

# Managing critical ill patient in emergency room: assessment of the core competencies of emergency nurse at KSA

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## Abstract:

**Background:** Emergency nurses' vital duties necessitate a broad range of abilities, or competence. The desire to display potential personality traits that can be helpful in particular circumstances is a component of competence. **Aim :** Evaluate emergency nurses' fundamental skills in caring for critically ill patients in the ED. **Methodology :** Design: The Emergency Department of the Jeddah Hospital in Saudi Arabia used a descriptive study design. Subjects: To directly care for critically ill patients, 210 emergency nurses were selected using convenience sampling. Tools: three instruments were employed in the research: 1. Emergency nurses' fundamental clinical knowledge and skill sets. 2. Emergency nurses' fundamental abilities in collaboration and communication. 3. Emergency nurses' core competencies include research, organization awareness, professional development, and quality improvement. **The findings** indicate that among the core competencies of emergency nurses, teamwork and collaboration were the most highly rated, followed by communication skills, professional development, and neurological competence (87.52, 83.26, 81.79, 81.71, 81.68, 80.22, and 79.95, respectively). Research competency received the lowest score (20.71%). Additionally, the nurses under study had high total competency levels (78.05). **In conclusion**, competency can serve as the basis for assessing the performance of crucial nurses. A key instrument for assessing nurses' performance and patient satisfaction is core competency.

**Keywords:** critically sick patients, emergency nurses, and core competencies.

## Introduction:

Nurses have several difficulties in today's complex healthcare system, particularly those working in critical areas. (1) Resuscitation of unstable patients while allowing them time for recovery or the effects of specific medicines to improve outcomes and prevent death is the focus of emergency and critical care. (1) In an emergency room, critical illness management necessitates prompt nursing identification, ongoing monitoring, assessment, and treatment. The clinical abilities of nurses are especially needed in the emergency room.

Critical duties for emergency nurses necessitate a broad range of competencies, or skills, which are learned by education and experience. The desire to demonstrate the worth of one's abilities and potential positive personality traits that may be useful in particular circumstances is a component of competence. (3) "Helping an individual or a community via the sensible and consistent use of knowledge, clinical reasoning, technical skills, emotional intelligence, and values in everyday practice" is how the Emergency Nurses Association defines competency. (4)

The American Academy of Emergency nursing Practitioners (AAENP) released emergency nursing competencies in 2018. These skills defined the knowledge, duties, and practices within the emergency nursing practice domains. They provided examples of how clinical practice develops from novice to expert within the larger framework of practicing standards. In July 2020, the American Nurses Association adopted the "Emergency Nurse Practitioner Competencies," which were initially released by the Emergency Nurses Association in 2019. (5). Due to the nature of emergency nursing practice, handling a wide range of patients, circumstances, materials, equipment, procedures, rules, and processes requires both knowledge and expertise. Nurses must be able to prioritize important tasks while working swiftly and competently in order to assess patients in such high-stress situations.

Maintaining and enhancing clinical competency, duties, and obligations is essential for nurses. In order to verify the caliber and security of the care given, nurses and management should also evaluate these competencies.

**Significance of the study :** Medical developments and new technologies have traditionally increased the necessity for nursing personnel in the emergency department. Improved professional nurse staffing is demonstrated by the increased usage of intensive care units and the rise in the number of critical patients. (7) A competency encompasses knowledge, skills, abilities, and judgments and is an expected standard of performance. An emergency nurse may be expected to operate at a level ranging from novice to expert, depending on their training and experience. (8) Accordingly, the study's researchers hope to determine if emergency department nurses will consistently exhibit clinical proficiency and a strong theoretical foundation in line with nationally recognized frameworks.

**The aim of this study is:**

Evaluate emergency nurses' core competencies in caring for severely ill patients in emergency rooms.

**Research question:** What are emergency nurses' core competencies for caring for patients in the emergency room who are in critical condition?

**Methodology :**

**Study design :** descriptive, cross sectional research design was utilized to conduct this research .

Setting it was conducted at the emergency department of nine hospital in Jeddah , KSA.

**Subject**

Non-probability purposive sampling of 210 nurses , who employed in the aforementioned context between May and July of 2024. Being 18 years of age or older, working full-time to provide direct patient care, and having worked in the hospital for at least a year are the conditions for inclusion. However, among the exclusion criteria were those who were absent during the necessary data-gathering period for the researchers, were on vacation, or failed to correctly complete the questionnaires.

**The study used three questionnaires.**

1. **Core competences of clinical skills** and knowledge for emergency nurses.

