

ISSN 2597- 6052DOI: <https://doi.org/10.56338/mppki.v7i11.6287>**MPPKI****Media Publikasi Promosi Kesehatan Indonesia**
*The Indonesian Journal of Health Promotion***Review Articles****Open Access****Analysis of the Application of Emergency Severity Index Toward Patient Triage Response Time In the Emergency Department: Literature Review****Nesi Nggosual^{1*}, Anshar Rante², Djusmadi Rasyid³ Cici Pratiwi⁴**¹Prodi D 3 Keperawatan STIKes Kamus Arunika, Nesinggosual48268@gmail.com²Prodi D 3 Keperawatan STIKes Kamus Arunika, anchamkes@gmail.com³Prodi D 3 Keperawatan STIKes Kamus Arunika djusmadi406@gmail.com⁴Prodi D 3 Keperawatan STIKes Kamus Arunika Pratiwicici8@gmail.com* Corresponding Author: Nesinggosual48268@gmail.com**ABSTRACT****Introduction:** Triage is the process of determining the condition of patients at risk of death, potential disability, and worsening patient conditions. Response time is crucial in treating patients quickly and accurately.**Objective** This literature study aims to analyze the application of the Emergency Severity Index (ESI) Triage to the Triage Response Time in the Emergency Department.**Methods:** This research employs a literature review study with an analytic method approach that meets the inclusion and exclusion criteria. The search for articles or journals utilizes keywords and Boolean operators to refine the search and select relevant literature. The keywords used include ESI, Triage, Response time," and "Emergency Department.**Results:** The study reveals the effectiveness of utilizing the Emergency Severity Index (ESI) Triage on Triage Response Time in the Emergency Department. .**Conclusion** The speed at which nurses respond and determine patient triage can be enhanced through the use of ESI (Emergency Severity Index). To support this, nurses must possess knowledge and skills related to the ESI to minimize the mortality rate of patients.**Keywords:** ESI, Triage, Response Time; Emergency Department Installation

INTRODUCTION

Five-level triage systems are considered the global standard in emergency medicine. The most extensively researched and widely used five-level systems include the Australasian Triage Scale (ATS), Canadian Triage and Acuity Scale (CTAS), Manchester Triage System (MTS), and Emergency Severity Index (ESI), all of which demonstrate strong validity and reliability. Among these, the ESI stands out for its reliability and validation. It first eliminates life-threatening and high-risk conditions before categorizing patients based on the need for medical resources, followed by stratification according to vital signs such as heart rate, respiratory rate, and oxygen saturation. The ESI system effectively classifies adult patients into five reproducible groups, with triage levels linked to factors like length of stay, healthcare costs, admission rates, and mortality.(1)

Hospitals are facilities for inpatient care, outpatient care, and emergency services. Hospitals also have a 24-hour Emergency Department (ED) Effective triage is essential in emergency departments, especially in determining the urgency of cases. This crucial task is primarily carried out by nurses who are responsible for prioritizing patient care. The triage process necessitates quick and accurate assessment of patient conditions by emergency nurses. To effectively prioritize patients, nurses must possess a solid background of knowledge, experience, education, and be supported by a conducive work environment.(2) The emergency department is a critical entry point to healthcare services for individuals needing urgent care and treatment, whether in an emergency or non-emergency situation. In the emergency department, there is a triage system. Triage is a method of classifying patients based on the nature and severity of their illness. Triage is a way to group patients according to the type and severity of their emergency condition, ensuring they are placed in the appropriate area and treated promptly, thereby improving emergency management and patient outcomes. Incorrect triage can negatively impact patient outcomes in the emergency department(3) Response time refers to the speed of patient care from the moment the patient arrives until they receive treatment(4).

