

# Examining Trauma Care Skills in Emergency Rooms: A Theoretical Study of Nursing Expertise

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## Abstract

*The emergency department in trauma care needs nurses who are of high competence level where skills such as critical thinking, swift decisions, and technical competence as well as emotional stability are necessary. The conceptual mapping focuses on what trauma nursing competency is, what it entails, what may cause it and what results may be because of it within the background of emergency care. The analysis applying an integrative framework indicates that such essential foundations of competence include: clinical expertise, communication, teamwork and patient-centered care. This research also identifies such antecedents of competency development as organizational support, continuing education, and simulation-based training; their key outcomes include better patient outcomes and fewer medical errors as well as physician confidence and its growth. Clarifying this theory can form a basis of standardized competency structures, specific training and future study to enhance the care of trauma in high acuity emergencies setting.*

**Keywords:** Trauma nursing, emergency department, nursing competence, clinical expertise, conceptual analysis, patient outcomes, professional development, critical care skills.

## 1.Introduction

EDs are located at the very frontlines of healthcare systems at a worldwide scale, and thus, the nurses serving at those frontlines are engaged with patients facing some of the most critical and time-sensitive clinical conditions. These problematic situations include, among others, trauma cases which are a unique type of case that will demand nursing skills beyond the normal nursing skills in emergencies. The idea of competency related to trauma nursing is multidimensional in terms of its knowledge, skills, and professional conduct that allow nurses to perform the best practice during the golden hour in case of traumatic injuries.

Trauma patients also have their specific challenges which marks them as different to other emergency department patients. These patients usually come with numerous injuries on their systems, impaired physiological ability, and they are not in a position to explain their medical history or report their symptoms with limited communication. The unpredictable phenomenon of traumatic processes- including but not limited to motor vehicle accidents, falls, penetrating injuries, and blunt injuries- requires that emergency nurses have quick-think abilities and advanced clinical judgment. In comparison to patients with known diagnoses, who are treated in special departments, the trauma cases demand quick whole-scale assessment where one minute may save the life and prevent lifelong disability(1).The intricacy of the trauma nursing goes beyond technical knowledge to incorporate the psychological, emotional aspects of this specialty field that are frequently underemphasized in traditional competency models. Trauma patients and their families undergo unexpected, sudden crises and this evokes fear, anxiety, and confusion. Emergency nurses have to interact with life threatening physiological conditions, as well as provide emotional support and transparent communication to patients and their families in low visibility and intense stress environments. This two-fold role demands not only clinical but also emotional intelligence and interprofessional collaboration skills that help build successful cooperation in the situations of high pressure.

Currently applied trauma nursing competency education, as valuable as it may be, has a considerable short-coming in its application and coverage. Existing trauma care programs (Advanced Trauma Care Nurses and the Trauma Nursing Core Course mostly focus on technical skills and pathophysiology knowledge, therefore, they overlook and do not cover most of the broader competency areas of trauma care. These conventional paradigms fail to provide adequate context to the emotional nursing needs, interprofessional healthcare team collaboration, and fast-paced judgments by the emergency department trauma nursing professionals.

In addition, the current competency assessment instruments do not take the unique needs of divergent clinical environments into account. In emergency departments the working conditions are completely different to intensive care units, or medical-surgical floors, so as the competency assessments hence, the assessment criteria tend to be

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generalized without taking into consideration the unique demands of rapid triage, initial stabilization and resource prioritization that is involved in emergency trauma care. The discrepancy between the theoretical models of competency and the practice in the real world poses procedural problems when it comes to both the individual advancement of nurses and organizational quality enhancement activities.

Lack of clearly specified and context-specific competency attributes interferes with the development of evidence-based educational interventions and performance measurement systems as well. Lack of a consensus on the key elements of trauma nursing competency proficiency in emergency facilities hinders appropriate training programs to be implemented in healthcare organizations, adequate staffing patterns to be established, or opportunities to assess effectiveness of quality improvement interventions to be achieved(2). This lack of definition ultimately leads to a degradation of patient safety and optimum outcomes at critical times of trauma resuscitation.