The Emergency Nurses Association (2019) (8) adopted this tool to evaluate the clinical knowledge and core competencies of emergency nurses with reference to critically ill patients. It is divided into ***five sections:***

Part one: Assessment of respiratory core competence criteria. It has sixteen components, including an initial examination of the respiratory system, inspection, palpation, percussion, and auscultation (IPPA). The ability to recognize normal and abnormal breath sounds, evaluate the airway and ventilation, set up various oxygen therapy adjuncts, insert an oral and/or nasopharyngeal airway, insert suction, and demonstrate non-invasive positioning to clear the airway .Demonstrate the ability to care for patients using a bilateral positive airway pressure (BiPap) or continuous positive airway pressure (CPAP) machine. Demonstrates the ability to administer and monitor pharmacological agents related to the respiratory system and the skills to support proper interventions through actual or potential life-threatening disturbances to respiratory function. The ability to aid, setup, and care for the intubated or ventilated patient, etc.

**Part two: Assessment of cardiovascular core competence criteria.**

The examination of the major cardiovascular system is one of the 27 components. Inspection, palpation, percussion, and auscultation (IPPA), evaluates cardiovascular system data, demonstrates the ability to perform 12- and 15-lead ECGs, determine a 12-lead ECG with an acute inferior, anterior, lateral, and posterior wall myocardial infarction (MI), rank the patient's medical needs, competently use an external defibrillator (ED), distinguish between defibrillation and synchronized cardioversion, analyze a 6-second cardiac monitor strip, et

**Part three: Assessment of neurological core competence criteria.**

The Glasgow Coma Scale (GCS) is used in the primary neurological system assessment (IPPA), one of the ten components. exhibits proficiency in assessing pain using the appropriate pain scale, helps maintain spinal immobilization and stability, demonstrates how to apply a cervical collar, sets priorities for patients displaying hyperacute stroke symptoms, etc.

**Part 4: Evaluation of gastrointestinal (GI) core competency standards.** The primary assessment of the gastrointestinal system (IPPA), the assessment and comprehension of information related to GI emergencies, the demonstration of proficiency in inserting a nasogastric tube and an orogastric tube, the ability to identify and support appropriate interventions with real or potentially fatal changes in GI functions, etc. are its seven components.

**Section 5: Evaluation of Genitourinary (GU) Core Competencies.** The primary examination of the genitourinary system (IPPA) and the ability to demonstrate proficiency in the insertion and removal of Foley catheters on both male and female patients are among its seventeen items. The ability to recognize and rank nursing interventions in a reproductive system emergency, providing suitable interventions for real or potentially fatal alterations in the GU system, and proving this capability during an emergency delivery.

In addition, information regarding the emergency care nurses' years of experience, education, training program, and age was provided.

**Tool II: Core competences of communication and teamwork skills for emergency nurses.**

This instrument was taken from the Emergency Nurses Association (2018) (9) and is designed to evaluate the core abilities of emergency nurses, which are collaboration and communication. It has eight items: three measure the fundamental capabilities of teamwork, and five measure communication abilities.

**Tool III: Core competences of professional development, organization awareness, research, and quality improvement for emergency nurses.**

In order to evaluate emergency nurses' fundamental skills in research and quality improvement, organizational awareness, and professional growth, this instrument was taken from the Emergency Nurses Association (2018) (9) (9)). There are twelve statements total: four for evaluating professional growth, three for evaluating organizational awareness, two for evaluating research, and three for evaluating quality enhancement.

**The three tools were scored using the following methodology:**

Using tools I, II, and III, the researchers assess each emergency nurse's core competencies in accordance with Benner's phases of clinical competence. Each item's score is allocated as follows:

1. Novice: Lack of prior knowledge.
2. Advanced beginner: Knowledge is growing and performs satisfactorily; she has some practical experience but needs guidance and assistance from a mentor.
5. Expert: Performance is now extremely competent and adaptable, operating from a thorough comprehension of the entire circumstance.

For each emergency nurse, the cut points for the overall score of key skills are: -Good" if the score is 75% or higher. If the overall score falls between less than 75% and 60%, it is considered fair.

-If the overall score is less than 60%, it is poor.

3. Competent: usually has two to three years of experience in a single field; lacks the quickness and adaptability of a skilled nurse but is somewhat knowledgeable and can rely on organizational and planning abilities.
4. Proficient: Acquires independence in using the talent or skills; sees and comprehends circumstances as complete components.