According to the Ministry of Health in Indonesia (2019), data obtained in 2013 showed a total of 11,650,239 visits from all patients while the number of visits to the emergency room (IGD) in 2017 reached 4,402,205 patients (5) The number of patient visits to the emergency room at Undata General Hospital in Central Sulawesi province in 2022 reached 12,746 patients, up 56% from the number of visits in 2021, which was 8,168 patients. The high number of visits has led to patient overcrowding, disrupting the service flow (Sitti rachma, 2023)

Based on research, (6) stated that the level 5 triage system using ESI is very accurate and can effectively predict patient outcomes. This is consistent with the research results conducted by (7) who stated that ESI triage can increase triage accuracy in emergency departments because patients with high risk included in ESI categories 1 and 2 increased after its use. The ESI triage system is also suitable for use in hospital emergency departments. Based on research in Indonesia, (8) found that 48.5% of nurses had poor knowledge about triage, and 23.8% stated that they were not ready to perform it. Additionally, it was found that overall, 65.40% of nurses have moderate triage skills.

A recent study conducted by(9) revealed that 70.37% of nurses in Indonesia possess moderate-level triage skills. However, it was noted that Indonesian nurses currently lack sufficient knowledge of triage care models, hospital triage preparation and training, and the triage assurance process. In order to ensure prompt and accurate emergency response, it is imperative for nurses to possess competency standards and abilities to effectively assist patients in the Emergency Room. Addressing this gap,(10) emphasizes the importance of implementing training and education recommendations in emergency nursing to enhance knowledge and rectify errors in triage practices.

METHOD

The research methodology is a systematic approach employed by researchers to accomplish goals and address inquiries (11) For this particular study, a quantitative methodology was utilized through the narrative literature review method, a technique commonly employed in Library and Information Science studies (FORD, 2020). The focus of this research is to examine literature concerning the Implementation of the Emergency Severity Index on Patient Triage Response Time within a healthcare facility. A total of 90 articles were identified within the time frame of 2019 to 2023 using specific keywords such as "ESI," "Triage," "Response time," and "Emergency Department." The data utilized in this study is secondary information sourced from relevant articles or journals accessed through Google Scholar, rather than through direct observation.

RESULTS

In order to address the research objectives, this literature review employed a narrative technique to analyze and synthesize the data extracted from relevant sources. A total of five journals that met the specified inclusion and exclusion criteria underwent feasibility assessments.

Table 1. Daftar artikel hasil pencarian

No	Author	Tahun	Volume Angka	Judul	Metode (Desain, sampel, variable, instrument, analisis)	Hasil penelitian	Database
1	Sitti Rachma, Elin Hidayat, Benny H.L Situmorang	2023	Vol.4 , No 3	The impact of implementing the Emergency Severity Index (ESI) on triage response time at the Emergency Department of Undata Hospital in Central Sulawesi Province.	D : analytical observational with a cross-sectional approach S : as many as 43 respondents V : Esi (Emergency Severity Index), Response Time, Triage, Emergency Installation. I :observation sheet A :Fisher's Exact Test	The findings of this study suggest that the utilization of ESI does not impact the response time of triage nurses across morning, afternoon, and evening shifts.	Google scholar Jurnal Kesehatan Tambusai.
2	Vita Maryah Ardiyani , Mia Andinawati	2021	Vol 7, No.1	Utilization of the Emergency Severity Index (ESI) triage method by undergraduate nursing students to enhance the precision of assigning emergency levels.	D : Penelitian Eksperimental Dengan Pendekatan Satu Kelompok Pretest Dan Protest S : Sebanyak 85 Responden V :trriage <i>emergency severity index</i> ,ketepatan tingkat kegawatdaruratan I : Pemaparan kasus – kasus klinis A : Wilcoxon Signed Ranks Test	There exists a discrepancy in comprehending emergency priorities both prior to and following the implementation of the Emergency Severity Index (ESI) methodology.	Google scholar Jurnal Mesencephalon.
3	Doni Wibowo	2020	Vol. 10, No. 2	"The Impact of Documenting Emergency Severity Index (ESI) Triage using the Canada Triage Acuity Scale (CTAS) on Triage Accuracy among Nursing Students at STIKES Cahaya Bangsa in the Emergency Department of Ulin Banjarmasin Regional Hospital"	D :This research uses the Quasi Experimental method S :as many as 50 samples V :Documentation, Emergency Severity Index (ESI) Triage, Canada Triage Acuity Scale (CTAS), I :observation sheet A :using the Mann Whitney test	The effectiveness of documentation writing for Emergency Severity Index (ESI) triage is significantly higher when compared to the Canada Triage Acuity Scale, as evidenced by a p-value of 0.030.	Google scholar Jurnal Kesehatan Indonesia
4	Zustantria Agustin Minggawati, Achmad Faried ,Ayu Prawesti Priambodo	2020	Vol. 8, No. 1	Comparison of Four level modification triage with five level Emergency severity index	D :Researchers used a quantitative quasi-experimental design. S :A total of 38 samples V :modified triage four with emergency severity index (ESI) triage Five levels based on level of accuracy, triage time I :observation format	The findings of this study indicate that there is no statistically significant variance in the	Google scholar Jurnal Keperawatan Padjadjaran