The research shows that specialized trauma competencies in nurses have a significant positive outcome on the quality of patient treatment resulting in less mortality rates, less days of stay, and better functional outcomes following traumatic attacks. To realise these gains, however, it is important to identify and develop the particular competency characteristics that confer high-performance in emergency trauma care. This requires the need to surpass generic models of nursing competency to develop specialized framework that will underscore the unique knowledge, skills and professional behaviors in practicing as a trauma nurse in the emergency department.

The refinement of precise definitions of trauma nursing competencies helps with overall healthcare system goals, such as proactive education (interprofessional), quality assurance, regulation, and compliance. Introduction: Trauma care is a multidisciplinary effort that may increasingly find its role in the work of diverse health professionals in a team effort to address care needs throughout a patient journey. The coordination of care between various health professionals is greatly aided by the use of clearly defined nursing competencies that help in role clarity, better communication, and collaborative decision-making that enhances coordination of care around the patient. Regulatory bodies and accreditation organizations also insist on demonstration of competency-based practice and therefore well-defined competency frameworks are instrumental in facilitating organizational compliance and their continuous improvement activities.

The current healthcare paradigm considers that the patient-centered care model should take into account needs, preferences, and values of an individual throughout the care process. In the case of trauma patients, this method demands that nurses are well equipped to build therapeutic relationships fast, offer culturally-sensitive deliveries, and be able to communicate with and between patients/families in the context of crisis management. These patient-centered care needs are not well-addressed by the traditional competency models, and this aspect heralds the potential of comprehensive frameworks, which effectively incorporate both technical competencies and the relationship-development, as well as the communication tool sets that are needed to provide comprehensive trauma care.

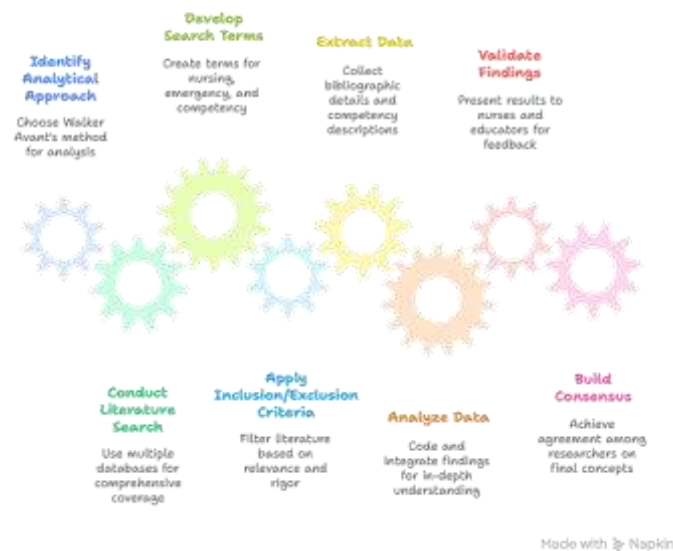
## **2.Methods**

In this study, the systematized approach to analyze and explain the concept of trauma nursing competency in the emergency department settings was used, as adopted by Walker Avant and their eight-step concept analysis procedure. The choice in favour of the given analytical approach was not random, because it offered a well-ordered framework of breaking down complex, ambiguous notions with no clear operational definition in the modern literature. The approach suggested by Walker and Avant is especially useful when analyzing nursing concepts that have to be clarified in order to apply them to the clinical practice, education, and research activities(3).

The theoretical grounding of this analysis is that competency is a moving construct that has cognitive, psychomotor, and affective areas of nursing practice. Competency means a combination of factors unlike some of the prevalent skills inventories or knowledge testing because it involves skill/expertise, deliberative skills, skills of a technical nature, personal skills, and judgment in element of specification and place. This philosophy of conceptual analysis approach makes the understanding of the meaning of the area of expertise, that is, trauma nursing competency, not a reductionist study of its parts but rather an exploration of attributes that are inter-related in the absence of which the meaning of the whole cannot be realized.

