Assessment of Nursing Student's Clinical Practice Competencies at Military Health Institute

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Abstract

Background: Clinical competence is a cornerstone of effective nursing education, reflecting the student's ability to integrate theoretical knowledge with practical skills in real-world healthcare settings. **Aim of the study:** To assess nursing student's clinical practice to improve nursing students' competencies during their clinical practice at Military Health Institute. **Research design**: A descriptive cross-sectional study design was used in this study. **Setting**: The study was conducted at Military Health Institute. **Sample:** Purposive sample of 100 nursing students of (the whole number of the second year at Military Health Institute). **Tools**: Data was collected by using interview questionnaire that consists of 2 main parts as follow: 1st part: Demographic data of nursing students, and 2nd part: is a nursing student's competence scale (observational check list). **Results**: The study result revealed that, (47%) of students had good level and moderate level of skills while only 6% had low level of skills. There was highly statistically significant relationship between residence and critical thinking and decision-making skills score (p= 0.031). There was highly statistically significant relationship between educational achievement, and communication skills score (P= 0.009). **Conclusion**: In the light of the present study findings, it can be concluded that the majority of the nursing students demonstrated good to moderate clinical practice competencies, while a small percentage had low skill levels. Highly statistically significant relationship was found between students' residence and their critical thinking and decision-making skills. Additionally, there was a strong statistical association between educational achievement and communication skills. **Recommendation:** Based on the current study's findings, the researcher recommended regular training and evaluation sessions should be provided regularly emphasizing different clinical competencies skills.

Keywords: Assessment, Nursing Students, Clinical Practice, Competencies.

Introduction

Clinical practice helps nursing students develop their abilities and prepare them for a range of clinical settings and professional jobs. The majority of nursing researchers articulated a broad definition of competence that includes broad characteristics related to the ability to do a task under a variety of circumstances and provide the intended outcomes. Along with moral behavior and the efficient provision of high-quality services, it is further achieved by the possession of good abilities, skills, attitudes, and values. One essential skill needed to fulfill the duties of nursing is nursing competence **(Alkhelaiwi et al., 2024)**

Clinical practice is considered the cornerstone of nursing education because it equips students with essential hands-on skills and decision-making abilities needed in clinical settings. During clinical placements, students learn how to assess patients, implement care plans, administer medications, and use critical thinking in managing acute and chronic health conditions. These experiences also expose students to ethical dilemmas, time-sensitive interventions, and emotionally charged situations, all of which contribute to professional growth. Furthermore, clinical practice enhances students' communication skills, both with patients and interdisciplinary teams, fostering collaboration and patient-centered care **(Matlhaba, 2025).**

Clinical competencies refer to the ability of nursing students to demonstrate knowledge, skills, and attitudes required to deliver high-quality care. These competencies include technical procedures, patient assessment, teamwork, professional ethics, and adherence to safety standards. Competent clinical performance reflects not only skill acquisition but also the student's confidence and readiness for professional practice **(Natterøy et al., 2023).**

Clinical practice is a structured opportunity for students to acquire and refine core nursing competencies. These include psychomotor skills, clinical reasoning, patient safety, evidence-based interventions, and professional behavior. Students gradually move from observing to performing tasks under supervision and, eventually, handling more responsibilities independently. Through repeated exposure to clinical procedures and decision-making scenarios, they build confidence and competence. Competency development is not limited to technical skills but also includes affective domains such as empathy, patience, adaptability, and resilience qualities crucial in delivering holistic care **(Reaves et al., 2024).**

Clinical practice often presents numerous challenges that may impact student learning. Many students report feelings of fear, stress, and uncertainty during their initial placements, particularly when dealing with critically ill patients or unfamiliar procedures. Limited clinical opportunities, high patient loads, unclear expectations, and negative interactions with staff can further complicate the learning experience. Inadequate orientation and inconsistent feedback may leave students feeling unsupported or unprepared. Additionally, language barriers, cultural differences, and workload imbalance can contribute to a lack of confidence **(Thompson & Brewster, 2023).**

