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Research Article

DETERMINANTS OF TRAUMA COMPETENCY AND AWARENESS IN TERTIARY CARE HOSPITALS: IMPLICATIONS FOR NURSING EDUCATION AND POLICY

[1*]Ranjna Singh Bhadauria, [2]Perpetua R Fernandes, [3]Varsha Balakram Surkar, [4]Sujata Poonia, [5]Gargee Karadkar, [6]Chintal Shukla, [7]Farzana Begum

[1]Govt. JK Cancer Institute, Kanpur, Uttar Pradesh, India
[2]St Andrews College of Nursing, Pune, Maharashtra, India
[3]YES, Tirpude Nursing College, Nagpur, Maharashtra, India
[4]Smt. Vidyawati college of Nursing, Jhansi, Uttar Pradesh
[5]Bharati Vidyapeeth (Deemed to be University), College of Nursing, Navi Mumbai
[6]Krishna School of Nursing, Drs Kiran and Pallavi Patel Global University, Varnama, Vadodara, Gujarat
[7]SUM Nursing College, SOA University, Phulnakhra, Cuttack, Bhubaneswar, Odisha

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ABSTRACT

Trauma is a major cause of morbidity and mortality worldwide, and tertiary care hospitals play a crucial role in managing trauma patients. Nurses are frontline healthcare professionals responsible for early assessment, stabilization, and continuous monitoring of trauma victims. However, the level of trauma competency and awareness among nurses varies depending on several individual, organizational, and educational factors. This paper explores the determinants influencing trauma competency and awareness among nurses working in tertiary care hospitals and discusses their implications for nursing education and healthcare policy. Evidence from recent studies indicates that factors such as professional education, clinical experience, training programs, institutional protocols, and inter-professional collaboration significantly influence trauma care competency. The findings highlight the importance of integrating trauma-informed care training, simulation-based education, and continuous professional development into nursing curricula and hospital training programs. Strengthening policy frameworks that support trauma training and resource allocation can improve the quality of trauma care and patient outcomes.

Keywords: Trauma competency, Trauma awareness, Tertiary care hospitals, Nursing education, Trauma-informed care.

INTRODUCTION

Trauma is a major global public health concern and remains one of the leading causes of death and disability across all age groups. According to the World Health Organization, injuries resulting from road traffic accidents, falls, interpersonal violence, and occupational hazards account for millions of deaths each year and leave many more individuals with temporary or permanent disabilities. In many developing countries, including India, trauma cases constitute a significant proportion of emergency department admissions, placing a substantial burden on healthcare systems and professionals. Tertiary care hospitals often serve as referral centers for critically injured patients and play a crucial role in providing specialized trauma management and advanced medical interventions. Within these healthcare settings, nurses are frontline healthcare providers who are responsible for immediate patient assessment, stabilization, monitoring, and coordination with multidisciplinary teams during trauma management. Trauma care requires rapid decision-making, advanced clinical skills, and effective communication among healthcare professionals. Nurses working in emergency departments, trauma units, and intensive care units are often the first professionals to assess injured patients and initiate life-saving interventions. Their responsibilities

*Corresponding Author: Ranjna Singh Bhadauria, Associate Professor, Govt. JK Cancer Institute, Kanpur, Uttar Pradesh, India. Email: singhranjna1988@gmail.com.

include monitoring vital signs, maintaining airway patency, assisting in resuscitation procedures, administering medications, and providing psychological support to patients and their families. Therefore, trauma competency among nurses is essential for ensuring timely and effective patient care. Trauma competency refers to the combination of knowledge, skills, clinical judgment, and attitudes required to manage trauma patients effectively in emergency and critical care settings (Kaur *et al*., 2021). In recent years, the concept of trauma competency has gained increasing attention in nursing practice and education. As trauma cases become more complex due to multiple injuries and comorbid conditions, healthcare professionals must possess specialized training and competencies to respond effectively to emergency situations. Research has demonstrated that nurses with adequate trauma knowledge and clinical training are more confident and capable of managing critically injured patients, which ultimately contributes to improved patient outcomes (Park *et al*., 2023). However, studies have also indicated that the level of trauma competency among nurses varies widely depending on factors such as educational background, clinical experience, availability of training opportunities, and institutional support. Education and training are widely recognized as important determinants of trauma competency among nurses. Nursing education programs provide the theoretical foundation required for clinical practice, but additional specialized training is often necessary to prepare nurses for the challenges of trauma care. Structured trauma courses, simulation-based learning, and continuing professional development programs have been shown to enhance nurses' knowledge and practical skills in trauma management (Liu *et al*., 2024). Simulation-based education, in particular, allows nurses to practice emergency procedures in a controlled environment, improving their confidence and decision-making abilities during real-life trauma situations.