The methodology framework integrates some of the effectual principles of the concept development theory, which argues that the progression of professional concepts entails the iterative procedures of definition, application, evaluation, and refinement of the professional concepts. The importance of this evolutionary understanding is that the definition of trauma nursing competencies needs to be dynamic to respond to the advancing knowledge on

clinical practice, changing technologies, patterns of patient care, and emergency care delivery procedures. The analysis has thus not endeavoured to come up with fixed, unchanging definitions but has tried to unearth attributes that form underlying knowledge without seeking to eliminate the possibility of their future development(4).



**FIGURE 1** Trauma Nursing Competency Analysis Process

### The literature search strategy and database selection

To achieve the above, the extensive literature search strategy was underpinned by the use of various databases to ensure wide coverage of the available relevant scholarly work within the nursing, medical, and interdisciplinary healthcare literature. Main databases were PubMed to search biomedical literature, CINAHL to search nursing and allied health literature, EMBASE to search European medical literature, and RISS to search Korean domestic research. This multi-database strategy was necessary due to the cross border nature of trauma nursing practice, as well as variability cross culturally or geographically, in the definition of competencies(5).

The search term development followed recommended approaches to the concept analysis study using both controlled vocabulary approach and free-text search strategies. The Boolean search strategy included the search of terms related to nursing practice (nurs\*, nursing), the emergency-related care setting (emergenc\*, emergency department, trauma center), the trauma-related care (trauma, injury, critical care), and the competency concepts (competenc\*, capabilit\*, skill, proficienc\*). Truncation and wildcard characters were used in order to accommodate diversity of terminologies and spelling standard across databases and journals where information was found.

The rationale behind omitting the time limitation on the search strategy was that a concept analysis was intended as exploratory in nature and that early literature in the area of competency could be dated many decades. This aural temporal breadth facilitated identification of seminal works that formed theoretical underpinnings, as well as the contemporary studies that identified and addressed contemporary practice issues. The search was however limited to English and Korean language publications since the research team was limited by its linguistic capabilities and the researchers also focused mainly on the geographic aspect of the research.

### Inclusion / Exclusion Criteria Development

Stringent rules of inclusion were laid down so that the literature selected was relevant in the study of competency of trauma nursing in the emergency departments. Publications had to specifically state nursing skills, abilities or competencies of the trauma patient moreover; they would then have to be linked to the emergency department or comparable various healthcare-related acute care settings. The criteria were literature that dealt with other healthcare professionals unless the competencies of nurses were a specific topic, and literature that was conducted in a non-emergency setting, intensive care unit, medical- surgical unit, or other rehabilitation centers.

The qualitative assessment criteria were methodological rigor as well as relevance to the concept understudy. Research articles, systematic reviews, concept analyses, and theoretical articles were given priority, whereas the

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gray literature such as conference abstracts, policy literature, and unpublished reports were excluded because they lack scholarly rigor. Editorials and opinion articles were not included unless they made a contribution of value to theory on the subject of competency or were by recognized experts in either trauma nursing or competency development(6).

Non-English and non-Korean literature was partially excluded, but it is understandable with regard to the resources available and the uniqueness of the nursing competency terminology, which must be accurately translated and adapted to the culture. Equally, the limitation to published sources of information excluded potentially useful practice-based knowledge and developing ideas that had not yet reached publication, which was noted as a limitation by the research team.

### **Data extraction and analytical procedures**

Data extraction was carried out systematically to obtain all aspects that need to be considered in the concept analysis without inconsistency in results by different reviewers. The format of extraction form was generalized to collect bibliographic details, study methods, characterization of the participants, definition or description of the competencies, attributes identified, antecedents, consequences and the empirical referent cited in each publication. This guided methodology provided a systematic way of collecting data even though it did not rule out emerging themes and findings(7).

The data analysis process was carried out through several steps of examining the data, which were divided into general learning of the literature and searching the literature body regarding the competency-related material. The first coding was done on explicit competency definitions, description or models found in literature. Secondary coding focused on implicit elements of competency inherent in the discussions of trauma nursing practice, education or assessment. Tertiary analysis was used to integrate findings of identified elements to formulate in-depth grasping of the concept attribute, antecedents and consequences.