**Data collection:**

Permission to conduct the study was given once the relevant authorities at both hospitals were informed of its goal. To test all tools for clarity, objectivity, and feasibility, a pilot research involving seven emergency care nurses was carried out. Any necessary adjustments were made, and the results were removed from the study. . All emergency care nurses received a comprehensive verbal and written explanation of the trial, along with the chance to voice any concerns or ask any questions. Following receipt of the necessary data, the nurses of the participants were asked to get their written and verbal agreement to participate in the study. Using tool I, the researchers observed the emergency department nurses and evaluated the clinical skills criteria and core competencies pertaining to the neurological, gastrointestinal, cardiovascular, respiratory, and genitourinary systems while managing critically ill patients.

The researchers used tool I to observe the nurses in the emergency room and evaluate their clinical skills and core competencies related to the respiratory, cardiovascular, neurological, gastrointestinal, and genitourinary systems while managing critically ill patients; tool II to evaluate their communication and teamwork skills; and tool III to evaluate their professional development, organization awareness, research, and quality improvement. Each nurse's core competency tool score was determined by the researchers, who assigned a "good" rating if the overall score was greater than 75%, a "fair" rating if the overall score was between 60% and less than 74%, and a "poor" rating if the overall score was less than 60%.

**Ethical consideration:**

The ethical committee gave its approval to a research request. When the research is used, there is no risk to the study participants. Nurses who are interested in taking part will be told about the study's purpose and nature before their informed permission is sought. Data from the study will only be used for scientific research. Confidentiality and anonymity are assured. Nurses are free to refuse to participate in study at any moment and without explanation.

**Statistical analysis:**

Version 23 of the statistical package software (SPSS) was used to analyze the study's data. The mean, standard deviations, and descriptive statistics like frequency and distribution were used to characterize various features of the quantitative data. The average percentage score for the core competencies of both emergency nurses was determined.

**Results:**

**Table 1** indicates that 45.7% of the nurses under study were in the 30- to 39-year-old age range. In terms of education, 65.7% of the sample under study, have secondary nursing school diploma . In terms of their prior training , 91.4% of the nurses working in the emergency rooms have participated in clinical skill development sessions. In terms of years of experience, 58.6% of nurses, respectively, had worked in each institution for 6–10 years.

**Table 1: frequency Distribution of sociodemographic data for the studied emergency nurses**

(n =210)

Items	No	%
<b>Age</b>		
18 - < 30 years	39	18.6
30–<40 years	96	45.7
40–49 years	75	35.7
<b>Level of Education</b>		
Diploma	138	65.7
Technical nursing institute	18	8.6
Bachelorette	54	25.7
<b>Training program</b>		
None	18	8.6
Present	192	91.4
<b>Experience</b>		
<5 years	33	15.7
5-10 years	123	58.6
>10 years	54	25.7

Table 2 pointed the level of competencies among studied nurses, it can be seen that collaboration and team work had the highest competencies, followed by communication skills, professional development ,neurological competence( 87.52; 83.26; 81.79; 81.71; 81.68; 80.22; 79.95) respectively , while research competency were the lowest score ( 20.71%).Moreover the overall competency skills among studied nurses were high (78.05)

**Table (2): the mean score of core competence criteria for emergency nurses (n = 210)**

Core competences	Max Score	Mean ±SD	Mean%	Rank
Respiratory	80	62.2±11.18	77.75	9
Cardiovascular/Circulatory	135	107.87±22.75	79.90	8
Neurological	50	40.86±7.61	81.71	4
Gastrointestinal (GI)	30	23.99±5.36	79.95	7
V: Genitourinary (GU)	45	36.76±8.51	81.68	5
Reproductive Male and Female	45	36.1±7.24	80.22	6
Communication skills	25	20.81±4.22	83.26	2
Teamwork/collaboration	15	13.13±2.23	87.52	1
professional development	20	16.36±3.97	81.79	3
Organizational awareness	15	10.89±3.42	72.57	10
Research	10	2.07±0.35	20.71	12
Quality improvement	15	5.1±2.54	50.10	11
Total	485	378.54±65.48	78.05	

Figure 1 illustrated that nearly two third of nurses had good level of competencies in emergency units.