Significance of the study

Enhancing healthcare quality and safety requires strengthening the clinical training of nursing students. Clinical competence applying knowledge, skills, judgment, and attitudes in patient care remains difficult to achieve due to the gap between theory and practice, especially in structured settings like military institutions **(Imanipour et al., 2022).** While self-evaluation is useful, it may not reflect actual readiness; therefore, observational assessments by instructors offer a more accurate measure of competence, which is crucial in military-based education where discipline and accountability are essential **(Thabet et al., 2020)**

So, the study holds significant importance as it aims to assess the actual clinical practice competencies of nursing students at the Military Health Institute, based on structured observation and evaluation.

Aim of the Study

To assess nursing student clinical practice to improve nursing students' competencies during their clinical practice at Military Health Institute through:

- To identify nursing students' competences level related to clinical practice at Military Health Institute.

- To determine the strength and weak points of nursing students level of clinical practice skills.

- To recognize how to improve clinical practice competencies among Military Health Institute nursing students.

Research questions

- Q1: What is the level of nursing students' competences level related to clinical practice at Military Health Institute?

- Q2: What are the strength and weakness points of nursing students' level of clinical practice skills?

Subjects and methods

1-Research design

A descriptive cross-sectional study design was utilized in this study.

2-Study Settings:

This study was conducted at El Galaa Military Health Institute. The institute includes one large lecture hall, four class rooms and a large nursing laboratory designed for simulations of all nursing procedures. In addition, the institute has three laboratories for language and

communication. It offers two academic years of study with a total of students 150 female students.

3-Study Sample

A purposive sample of 100 nursing students at El Galaa Military Health institute participated in this study according to the following criteria

Inclusion Criteria

- Students who have completed the required coursework and clinical hours.

- Successful completion of prerequisite courses relevant to the assessment (e.g., anatomy, pharmacology, or health assessment).

Exclusion Criteria

- Newly admitted students.

- Nursing students who are not welling or disagree to participate in this study.

Tools for data collection:

Two data was collected by the researcher from nursing students using interview questionnaire and observational check list as the following:

1st part: Demographic data of nursing students that included age, residence and educational achievement score.

2nd part: Is a nursing student's competence scale (observational check list). The observational check list was adopted from **(Huang et al. 2022)** to assess nursing student's competence. This questionnaire consists of six main items and 40 sub items as the following:

N	Competency items	Number of items	Example
1	Basic nursing skills	6	Meet patient 's physical needs
2	Communication skills	6	Identify any communication Barriers/ special needs
3	Medical and technical care skills	9	Support patients during examination and treatment
4	Patients teaching skills	5	Inform and educate group of patients and families
5	Documentation and administration of nursing care	6	Handle sensitive personal data in safe way
6	Critical thinking and decision-making skills	8	Evaluate the findings

Scoring System:

Nursing students' practice was scored as the following:

- Satisfactory response = 1
- Unsatisfactory response = 0

The total nursing students' practice score was calculated and transferred to percentage as the following:

- Scoring of < 50% was considered as "poor competence ".
- Scoring of (50% - 75%) was considered as "average competence".
- Scoring 75% and more was considered as "good competence

Pilot study:

A Pilot study was conducted on 10 nursing students (10%) of the sample under study to test feasibility and applicability of the study tools, obtaining results was used as a guide to reconstruct the change needed in data collection tools. No major modifications were made so the pilot study sample was included in the study.

Ethical considerations:

An Official permission from the Scientific Research Ethics Committee of the Military Medical Academy was obtained. Participation in the study was voluntary and subjects given complete full information about the study and their role before signing the informed consent. The ethical considerations 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.

Statistical Analysis

Data was collected and subjected to statistical analysis. The mean value and the standard deviation (SD) of measured parameters were calculated using the Statistical Package for the Social Sciences (SPSS) statistical program version 27 (IBM Inc., Chicago, Illinois, USA). Comparison between the studied groups was performed using an independent samples t-test, and correlation between different scores using the Pearson correlation test (r). P value < 0.05 was considered significant.

Results

One hundred nursing students were participated in this study.