The collaborative analysis processes consisted of individual review of subsets by each researcher followed by group discussions to come up with common themes and attribute. This performed the task of increasing analytic precision as well as decreasing biases that could be brought about by individuals and could affect the interpretation of concepts. Repeated team meetings involved a continued discussion of emerging themes, airing of disputes over analysis, and clarification of understanding of the concepts over the course of the analysis effort.

### **Validation and Consensus building Methods**

The concept analysis has been done with various validation strategies to allow increased credibility and reliability of the findings. Checking procedures on member checking conducted included presentation of initial results to informed trauma nurses and nurse educators on face validity of identified attributes and their consistency with realities of clinical practice. This validation offered the possibility to sharpen the concept understanding through expertise brought by practice and reveal possible knowledge gaps in the competency framework developed based on the literature sources.

The hiring of expert panel review procedures was conducted to enlist well-established scholars in the fields of trauma nursing, emergency care, and nursing education to review the concept analysis findings on the comprehensiveness and accuracy of the concept analysis findings. The panel members commented on the relevance of identified attributes, logical consistency of antecedents and consequences, the possible applicability of the framework to the practice, education, and research settings, etc. The professional verification boosted the faith in the analysis results as well as the indicating of the areas to further development or modification.

We adopted Delphi type of consensus building processes that sought to bring about consensus among the research team in terms of defining final concepts, formulation of attributes specifications as well as framework elements. Rounds of discussion and re-writing ensued until significant consensus was reached on all major points of the concept analysis. This repetitive Republican process of consensus made sure that the end result consists of communal opinion of experts and not individual ideas.

## **3.Results**

### **Conceptual Foundation y Dictionary Analysis**

The analysis found core definitional elements that form the conceptual framework of what the trauma nursing competency is in emergency departments. The Dictionary sources were used to offer basic knowledge as they break the term down into its underlying components: trauma, nursing, and competency. The Oxford Advanced Learner s Dictionary defines trauma by covering both physical wounding and psychological pain caused by terrible

soul shock or dread as it has two-dimensional meaning not limited to medical meanings. The expanded conceptualization is important in practice of emergency nursing, where the trauma patients come in with complicated amalgamation of physical and psychological injury, which needs concurrent work on them.

The definition given in The Cambridge Dictionary puts an emphasis on trauma as a physical harm that is normally a result of accidents or assaults, which forms a clinical basis of how to approach trauma in nursing. Taken together with definitions of nursing that are related to skilled care of sick or injured persons, as well as the definitions of competency that refer to any ability and crucial skills, the integrated concept would be the expertise to deliver comprehensive care to those individuals who were under the impact of physical and psychological trauma-related distress.

This definition analysis has illustrated significant differences between the general nursing competency and those issues which require trauma-specific needs. Although generic competency models have been developed to describe general nursing skills applicable in a wide range of settings, trauma nursing competency model involves additional expertise on the nature of injuries, speed of emergency evaluation and critical case interventions that are unique to emergency practice settings. The analysis conducted in the dictionary determined that effective competency in trauma nursing has to combine technical competence and emotional intelligence/being quick enough at making decisions.

### Literature synthesis and attribute identification

As a result of inclusive eligibility screening and rigorous processes, twenty studies were identified which met the systematic literature review inclusion criteria. These works reflected a variety of methodological solutions such as quantitative studies by means of surveys, qualitative ones through interviews, mixed-methods research, conceptualization, and theoretical background. The geographic distribution included papers on North America, Europe, Asia, and Australia and offered global insights into competency conceptualization regarding trauma nursing.

By repeating the analysis of the same sources, six central characteristics were identified that cumulatively constitute the notion of trauma nursing competency in emergency departments. These attributes are unique but related competency areas that a trauma nurse must combine to offer the best practices to patients. There were several iterations of analysis, coding, and reaching a consensus among research team members that resulted in the process of making the key target-competencies capture more exhaustive, yet conceptually simple and practically significant.