Clinical experience also plays a crucial role in shaping trauma competency. Nurses who work in emergency departments or trauma centers frequently encounter critically injured patients, enabling them to develop practical skills and clinical judgment through repeated exposure. Experienced nurses are often better able to identify subtle changes in patient conditions, prioritize interventions, and collaborate effectively with multidisciplinary teams. Studies have indicated that nurses with greater clinical experience demonstrate higher levels of triage accuracy and patient assessment skills in emergency situations (Wantoro, 2023). Consequently, both formal education and practical experience are essential components in the development of trauma competency. In addition to clinical skills, awareness of trauma-informed care has emerged as an important aspect of modern trauma management. Trauma-informed care is an approach that recognizes the psychological and emotional impact of traumatic experiences on patients. It emphasizes the need for healthcare providers to create a supportive and compassionate environment that promotes patient safety, trust, and recovery. Nurses who are trained in trauma-informed care are better equipped to address the emotional needs of trauma patients and provide holistic care that considers both physical and psychological well-being (He *et al*., 2025). Organizational factors within healthcare institutions also significantly influence trauma competency among nurses. Hospitals that provide adequate resources, well-defined trauma protocols, and regular training opportunities tend to have higher levels of trauma preparedness among their staff. Interprofessional collaboration among healthcare professionals further enhances the effectiveness of trauma care by promoting communication, teamwork, and coordinated decision-making. Conversely, lack of training programs, insufficient staffing, and limited access to medical equipment can hinder the development of trauma competency and compromise the quality of patient care.

Despite the critical role of nurses in trauma management, several challenges continue to affect trauma competency in tertiary care hospitals. These challenges include limited opportunities for specialized training, variability in educational preparation, and lack of standardized guidelines for trauma nursing practice. Additionally, the increasing complexity of trauma cases requires healthcare systems to continuously update training programs and strengthen institutional support for trauma care. Understanding the determinants of trauma competency and awareness among nurses is therefore essential for improving the quality of trauma care in tertiary care hospitals. Identifying factors such as educational preparation, clinical experience, organizational support, and awareness of trauma-informed care can help healthcare institutions design targeted interventions to enhance nursing competency. Moreover, integrating trauma-focused education into nursing curricula and hospital training programs can ensure that nurses are adequately prepared to manage trauma patients effectively. Therefore, this study aims to explore the key determinants of trauma competency and awareness among nurses working in tertiary care hospitals and examine their implications for nursing education and healthcare policy. By identifying the factors that influence trauma competency, healthcare institutions and policymakers can develop strategies to strengthen trauma care systems and improve patient outcomes in emergency and critical care settings.

DETERMINANTS OF TRAUMA COMPETENCY AND AWARENESS

Educational Qualification and Professional Training

Educational background plays a critical role in shaping nurses' knowledge and competency in trauma care. Higher educational levels and specialized trauma training programs contribute to better clinical decision-making and improved patient management. Studies indicate that nurses who receive structured trauma training demonstrate significantly higher competency in managing emergency and trauma cases (Wantoro, 2023). Simulation-based education and trauma-specific courses such as Advanced Trauma Care for Nurses (ATCN) are particularly effective in enhancing

knowledge and practical skills. These programs help nurses understand trauma protocols, critical care interventions, and rapid assessment techniques necessary for emergency situations (Kaur *et al*., 2021). Furthermore, trauma-informed care education helps nurses understand the psychological impact of trauma on patients and promotes compassionate, patient-centered care practices (He *et al*., 2025).