Table 1 shows that the mean age of study nursing students was 20 ± 1, and the mean educational achievement scores was 94.13± 3.10. Regarding residency, the result revealed that 86% of study nursing students were living at rural areas.

Table 2 As regarding to mean percentage scores of different Clinical Practice Competencies displays that the mean percentage score of communication skills among studied nursing students was 97.17 ±8.22, and the mean percentage score of basic skills was 92.83 ±16.79. While the mean percentage score of documentation and administration of nursing care among studied nursing students was 50.67±20.09. The findings show that the total skills mean percentage scores among study nursing students was 80.48 ±8.24.

Figure 1 As regarding to total skills score among nursing students demonstrates that (47%) of students had high level and moderate level of skills while only 6% had low level of skills

Table 3 Regarding relation between residence and different clinical practice competencies among nursing students shows that there was highly statistically significant relationship between residence and critical thinking and decision-making skills score (p= 0.031), while there was no significant relation related to all other items.

Table 4 As regards correlations between the educational achievement and different clinical practice competencies among nursing students illustrate that, there was highly statistically significant relationship between educational achievement, and communication skills score (P= 0.009), while other domains did not show any statistically significant correlation.

Table (1): The distribution of demographic characteristics among nursing students (N=100)

Characteristics	No.	%
Age		
Mean ± SD:	20 ± 1	
Min- Max	18-29	
Educational achievement scores		
Mean ± SD:	94.13± 3.10	
Min- Max	80%-98%	
Residency		
Urban	14	14.0%
Rural	86	86.0%

Table (2): Mean percentage scores of different Clinical Practice Competencies domains among nursing students (N=100).

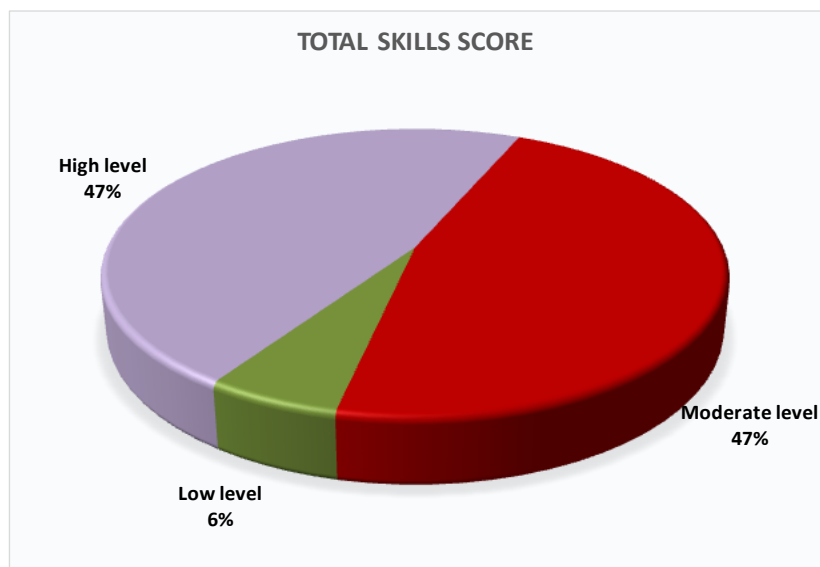| Domains	Mean ± SD	Min- Max
1. Basic skills	92.83 ±16.79	33.33- 100
2. Communication skills	97.17 ±8.22	50- 100
3. Medical and technical care skills	83.67 ±15.51	33.33- 100
4. Patient' s teaching skills	83±13	40- 100
5. Documentation and administration of nursing care	50.67±20.09	0- 100
6. Critical thinking and decision-making skills	75.8±25.4	0- 100
Total	80.48 ±8.24	53.75 - 100

Figure (1): Percentage distribution of total skills score among nursing students (N=100).

Table (3): Relation between residence and different Clinical Practice Competencies domain among nursing students (N=100).

