	P-value
1.	Nursing students apply occupational safety precautions to patients in the ICU	3.60	.849	72	40.92	.001
2.	Students maintain patient privacy in the ICU	3.77	.782	75.4	46.54	.001
3.	Students maintain patient dignity in the ICU	3.86	.636	77.2	58.55	.001
4.	Students deal with patients by their names, not by ICU bed number.	3.77	.782	75.4	46.54	.001
5.	Students apply the principles of infection control during ICU training.	3.62	.833	72.4	41.95	.001
6.	Students practice hand washing periodically and in accordance with the Ministry of Health protocols during training in the ICU.	3.76	.786	75.2	46.19	.001
7.	Students use supplies and equipment available in the ICU appropriately.	3.73	.809	74.6	44.45	.001
8.	Training equipment and devices are in good condition that facilitates training for students within the ICU.	3.75	.868	75	41.69	.001

9.	Students report any defects that may compromise patient safety in the ICU	3.62	.846	72.4	41.31	.001
	Total	3.72	.606	74.46	59.21	.001

5.3 Differences in nurses' perceptions to advantage and disadvantage of nursing student in ICU

Table 7 show the results of advantage of nursing student in Intensive care unit was (no = 75, 80.6%) and Disadvantage of nursing student in Intensive care unit was (no = 19, 19.4%)

Table 7: Differences in nurses' perceptions to advantage and disadvantage of nursing student in Intensive care unit.

No.	Domains	No.	%
1.	Advantage of nursing student in Intensive care unit.	75	80.4
2.	Disadvantage of nursing student in Intensive care unit.	19	19.4
	Total	93	100

6. Discussion

This study entails the unique perceptions of nurses toward the nursing students training in ICU who enrolled in compulsory critical care course and suggests that these advantage or limitation were effect on health care in ICU. Some of these factors have direct impact on students' knowledge and professional development and subsequent socialization to the critical care environment, clinical placements and then selecting career path.

The results of the study revealed four major aspects of nursing students, which were related to student's theoretical and practical competence in the intensive care, nursing clinical instructor, clinical training environment in the intensive care units setting and safety precautions and infection control, and it's mostly identified support nursing training students in ICU I setting. A study conducted by Gallagher, in 2011 to evaluate a critical care course for nursing students showed that the results from this evaluation clearly demonstrate that undertaking the critical care course was a positive experience for the students and it is evident that the majority of students valued the critical care course. This study supports the implementation of critical care training for undergraduate nursing students. There are implications for the development of specific modules, aiming to improve undergraduate nursing students' recognition, assessment and management of the critically ill patient. Tastan, *et al.* (2014) views and expectations of nursing students regarding intensive care practice are important for the organization of the nursing education environment. The nursing curriculum must be revised and developed according to the needs of students.

Williams & Palmer (2014) conclude that the clinical practice in ICUs exposes students to a variety of complex critical care conditions and nursing procedures which broaden their knowledge and enhance their clinical competence. Critical care offers a wealth of learning opportunities which are only available in high acuity areas. Though students can be very anxious before commencing their placements, mentors and higher education play an important part in helping them overcome this. The challenge is how to work together to provide effective support systems for the benefit of the students. Additionally, the finding of this study is consistent with Alasad and Ahmad (2004) who have recommended that students need clinical experiences with critically ill patients. Thus, schools and administrators of the hospitals have an important role in providing nursing students sufficient clinical experiences before graduation.

Furthermore, the study finding of Vatansever, and Akansel (2016) concluded that the nursing students play an important role in forming their thoughts related to ICU. ICU environment is a place where nursing students experience different procedures and caring activities and get involved in analyzing complex health conditions, they we recommend the use of the intensive care unit as a part of clinical education for nursing students who are close to their graduation such as intern students. To deal with this challenge, Swinny and Brady (2010) suggested that involving of nursing students in basic patient care activities which will decrease nurses' workload and allow more time for students' clinical teaching and supervision.

Understanding the experiences of nursing students in critical care unit will help nurse managers, clinical nurse educators, and nurses appropriately support and facilitate nursing education. It is important to give organizers of planned clinical education suggestions and solutions especially about the critical care units' placements rotation. It is improving for collaboration between academia and clinical services in term of providing efficient and much experience of students related to clinical objectives and tasks.

7. Conclusion

It is obvious that all themes mentioned by the nursing play an imperative role to enhance training of nursing students at intensive critical care units and could greatly reflect the current in nursing education. The study reflects that student's theoretical and practical competence and clinical instructors make a valuable contribution to the nursing students training in intensive critical care that may enhance students learning in in intensive critical care by creating a positive learning environment and participating as role.

In the light of our study, the results declare that intensive critical care environment is an effective place to promote nursing students' clinical learning for most of the students. The inclusion of the total period in nursing training in critical care course will help nurse managers, clinical nurse educators, and nurses appropriately support and facilitate nursing education. It is important to give organizers of planned clinical setting suggestions and solutions especially about the critical care unit's placements rotation between university and nursing college.

Intensive care setting provides nursing students with a variety of learning opportunities. Hence, to ensure high quality clinical practice in ICUs, it is important to provide students with supportive learning environment that focuses on students' learning needs and enhances collaboration between students, clinical instructors and critical care nursing staff. Preceptorship model for clinical education should be adopted to ensure effective clinical learning and supervision.

8. Recommendation

In light of the findings of this study, the researcher recommends that giving an opportunity for nursing students to training in ICU and creative clinical environment by ensuring that there is sufficient equipment within the clinical facilities to enable clinical teaching and learning to take place. On other hand, nursing colleges are recommended to provide their clinical labs with simulation

equipment which could positively contribute facility training the nursing student in critical care units. The authors encouraged establishing consistent standards for the training of nursing students in critical care units, and increase nursing student's awareness about principles of infection control and occupational safety precautions to patients in the ICU.

Finally, we suggest the need for an additional in-depth research to articulate the perception of nursing students' regarding clinical nursing education, and analyses the readiness of governmental hospitals for clinical training of nursing students.

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