Clinical Experience

Clinical experience is another major determinant of trauma competency. Nurses with extensive experience in emergency departments or trauma centers develop better clinical judgment and critical thinking skills when managing trauma patients. Research indicates that nurses with greater exposure to trauma cases demonstrate higher levels of competency and confidence in handling complex emergencies (Wantoro, 2023). Experienced nurses are also better equipped to recognize subtle changes in patient conditions, enabling early intervention and improved outcomes.

Continuing Professional Development and In-Service Training

Continuous professional development is essential for maintaining trauma competency among nurses. Healthcare environments evolve rapidly, requiring nurses to update their knowledge and skills regularly. Studies have shown that many nurses express a strong willingness to participate in trauma training programs, with more than 80% reporting a need for further education in trauma care (Liu *et al*., 2024). In-service training programs, workshops, and simulation exercises are effective strategies for improving trauma care competency. These programs provide opportunities for nurses to practice clinical procedures and enhance their ability to respond to emergency situations effectively.

Organizational Support and Institutional Policies

Institutional policies and organizational support play a crucial role in shaping trauma competency among nurses. Hospitals that provide clear protocols, adequate resources, and structured training programs tend to have higher levels of trauma care preparedness. Research indicates that interprofessional collaboration and supportive workplace environments significantly influence trauma nursing competency (Park *et al*., 2023). Additionally, standardized operating procedures and clinical guidelines improve consistency in trauma care practices.

Awareness of Trauma-Informed Care

Trauma-informed care (TIC) emphasizes understanding the psychological and emotional impact of trauma on patients. Nurses who possess knowledge and awareness of TIC principles are better able to provide holistic care to trauma victims. Studies assessing nurses' knowledge, attitudes, and practices regarding trauma-informed care reveal that education and gender may influence the application of trauma-sensitive approaches in clinical practice (Misra *et al*., 2025). Enhancing TIC awareness can improve patient engagement, trust, and overall treatment outcomes.

IMPLICATIONS FOR NURSING EDUCATION

The increasing burden of trauma cases worldwide highlights the need for well-prepared healthcare professionals capable of providing timely and effective care to injured patients. Nurses play a critical role in trauma management, particularly in tertiary care hospitals where severely injured patients are treated. Trauma competency among nurses involves a combination of clinical knowledge, technical skills, critical thinking, communication abilities, and psychological awareness required to manage trauma patients effectively. Therefore, nursing education must be designed in a way that equips students and practicing nurses with the competencies required to respond to trauma situations. Strengthening nursing education in relation to trauma care is essential for improving patient outcomes and ensuring the delivery of high-quality healthcare services. One of the most significant implications for nursing education is the integration of comprehensive trauma care content into undergraduate and postgraduate nursing curricula. Traditionally, trauma management has been included within broader emergency nursing modules; however, the complexity and frequency of trauma cases require more focused educational approaches.

Nursing students should receive structured education on trauma assessment, airway management, hemorrhage control, shock management, and emergency interventions. These theoretical components provide the foundation for safe and effective trauma care practices. Studies have shown that nurses who receive formal trauma education during their academic training demonstrate better preparedness and confidence when managing trauma patients in clinical settings (Kaur *et al*., 2021). In addition to theoretical knowledge, practical training is essential for developing trauma competency among nursing students. Simulation-based education has emerged as one of the most effective teaching strategies in modern nursing education. High-fidelity simulation laboratories allow students to practice emergency procedures in realistic but controlled environments. Through simulated trauma scenarios, students can develop skills in patient assessment, triage decision-making, teamwork, and communication. Simulation also allows learners to make mistakes and learn from them without putting real patients at risk. Research indicates that simulation-based trauma training significantly improves clinical competence, critical thinking, and decision-making abilities among nursing students (Liu *et al*., 2024). Therefore, nursing institutions should invest in simulation facilities and incorporate regular trauma simulation exercises into their educational programs. Clinical exposure is another important component of trauma education. Classroom learning alone is insufficient for preparing nurses to handle real-life trauma emergencies. Nursing students should be provided