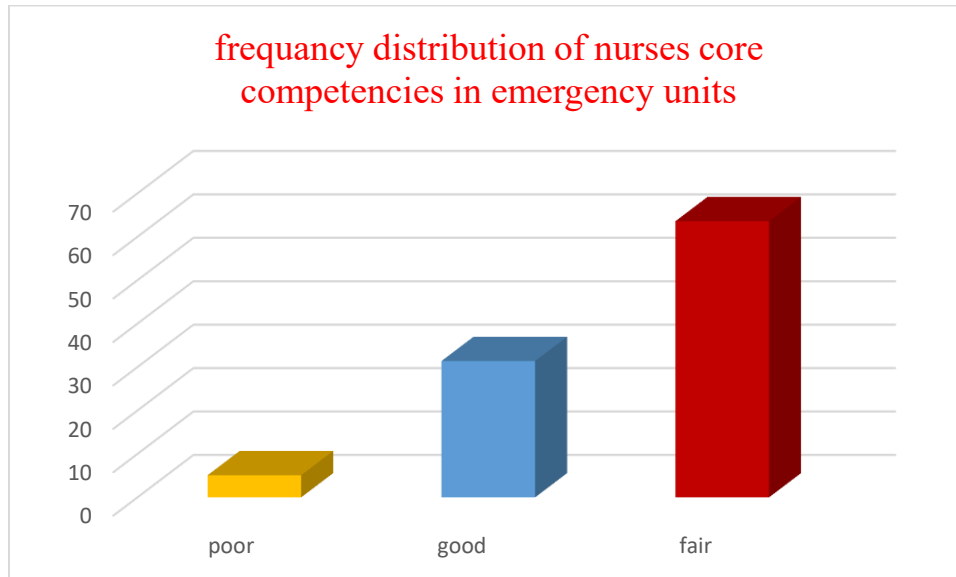


Figure 1 the level of competencies

#### Discussion:

Core competencies can be utilized as a guide for nursing education to improve the quality of care provided because emergency nurses are essential to patient management. The quality of care for patients will increase if nurses are empowered through seminars and educational programs to increase their expertise. To create an instrument that is both valid and dependable, more study is required.

The overall competency of emergency nurses suggested a good level of perceived competence, according to research conducted in Iran and the United States to evaluate their clinical abilities [13, 14].

These results are consistent with ours, which showed that emergency nurses reported a high degree of competency.

A study conducted among Saudi Arabian nurses revealed a lower degree of critical thinking competency, which is consistent with our findings [3]. Nursing professionals' ability to think critically is extremely important while making decisions for patient management and using clinical judgment in emergency situations. According to a recent study, emergency care nurses' clinical decision-making and critical thinking skills significantly positively correlate [15]. Researchers have found a substantial correlation between frequent clinical skills performance in the various domains and higher self-reported competency levels [3, 14]. According to McCarthy et al., emergency department nurses were shown to have a higher perceived level of proficiency for diagnostic and assisting roles in the clinical skills domain [7]. However, researchers found a link between advanced and specialized nursing care and less commonly displayed clinical skills [16]. Therefore, in order to increase their experience with less common clinical activities and reach a better level of proficiency, emergency care nurses must obtain more training and knowledge. Consequently, mistakes and failures brought on by incapacity to detect patients' status correctly and the management [17].

Despite the fact that advanced nursing roles and practices have been growing globally, nursing personnel perform specific tasks poorer due to unclear chain of command status, authority, and job ambiguity [18, 19]. The Emergency Nurses Association states that in order to improve their abilities and apply them to the assessment, planning, intervention, and evaluation of patients in the emergency department, emergency nurses must complete a number of supplementary courses [20].

In this regard, the study's conclusions are consistent with those of past research and writings that have emphasized the value of knowledge and experience in making decisions throughout the triage process. Research has shown that experience is one of the most important and useful factors in nurses' decision-making for patient triage (Andersson et al., 2006). More experience has also been found to improve decision-making stability in triage situations, according to an American study by Hicksetal (2003). Additionally, compared to the emergency department nurses at King Fahd Hospital, who had a degree of knowledge exceeding 70%, the emergency department nurses at the Dammam Medical Complex (DMC) in Saudi Arabia had a level of knowledge below 70%, which is considered a mediocre score. This can also be explained by the fact that nurses' inadequate triage knowledge is a result of a lack of proper training and educational opportunities, and that nursing curricula in various programs do not adequately

prepare nurses for the triage system in emergency rooms (Javadietal., 2016).Furthermore, the low level of nursing awareness indicates that nurses' triage knowledge has been inadequate and necessitates retraining and continued education (Reisiet al., 2018). EDs and organizations must encourage auditing by giving triage nurses enough time to complete the audit in order to give the triage nurse s with pertinent and useful feedback.

Our study's ability to precisely determine the clinical and administrative competency levels of nursing staff employed in emergency rooms is one of its strong points. The development of focused plans for the competency domain that requires more attention can be aided by this knowledge. The investigation was carried out in the emergency rooms of seven public hospitals spread across a wide geographic area.

### Conclusions

Regarding the majority of the fundamental emergency nursing competences in our study, the emergency department nurses reported having enough knowledge. Nonetheless, some nurses continue to fall short of expectations and express gaps in their perceived competencies. This need more regular chances for educators and senior nursing professionals to train nursing staff members. It is possible to develop time and resource-efficient targeted strategies in particular clinical skills domains for emergency care nurses' skill development and training.

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