**TABLE 1** Literature Characteristics and Distribution

Category	Details	Count/Percentage
<b>Total Studies Included</b>	Final analysis corpus	20 studies
<b>Geographic Distribution</b>	North America	8 (40%)
	Europe	5 (25%)
	Asia	6 (30%)
	Australia	1 (5%)
<b>Study Design</b>	Quantitative surveys	7 (35%)
	Qualitative interviews	5 (25%)
	Mixed methods	4 (20%)
	Concept analyses	2 (10%)
	Theoretical frameworks	2 (10%)
<b>Publication Timeline</b>	2015-2019	8 (40%)
	2020-2023	12 (60%)
<b>Setting Focus</b>	Emergency departments only	14 (70%)
	Mixed emergency/trauma centers	6 (30%)

The process of identifying attributes showed that a lot of overlap occurred with general nursing competency frameworks albeit with special features of the preparation of trauma nursing settings. Trauma nursing competency focuses on efficiency in acute response, coping with uncertainty, and multi-system considerations that may facilitate nimble operation during unstable, high-intensity cases that become likely in a trauma care environment.

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### **Core Competency Attributes**

#### **Personality test**

The first thinkable feature involves the capacity to perform quick and systematic initial tests that involve the knowledge of the mechanics of injury and their possible impact. This proficiency goes beyond standard physical examination procedures to encompass knowledge of kinematics, pattern-recognition and predictive clinical reasoning skills that make possible the determination of any instances of occult injury and foreknowledge of upcoming complications before they mature into clinical manifestations.

Trauma nurses who possess this competency have advanced knowledge on how specific forces and mechanisms cause specific injury patterns. They are able to match mechanisms with clinical manifestations to facilitate prioritization in assessment and follow sequence in treatment. The attribute demands the incorporation of wider scope including physics principles, knowledge of the anatomy as well as clinical understanding to give quick and precise decision-making regarding injuries and care priorities.

#### **Priority based decision making**

The second attribute concerns the ability to quickly develop a list of priorities of treatment according to the analysis of urgency and severity and respond to several conflicting demands within resource-limited settings. This competency demands the clinical reasoning skills that will allow nurses to summarize the intricate pieces of information swiftly and make decisions that will result in optimization of the outcomes in terms of many patients. Nurses who possess this trait are able to perform triage on patients using an organized method and are also flexible in their approach so that as conditions vary priorities can also alter. They have cognitive abilities to dichotomise between life-saving issues on the one hand and the long-term requirements at the expense of making sub-optimal use of resources under stressful situations. This competency incorporates the knowledge about clinical issues with ethical reasoning and judgment in practice(8).

#### **Specialised Clinical Knowledge**

The third characteristic is inclusive knowledge in trauma pathology, evidence-based treatments and special procedures necessitated in offering emergency trauma. This body of knowledge encompasses more than an ordinary nursing degree to involve in-depth knowledge of shock states, compartment syndromes, traumatic brain injury, and other complex conditions which are prevalent in trauma populations.

This is a competency that requires constant learning and updates of knowledge since the practice surrounding trauma care constantly develops new research and technology. Nurses need not only know how to provide certain (I) interventions, but also the physiological reasoning behind these (I) interventions and the anticipated outcomes. This information is the basis of the clinical reasoning and decisions in complicated trauma cases.

#### **Trade Skill proficiency**

The fourth attribute implies the command of specialized technical procedures and skills to deal with trauma resuscitation and stabilization. Examples of such skills are enhanced airway management, management of hemorrhage, spinal immobilization, and other life-saving measures that should be executed in emergency situations and quickly adequate under competing stress.

Technical proficiency needs not only a one-time achievement of competency but also a competency upholding and validation using regular practice. Trauma nurses are expected to be able to undergo complex procedures with guaranteed results and patient safety and comfort. This quality combines motor skills with the situational adaptability.

#### **Collaborative Teamwork**

The fifth domain will revolve around being able to work well in multidisciplinary trauma teams without any misunderstandings being created, sibling responsibility, and coordinated care. This competency implies the knowledge of team dynamics, communication strategies, and principles of interprofessional collaboration that makes a team maximally efficient at the time of high-stress situations.

Collaborating with the trauma team members effectively requires nurses to effectively present patient information, coordinate patient care with other team members, and modify their roles, based on the composition of the team and the needs of the patient. Such attribute encompasses the skills of conflict resolution, leadership skills, and the skills of handling professional relationships when pressure mounts(9).