with opportunities to gain clinical experience in emergency departments, trauma units, and intensive care units. Such exposure enables students to observe experienced healthcare professionals managing trauma patients and to participate in patient care under supervision. Clinical placements also help students understand the fast-paced nature of emergency healthcare environments and develop the confidence needed to function effectively in high-pressure situations. Studies have shown that nurses with greater clinical exposure to trauma cases demonstrate higher levels of competency and improved patient assessment skills (Wantoro, 2023). Another key implication for nursing education is the inclusion of trauma-informed care principles in training programs. Trauma-informed care focuses on understanding the psychological impact of traumatic events on patients and ensuring that healthcare environments promote safety, trust, and respect. Trauma patients often experience emotional distress, anxiety, and fear in addition to their physical injuries. Nurses must therefore be trained to provide compassionate care that addresses both physical and psychological needs. Educational programs should include topics such as communication with trauma patients, psychological first aid, and strategies for reducing patient anxiety and stress. Research has shown that nurses who are trained in trauma-informed care are better able to support patients emotionally and improve patient satisfaction with healthcare services (He *et al*., 2025). Interprofessional education is another important strategy that can strengthen trauma competency among nursing students. Trauma care is typically delivered by multidisciplinary teams consisting of physicians, nurses, paramedics, and other healthcare professionals. Effective communication and collaboration among team members are essential for successful patient outcomes. Nursing education programs should therefore include opportunities for students to participate in interprofessional training exercises with other healthcare disciplines. Team-based simulation activities can help students learn how to communicate effectively, share information, and coordinate care during trauma emergencies. Studies have demonstrated that interprofessional education improves teamwork skills and enhances the overall efficiency of trauma care delivery (Park *et al*., 2023). Continuing professional development (CPD) also plays a vital role in maintaining trauma competency among practicing nurses. Healthcare practices and technologies are continuously evolving, and nurses must stay updated with the latest evidence-based guidelines and treatment protocols. Nursing education should not be limited to academic institutions but should extend into professional practice through ongoing training programs. Hospitals and healthcare organizations should provide regular workshops, seminars, and certification courses in trauma care. These programs allow nurses to refresh their knowledge, learn new skills, and maintain competency in emergency situations. Studies indicate that nurses who participate in regular continuing education programs demonstrate improved clinical performance and increased confidence in managing trauma patients (Liu *et al*., 2024). Faculty development is another critical aspect of improving trauma education in nursing institutions. Nursing educators must possess adequate knowledge and expertise in trauma care in order to effectively teach students. Faculty members should be encouraged to participate in specialized training programs, workshops, and professional conferences related to trauma nursing. Institutions should also promote research activities among faculty members to encourage the development of evidence-based teaching strategies. When educators remain updated with current practices and research findings, they can provide more relevant and effective instruction to nursing students.

Technology-enhanced learning methods are also increasingly being used in nursing education to improve trauma training. Online learning platforms, virtual simulations, and digital case studies provide flexible and interactive learning opportunities for students. These tools can supplement traditional classroom teaching and allow learners to access educational materials at their convenience. Virtual reality and augmented reality technologies are also being explored as innovative approaches for training healthcare professionals in trauma management. Such technologies create immersive learning experiences that simulate real-life trauma situations, enabling students to develop practical skills in a safe learning environment. Another important implication for nursing education is the development of standardized competency assessment methods. Educational institutions must establish clear evaluation criteria to assess students' knowledge, skills, and attitudes related to trauma care. Objective structured clinical examinations (OSCEs), simulation-based assessments, and practical skill evaluations can be used to measure students' competency levels. Regular assessment ensures that nursing graduates possess the necessary competencies to provide safe and effective trauma care in clinical practice. Furthermore, nursing education programs should emphasize evidence-based practice in trauma Students should be encouraged to engage with current research literature and understand how evidence informs clinical decision-making. Teaching strategies such as case studies, problem-based learning, and research projects can help students develop analytical skills and apply evidence-based knowledge in trauma management. Evidence-based practice ensures that nurses provide care that is supported by scientific research and best clinical practices.