Items	Residence				p-value
	Rural N=86		Urban N=14		
	Mean	SD	Mean	SD	
1. Basic skills score	92.25	17.28	96.43	13.36	0.311
2. Communication skills score	97.09	8.55	97.62	6.05	0.780
3. Medical and technical care skills score	83.85	15.31	82.54	17.28	0.371
4. Patient' s teaching skills score	83	13	80	16	0.491
5. Documentation and administration of nursing care score	50.00	20.29	54.76	18.98	0.400
6. Critical thinking and decision-making skills score	77.9	23.8	62.5	31.4	0.031*
Total	80.73	7.88	78.97	10.42	0.554

Table (4): Correlations between the educational achievement and different Clinical Practice Competencies domains among nursing students (N=100).

Domain	Educational achievement	
	Pearson correlation (r)	P value
1. Basic skills score	0.176	0.079
2. Communication skills score	0.259	0.009*
3. Medical and technical care skills score	0.100	0.322
4. Patient' s teaching skills score	0.058	0.569
5. Documentation and administration of nursing care score	0.172	0.088
6. Critical thinking and decision-making skills score	0.059	0560
Total	0.044	0.664

Discussion

Clinical competence among nursing students must be objectively evaluated to ensure that graduates are ready to meet real-world demands. In military healthcare settings, this need is particularly acute, as nurses are expected to deliver care in structured, high-pressure, and often resource-constrained environments. The Military Health Institute, as a disciplined educational institution, provides a unique training environment where clinical skill development is expected to be both thorough and standardized. Assessing clinical competencies in such a context is vital not only to uphold military healthcare standards but also to ensure the preparedness of nursing students in diverse and high-acuity clinical situations **(Purabdollah et al., 2023).**

According to age, the present study found that the average age of the study nursing students was 20 years, indicating that most participants were in the early years of their professional training. This may be due to the structured academic progression of Egyptian military nursing programs, where students are introduced to clinical training from first year of their study. As this the average age of studied after finishing the secondary school and admission to the institute.

This finding agrees with study of **Albloushi et al. (2023)** in Saudi Arabia, who reported a similar age range (19– 21 years) among nursing students enrolled in clinical internship programs. Also, a study of **Taylor et al. (2020)** confirmed that clinical competence assessments are typically conducted among nursing students aged 19–22, a critical period for skill development.

Regarding academic performance, the study revealed that the students had a high mean educational score of 94.13 suggesting strong theoretical achievement. This may be due to the strict academic policies and support systems available in military health institutions in Egypt, which prioritize discipline, attendance, and

continuous assessment, contributing to higher academic achievements.

This result is consistent with study of **Mohamed et al. (2024)** in Egypt, who found that more than two-thirds of nursing students in military medical institutes scored above 90% in academic exams, attributing this to rigorous academic oversight and discipline enforcement.

Concerning residence, the study reported that the majority of the nursing students lived in rural areas. This may be due to the fact that military health institutions in Egypt often serve as a gateway for students from rural areas to pursue higher education and secure employment, particularly in regions with limited access to healthcare careers.

This finding agrees with study of **Madian et al. (2022)** in Egypt, who found that more than three-fourths of students in Egyptian technical health institutes came from rural areas. In contrast, a study of **O Abah et al. (2024)** in Nigeria, found an even urban-rural distribution among nursing students, reflecting wider access to urban education facilities.

As regards mean percentage scores of different clinical practice competencies. The results of the present study revealed an outstanding mean score of 97.17 for communication skills among the study nursing students, indicating a very high level of competency in this crucial aspect of clinical practice. This may be due to the military institute's focused investment in developing communication skills through role-play, debriefing sessions, and continuous feedback from clinical supervisors.

These results are consistent with study of **Negm et al. (2024)** in Saudi Arabia / Egypt, who reported that the majority of nursing students demonstrated excellent verbal and non-verbal communication during patient interviews and interdisciplinary teamwork. Also, a study of **El-tahan et al. (2023)** entitled "Clinical Training Factors that Hinder or Facilitate Nursing Students' Learning: Its Effect on their Clinical Performance" in Egypt, found that nursing students in structured programs with simulation-based training scored highly on therapeutic communication scales.