#### **Whole-sale Emotional Service**

The sixth trait is the ability to extend overall care to patients with trauma and their relatives as well as the ability to deal with the emotional aspect of trauma nursing practice. Such competency goes beyond the technical skills, but extends to therapeutic communication, crisis intervention, and family support skills.

The attribute identifies that trauma experiences bring about a high level of emotional distress that involve special intervention methods. Nurses should be emotionally intelligent, culturally aware, and be able to communicate effectively as they provide support to help others in a manner that does not cross professional boundaries and **endanger personal well-being.**

#### **Prior Factors and Pathways of Development**

The review produced four main antecedent factors of building competency in trauma nursing, which are the clinical experience, the formal education, the organization culture, and the emotional intelligence. These are all synergistic factors and any approach that addresses a single antecedent domain may not be more effective than a comprehensive strategy that resets the conditions across multiple antecedent domains in order to facilitate or hinder competency development.

Clinical experience is revealed as a core necessity in competency development with imperialism delivered at the location of incentive of skill use, an acquisition of recognition of patterns, and the acculturation of assurance courting booting of a scenario of patient success. Nevertheless, experience by itself is not enough without well-designed learning experiences that allow its reflection, integration of knowledge, and the opportunity to hone skills. It was found that competency development mandates the presence of exposure to various cases of traumas as well as experienced mentors who would guide the process of learning through these experiences.

Formal education programs that include trauma specific courses, and simulation-based education programs offer more formal opportunities in practice to gather knowledge and develop skills as complement to a clinical experience. The quality of the education interventions are determined on how they resonate with the practice needs and how they integrate with clinical experiences that are maintained. The discussion indicated that competency-based education model is more effective than a time-based education training model.

#### **Takeaways or Impact Assessment**

The exploratory analysis revealed several positive effects connected to an increase in trauma nursing competency in the emergency department. Outcomes that are patient-centered are low mortality rates, minimal levies rates, less length of hospital stay, and higher functional recovery after trauma. Such results are representative of not only the immediate effects of effective nursing on patient physiology and trajectories of recovery.

At the organizational level, the impact is better performance of the whole team, better quality indicators, exposure to less liability and a better organization reputation in terms of trauma care excellence. These wider effects imply that investments in the development of competencies in the field of trauma nursing can be paid off not only in terms of patient-level outcomes but also in the performance of the organization and the health of the community. Nurse-specific effects are the experience of added job satisfaction, sense of professional confidence, lower burnout levels, and better chances to increase career advancement. These career developmental and career advancement advantages induce positive feedback effects that allow sustaining competency enhancement and retention of personnel with a background in trauma nursing, which otherwise becomes a critical issue in many emergency departments due to staffing problems.

## **4. Conclusion**

This concept analysis helps fill a critical gap in the nursing literature by offering the first detailed analysis of trauma nursing competency in-bound to the setting of the emergency departments. The fact that six core attributes have been identified, namely rapid mechanism-based assessment, priority-driven decision making, specialized clinical knowledge, proficiency of technical skills, collaborative teamwork, and holistic emotional care, provides the necessary groundwork into distinguishing competency nursing levels in the field of trauma nursing against the general emergency nursing level of proficiency. This difference is key to establishing specific educational interventions, competency assessment tools, and strategies to produce improvement in performance that is sensitive to trauma care settings concerns.

Incorporation of emotional care as a competency attribute is an interesting contrast to the current trauma education models which majorly focus on technical skills and pathophysiology knowledge. This addition indicates increased awareness that trauma experiences have psychological components that are in need of special nursing action beyond those used to address physical injuries. Trauma nursing education programs show inadequate preparation to provide emotional care, implying that there are considerable shortcomings between determined competency needs and curricular applications.

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An examination of the concept indicates critical divisions between holistic nurse philosophy and rapid-response and protocol-heavy emergency trauma response. Although holistic care theories underscore the importance of patient-centered and individualized assessment and treatment plans, the trauma nursing competency does not allow individualized approaches as there is the necessity of a standardized assessment and treatment plan that could be implemented quickly and applied to a variety of patients. This tension indicates that competency development of trauma nurses needs to address efficiency demands and principles of personalized care, which necessitate an advanced level of clinical judgment that cannot be achieved by following the protocols only.