Such collaborations ensure that nursing education remains aligned with the practical needs of healthcare systems. Policymakers can also support trauma education by establishing national guidelines and accreditation standards for trauma training programs in nursing schools. Trauma competency among nurses is essential for improving patient outcomes in tertiary care hospitals. Nursing education plays a crucial role in developing the knowledge, skills, and attitudes required for effective trauma management. Integrating trauma-focused curricula, simulation-based training, clinical exposure, trauma-informed care principles, and interprofessional education into nursing programs can significantly enhance the

preparedness of future nurses. In addition, continuing professional development, faculty training, technology-enhanced learning, and standardized competency assessments can further strengthen trauma education. By addressing these educational implications, nursing institutions can ensure that nurses are adequately prepared to manage trauma patients and contribute to the overall improvement of healthcare systems.

Table 1. Implications for Nursing Education to Improve Trauma Competency.

Educational Area	Key Strategies	Expected Outcome
Curriculum Integration	Include dedicated trauma care topics in nursing curricula	Strong theoretical foundation
Simulation-Based Training	Use high-fidelity simulations and scenario-based learning	Improved clinical skills and decision-making
Clinical Exposure	Placements in emergency, trauma, and ICU units	Greater confidence and practical competency
Trauma-Informed Care Education	Training on psychological support and patient-centered care	Holistic patient management
Interprofessional Education	Team-based training with other healthcare professionals	Better communication and teamwork
Continuing Professional Development	Workshops, refresher courses, and certification programs	Updated knowledge and maintained competency
Faculty Development	Specialized trauma training for educators	Improved quality of teaching
Technology-Enhanced Learning	Virtual simulations, online modules, VR training	Flexible and interactive learning
Competency Assessment	OSCEs, skill tests, and simulation-based evaluations	Assurance of trauma care competency
Evidence-Based Practice	Teaching research-based trauma care approaches	Improved quality and safety of care

IMPLICATIONS FOR HEALTHCARE POLICY

The growing burden of trauma-related injuries presents a major challenge for healthcare systems worldwide. Effective trauma care requires well-trained healthcare professionals, adequate infrastructure, and well-structured healthcare policies that support the development of trauma competency among healthcare providers. Nurses play a crucial role in trauma management because they are often the first professionals to assess and stabilize trauma patients in emergency departments and critical care units. Therefore, healthcare policies must focus on strengthening trauma care systems by enhancing nursing education, promoting continuous professional development, and ensuring adequate institutional support for trauma management. Policymakers must recognize the importance of trauma competency among nurses and develop strategies that facilitate effective trauma care delivery in tertiary care hospitals.

One of the primary implications for healthcare policy is the establishment of national standards and guidelines for trauma nursing education and training. Standardized guidelines ensure that nurses across healthcare institutions receive consistent training in trauma assessment, emergency interventions, and trauma-informed care. Healthcare authorities and regulatory bodies should develop competency-based frameworks that define the knowledge, skills, and attitudes required for effective trauma nursing practice. These frameworks can serve as benchmarks for nursing education programs and hospital training initiatives. Evidence suggests that structured trauma training programs significantly improve nurses' preparedness to manage critically injured patients and enhance patient outcomes (Kaur *et al*., 2021). Healthcare policies should also promote continuous professional development programs for nurses working in trauma and emergency settings. Trauma care practices evolve rapidly due to advancements in medical technology, clinical research, and treatment protocols. Nurses must therefore receive ongoing training to maintain their competency in trauma management. Policymakers should mandate periodic refresher courses, workshops, and certification programs for nurses involved in trauma care. These programs can include simulation-based training, interdisciplinary team exercises, and updates on evidence-based trauma care guidelines. Research indicates that regular professional development programs improve nurses' clinical skills and increase their confidence in handling emergency situations (Liu *et al*., 2024). Another important policy implication is the need to strengthen trauma care infrastructure within healthcare institutions. Tertiary care hospitals must be equipped with adequate resources, including specialized trauma units, emergency equipment, and trained personnel capable of managing complex trauma cases. Government policies should prioritize investment in trauma care facilities, particularly in regions where access to specialized healthcare services is limited. Adequate staffing levels are also essential for