However, these findings contrast with study of **Cant et al. (2021)** in Australia, who reported that only about half of nursing students consistently practiced effective communication, attributing the gap to stress, language barriers, and limited opportunities for reflective feedback. Likewise, a study of **Kleib et al. (2021)** in Canada, found significant variability in students' communication scores, often due to high student-to-preceptor ratios and lack of supervised interaction with patients.

As regarding to total skills score among nursing students. The current study showed that nearly half of the nursing students had moderate to high skill levels, while only a small minority exhibited low skill levels in their clinical practice competencies. This may be due to the highly regimented and supervised nature of military nursing education, which prioritizes discipline, structured checklists, and frequent skill-based assessments.

These findings align with study of **Mohamed et al. (2025)** in Qatar / Middle East context, who reported that around half of military nursing students reached high competency levels in clinical skills assessments, attributing this to structured practical training and continuous evaluation in a disciplined environment.

In contrast, these findings disagree with study of **Youssif et al. (2024)** in Egypt, who found that less than one-third of nursing students demonstrated high-level practical skills, with more than one fourth scoring in the low-skill category. They associated this deficit with inconsistent clinical exposure and overcrowded placements.

As regarding relation between residence and different Clinical Practice Competencies among nursing students. The results of the current study revealed a highly statistically significant relationship between the residence of nursing students and their critical thinking and decision-making skills, indicating that students' geographic and living environments may play a role in shaping their clinical reasoning abilities. This may be due to the variation in cognitive stimulation, availability of learning technologies, and frequency of supervised clinical exposure that

urban students experience compared to their rural peers. In the context of Egyptian military nursing education, where a significant number of students come from rural backgrounds, these disparities may impact their ability to engage in reflective, analytical, and quick decision-making during clinical practice.

This result is supported by study of **Hepburn et al. (2024)** in Australia, who found that urban-residing nursing students demonstrated higher critical thinking scores, likely due to better access to diverse clinical settings, digital learning tools, and enriched academic environments.

In contrast, these findings disagree with a study of **Li et al. (2024)** in China, which found no significant difference between urban and rural students' critical thinking scores, arguing that institutional teaching quality and mentorship were more influential than place of residence.

As regards Correlations between the educational achievement and different Clinical Practice Competencies among nursing students. The present study showed a highly statistically significant correlation between nursing students' educational achievement and their communication skills score, indicating that students who performed better academically also demonstrated stronger interpersonal and professional communication abilities. This suggests a positive alignment between cognitive competence and behavioral execution, particularly in the domain of patient and team interaction.

This may be due to the fact that students with higher educational achievement often exhibit enhanced comprehension, self-regulation, and confidence factors that directly improve their ability to convey clinical information accurately and engage in effective interpersonal interactions. Within the structured environment of the Military Health Institute, where academic rigor and communication are both emphasized, high-performing students are more likely to internalize and apply both theoretical knowledge and soft skills in clinical settings.

These findings agree with study of **Kim and Kim (2023)** in South Korea, reported that nursing students with higher GPA levels had significantly better communication ratings, as evaluated by clinical instructors, during patient interviews and team-based care scenarios.

In line with these findings, a study of **Kang et al. (2021)** in South Korea, concluded that academic achievement was positively associated with communication competence, as students with stronger study habits were more prepared, confident, and fluent in articulating care instructions and empathetic responses.

On the other hand, these findings disagree with study of **Liu et al. (2022)** in China, which found no significant relationship between GPA and communication ability, attributing strong communication skills in some lower-performing students to personal traits such as extroversion and prior work experience in care settings.

Conclusion:

Based on the current study's findings, it can be concluded that the majority of nursing students demonstrated good to moderate clinical practice competencies, while a small percentage had low skill levels. Highly statistically significant relationship was found between students' residence and their critical thinking and decision-making skills. Additionally, there was a strong statistical association between educational achievement and communication skills.

Recommendations:

Based on the current study's findings, the researcher recommended regular training and evaluation sessions should be provided regularly emphasizing different clinical competencies skills.

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