The identified competency framework is straightforward in terms of offering guidance on nursing practice development in the emergency room, but there are significant organizational/system barriers to adoption. In most emergency departments, it is true that the current staffing models do not distinguish the general emergency nursing roles with the specialized trauma nursing roles and this results in workforce assignments where nurses who lack adequate traumainformed competency may end up working with critically injured patients. The framework implies that a healthcare organization ought to address the issue of trauma nursing specialization pathways that acknowledge the identified competency requirements unique in the context of nursing and trauma nursing.

The inclusion of interprofessional teamwork as a core competency attribute underlines the importance of collaborative practice models, which are beyond institutionalized nursing education and competency development practices. Interprofessional education and competency assessment involving team-based education and role clarity are the only way to achieve effective trauma team functioning through shared mental models and use of standardized communication protocols. Nevertheless, the majority of nursing competency frameworks are framed in terms of the individual nurse performance competencies instead of focusing on the team-based performance, which indicates the apparent mismatch between competency models and the actual needs of practice.

The study results suggest that trauma nursing competency development should be based on the experiential learning opportunity which is not always available in the emergency departments because of the variability in the patient volumes and their case mix. The importance of simulation-based education as a part of competency development becomes particularly apparent as many institutions do not currently have funds to cover a high-fidelity simulation program capable of suiting the complexity and nature of a real traumatic resuscitation process. Such lack of resources can cause long-term competency lapses that undermine patient outcomes and nurse confidence.

The results of the concept analysis indicate that upcoming profound changes are needed in the trauma nursing education, so that it could match the outcomes to the stated competency requirements. The existing trauma education programs are characterized by the overemphasis on the knowledge acquisition and competencies of the technical skills development with no or few references to competencies in clinical reasoning, emotional care, teamwork, etc. Competency-based objectives must be incorporated in the educational curriculum and accommodate all the six attributes by creating a series of increasingly complex skills and validating the competencies conducted in stages.

The concept of emotional care is a core competency which makes the work of nursing educators more demanding as they have to come up with new teaching methods to prepare the nurse to handle the emotional requirements of trauma care. Conventional classroom training is also insufficient to build up therapeutic communication skills, crisis intervention proficiencies, and emotional resilience to be used by a trauma nurse to develop a manner of trial and error. In working towards these complex competencies, simulation-based education, standardized patient encounters and clinical mentorship programs may be more effective.

The research findings demonstrate the essence of competency based assessment strategies which involve assessment of integrated performance as opposed to assessment of isolated knowledge or skills. The existing assessment methods place much stress on single competency components rather than looking at the multiple competencies that the nurses integrate in situations involving complex trauma. Evaluation procedures must include the use of scenarios so that nurses are asked to exhibit the concurrent application of all competency attributes in state-of-realism situations.

Based on this concept analysis, future studies on the development of competency, assessment and validation in trauma nursing will have a framework to rely on. Research should be conducted on the development of the instruments to measure reliably and validly the identified attributes of competency so that they can be used across the variation in emergency departments. These tools would allow one to conduct systematic assessment of educational interventions, competency establishing programs, and performances of the individual nurses in clinical cases of trauma.



The longitudinal study that focuses on analyzing the pattern of competency development may give some answers to the crucial questions of the accurate educational sequence, the level of experience required, and how to promote career advancement to the realm of trauma nursing specialty. Knowledge of the trajectory of the development and maintenance of nurse competency throughout their career, as well as the acquisition of new skills, would help in formulating retention strategies, continuation education needs and much more on career development support systems as they are relations of high turnover rates related to the emergency nursing field.

The connection between trauma nursing competency and patient outcomes needs to be properly studied with control over the acuity of patients, organizational directions, and team composition variables. Although this review indicates the positive results of competency enhancement, uncertainties in terms of indicators and relationships between competency enhancement and the desired outcomes should be investigated further to support the evidence-based practice models and resource-allocation decisions.

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### Conflicts of interest

The authors have no conflicts of interest to declare

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