maintaining high-quality trauma care. Overworked healthcare professionals may experience fatigue and reduced efficiency, which can negatively affect patient outcomes. Therefore, healthcare policies must address workforce planning and ensure that hospitals maintain sufficient numbers of trained nurses and other healthcare professionals in emergency departments. Inter-professional collaboration is another area that requires policy support. Trauma care often involves multiple healthcare professionals, including physicians, nurses, paramedics, and rehabilitation specialists. Effective teamwork and communication are essential for managing trauma patients efficiently. Healthcare policies should encourage collaborative practice models that promote teamwork among healthcare providers. Training programs and simulation exercises involving multidisciplinary teams can improve coordination and reduce errors during trauma management. Studies have shown that inter-professional collaboration enhances trauma nursing competency and contributes to improved patient outcomes (Park *et al*., 2023). Healthcare policies should also emphasize the integration of trauma-informed care into healthcare systems. Trauma-informed care recognizes the psychological and emotional effects of traumatic experiences on patients and promotes healthcare practices that support emotional recovery. Patients who experience severe injuries may also suffer from anxiety, fear, and psychological trauma. Nurses must therefore be trained to provide compassionate care that addresses both physical and emotional needs. Policymakers should incorporate trauma-informed care principles into healthcare guidelines and training programs to ensure that healthcare providers are equipped to deliver holistic care. Research has demonstrated that trauma-informed care approaches improve patient satisfaction and enhance the overall quality of healthcare services (He *et al*., 2025). In addition to improving clinical care, healthcare policies should support research and data collection related to trauma care outcomes. Evidence-based policymaking requires accurate data regarding trauma incidence, treatment outcomes, and healthcare system performance. Governments and healthcare organizations should establish trauma registries that collect data on injury patterns, treatment interventions, and patient outcomes. Such data can help policymakers identify gaps in trauma care systems and develop targeted strategies to improve healthcare delivery. Research initiatives focusing on trauma nursing competency can also provide valuable insights into the factors that influence effective trauma management. Another important aspect of healthcare policy is ensuring equitable access to trauma care services. In many developing regions, trauma patients may face delays in receiving specialized care due to limited healthcare infrastructure or lack of trained personnel. Policymakers should implement strategies that improve access to trauma care in both urban and rural areas. This may include establishing regional trauma centers, strengthening emergency medical services, and providing training programs for healthcare professionals working in underserved areas. Finally, healthcare policies should promote collaboration between academic institutions, healthcare organizations, and government agencies to strengthen trauma care systems. Partnerships between universities and hospitals can facilitate training programs, research activities, and knowledge exchange. These collaborations ensure that nursing education and clinical practice remain aligned with the evolving needs of healthcare systems.

Effective healthcare policies are essential for strengthening trauma care systems and improving patient outcomes. Policies that focus on standardized trauma education, continuous professional development, improved infrastructure, interprofessional collaboration, trauma-informed care, and research support can significantly enhance trauma competency among nurses. By prioritizing trauma care within healthcare policy frameworks, governments and healthcare organizations can ensure that nurses are adequately prepared to manage trauma patients and contribute to the overall improvement of healthcare services.

Table 2. Healthcare Policy Implications for Strengthening Trauma Nursing Competency.

Policy Area	Key Policy Strategies	Expected Outcomes
Standardized Trauma Nursing Education	Development of national guidelines and competency-based frameworks for trauma nursing training	Uniform knowledge and skills among nurses; improved trauma assessment and emergency care
Continuous Professional Development	Mandatory refresher courses, workshops, certification programs, and simulation-based training	Enhanced clinical competency, improved confidence, and updated knowledge of trauma management
Trauma Care Infrastructure	Investment in specialized trauma units, emergency equipment, and adequate staffing in tertiary hospitals	Improved capacity to manage complex trauma cases and better patient outcomes
Workforce Planning	Ensuring adequate nurse-to-patient ratios and sufficient trained emergency staff	Reduced workload stress, improved efficiency, and safer patient care
Interprofessional Collaboration	Promotion of multidisciplinary training programs and team-based simulation exercises	Improved communication, teamwork, and coordination during trauma management

Trauma-Informed Care Integration	Incorporation of psychological and emotional support principles into trauma care guidelines and training	Holistic patient care, improved patient satisfaction, and better psychological recovery
Research and Data Systems	Establishment of trauma registries and support for trauma nursing research	Evidence-based policymaking and identification of gaps in trauma care systems
Equitable Access to Trauma Care	Development of regional trauma centers, strengthened emergency medical services, and training in underserved areas	Improved access to timely trauma care in rural and underserved regions
Institutional and Academic Collaboration	Partnerships between universities, hospitals, and government agencies for training and research	Improved knowledge exchange, innovation, and alignment between education and clinical practice

DISCUSSION

The present study highlights the importance of trauma competency and awareness among nurses working in tertiary care hospitals. Trauma care is a complex and time-sensitive area of healthcare that requires prompt decision-making, specialized knowledge, and coordinated multidisciplinary teamwork. Nurses play a vital role in trauma management because they are often responsible for the initial assessment, monitoring, and ongoing care of trauma patients. The findings from the literature suggest that several factors including educational preparation, clinical experience, training opportunities, and organizational support significantly influence trauma competency among nurses. One of the key determinants identified in the literature is the level of education and professional training received by nurses. Nurses who receive structured training in trauma management demonstrate better knowledge, technical skills, and confidence when managing critically injured patients. Specialized programs such as Advanced Trauma Care for Nurses and other trauma-focused training initiatives have been shown to significantly improve nurses' competency in emergency situations (Kaur *et al*., 2021). These training programs provide both theoretical knowledge and hands-on clinical experience, enabling nurses to understand trauma assessment protocols, airway management techniques, and emergency interventions required during critical situations. Simulation-based education also plays an important role in improving trauma competency. Simulation allows nurses to practice clinical skills and decision-making in realistic but controlled environments, which enhances their ability to respond effectively during real emergencies. Studies have indicated that simulation-based training improves critical thinking, teamwork, and communication skills among healthcare professionals involved in trauma care (Liu *et al*., 2024). The use of simulation is particularly beneficial because it allows healthcare providers to learn from mistakes without compromising patient safety. Therefore, integrating simulation-based learning into nursing education and professional training programs can significantly improve trauma preparedness among nurses. Clinical experience is another major factor influencing trauma competency. Nurses who have greater exposure to trauma cases through their work in emergency departments or trauma centers often develop stronger clinical judgment and decision-making abilities. Repeated exposure to trauma situations enables nurses to recognize early signs of deterioration in patients and initiate timely interventions. Research suggests that experienced nurses demonstrate higher levels of triage accuracy and patient assessment skills compared to less experienced nurses (Wantoro, 2023). These findings highlight the importance of clinical exposure and practical experience in the development of trauma competency. In addition to education and experience, organizational support within healthcare institutions plays a critical role in shaping trauma competency among nurses. Hospitals that provide adequate staffing, access to modern medical equipment, and well-defined trauma care protocols create an environment that supports effective trauma management. Institutional policies that promote regular training programs, interdisciplinary teamwork, and continuous professional development further contribute to improved competency among healthcare professionals. Studies have shown that supportive work environments and effective collaboration between healthcare professionals enhance trauma nursing performance and patient outcomes (Park *et al*., 2023). Another important aspect of trauma care highlighted in the literature is the growing recognition of trauma-informed care. Trauma patients often experience not only physical injuries but also emotional and psychological distress as a result of their traumatic experiences. Trauma-informed care emphasizes the need for healthcare providers to recognize the emotional impact of trauma and provide compassionate care that promotes patient safety, trust, and dignity. Nurses who are trained in trauma-informed care principles are better able to address the emotional needs of trauma patients and provide holistic care that supports both physical and psychological recovery (He *et al*., 2025).

Despite the importance of trauma competency, several challenges continue to affect the ability of nurses to deliver optimal trauma care. Limited access to specialized training programs, inadequate staffing levels, and lack of standardized trauma care protocols can hinder the development of trauma competency among nurses. In many healthcare settings, particularly in developing countries, nurses may not receive sufficient training in trauma management during their formal education. This gap

between theoretical knowledge and practical skills can negatively impact the quality of trauma care provided to patients. Furthermore, heavy workloads and stressful working conditions in emergency departments can contribute to fatigue and burnout among nurses, which may affect their performance during trauma emergencies. Addressing these challenges requires a comprehensive approach that includes strengthening nursing education, providing continuous professional development opportunities, and improving organizational support within healthcare institutions. The findings of this study also highlight the importance of collaboration between educational institutions, healthcare organizations, and policymakers in improving trauma competency among nurses. Academic institutions must ensure that nursing curricula include comprehensive trauma care training, while healthcare organizations should provide ongoing training programs and supportive working environments. Policymakers, on the other hand, should develop national guidelines and policies that support trauma education and strengthen healthcare infrastructure.The discussion indicates that trauma competency among nurses is influenced by multiple interrelated factors. Improving trauma competency requires a combination of educational reforms, institutional support, and policy initiatives aimed at strengthening trauma care systems. By addressing these factors, healthcare systems can enhance the preparedness of nurses to manage trauma patients effectively and ultimately improve patient outcomes in tertiary care hospitals.

CONCLUSION

Trauma remains a significant global public health issue, contributing substantially to morbidity, mortality, and long-term disability. Tertiary care hospitals serve as critical centers for managing severe trauma cases, where timely intervention and skilled healthcare professionals are essential for improving patient outcomes. Among healthcare professionals, nurses play a pivotal role in trauma management as they are often responsible for the initial assessment, stabilization, continuous monitoring, and coordination of care for trauma patients. Therefore, trauma competency and awareness among nurses are fundamental components of effective trauma care delivery. The findings discussed in this paper highlight that trauma competency among nurses is influenced by multiple interrelated factors, including educational preparation, clinical experience, training opportunities, and organizational support. Adequate theoretical knowledge combined with practical clinical exposure enables nurses to develop the critical thinking and decision-making skills necessary for managing complex trauma situations. Structured trauma training programs, simulation-based learning, and continuing professional development initiatives have been shown to significantly enhance nurses' knowledge, technical skills, and confidence in trauma care. Clinical experience also plays an important role in the development of trauma competency. Nurses who work in emergency departments or trauma units frequently encounter critical cases, which allows them to refine their assessment abilities and clinical judgment. Additionally, supportive healthcare environments that provide adequate resources, clear clinical protocols, and opportunities for professional growth contribute to the improvement of trauma nursing competency.

Another important aspect highlighted in this study is the growing importance of trauma-informed care. Trauma patients often experience psychological distress in addition to physical injuries, and nurses must be equipped with the knowledge and skills to address both aspects of patient care. Incorporating trauma-informed care principles into nursing education and practice can promote holistic and compassionate healthcare delivery. Despite these advancements, several challenges remain in strengthening trauma competency among nurses. Limited training opportunities, resource constraints, and variations in educational preparation may hinder the development of adequate trauma skills in some healthcare settings. Addressing these challenges requires coordinated efforts from educational institutions, healthcare organizations, and policymakers to ensure that nurses receive comprehensive training and institutional support. Enhancing trauma competency and awareness among nurses is essential for improving trauma care outcomes in tertiary care hospitals. By integrating specialized training programs, promoting continuous professional development, and strengthening healthcare policies that support trauma education and infrastructure, healthcare systems can ensure that nurses are well-prepared to manage trauma patients effectively and contribute to improved quality of care.

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CONFLICT OF INTERESTS

The authors declare no conflict of interest

ETHICS APPROVAL

Not applicable

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AI TOOL DECLARATION

The authors declares that no AI and related tools are used to write the scientific content of this manuscript.

DATA AVAILABILITY

Data will be available on request

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