				(ESI) Triage Based on Level of Accuracy and Time Triase	A:using the Mann Whitney test	precision and length of triage procedures. Nonetheless, according to the data distribution, it is apparent that the ESI triage system yields more expected decision outcomes.	
5	Raheleh Ganjali, Reza Golmakani, Mohsen Ebrahimi, Saeid Eslami EB	2022	Vol 8 No 2	Accuracy of the Emergency Department Triage System using the Emergency Severity Index for Predicting Patient Outcome; A Single Center Experience	D:Researchers used cross-sectional research S:400 Respondents V: ESI, Triage I:Questionnaire A:Using the chi square test & Fisher's exact test	The study's findings indicate that a five-level triage system using ESI demonstrates high accuracy in triage processes and effectively predicts patient outcomes. As a result, this system can be considered an efficient method for hospital triage.	Google scholar Bulentin of Emergency And Trauma

DISCUSSION

According to (12) triage is a critical component of emergency care management used to prioritize patients based on their level of need when healthcare resources are limited. Implementing a triage system helps ensure that patients receive timely and appropriate care based on their individual needs. (13) highlights the widespread adoption of the Emergency Severity Index (ESI) due to its ability to effectively address patients' medical resource requirements in an evidence-based manner. Nurses find ESI user-friendly as it assesses patients' medical needs based on the urgency of their situation. Developed by the US Emergency Department, ESI also aids in predicting hospitalization rates by considering the required diagnostic tests for patients. Based on the findings of the research conducted in the five journals, it was determined that the use of the Emergency Severity Index did not have a significant impact on triage and response time in the first and second journals. In the first study, the lack of dedicated triage nurses and the new implementation of the ESI were cited as reasons for this result. In the second study, respondents were more familiar with the traditional color-coded triage method compared to the ESI Triage system. Conversely, the third, fourth, and fifth journals demonstrated that the proper utilization of the Emergency Severity Index can expedite the response of nurses and triage personnel in managing emergency cases. These studies indicated that ESI triage is more efficient in determining response time due to its user-friendly and structured decision-making process, making it easier for healthcare professionals to prioritize patient care.

The study conducted at RSUD Undata's Emergency Department over the past three years has revealed that the implementation of ESI is still in its early stages. This calls for further improvements and evaluations to enhance the efficiency of the system. One of the areas that require attention is the absence of a designated triage officer in the triage room, as there is no fixed schedule for their presence. Consequently, all doctors and nurses are tasked with performing triage, leading to potential delays in patient care. Additionally, there seems to be a lack of effective collaboration among the medical team in the ER, resulting in delayed responses to emergencies. The findings of this study are in alignment with previous research conducted by (14) and (15) External factors, such as the presence of triage officers, play a significant role in determining the response time of nurses in handling patients efficiently. While there may not be statistical evidence to establish a direct correlation, the importance of having dedicated personnel in the triage room cannot be overlooked in ensuring prompt and effective patient care.

The study examined the impact of Emergency Severity Index utilization on triage response time efficacy. Findings revealed that a significant number of respondents adhered to Standard Operating Procedures (SOP)

guidelines for triage, resulting in efficient response times. This adherence to protocol indicates a high level of quality in emergency services, particularly in regards to nurse responsiveness.

The study reveals that the appropriate level of Emergency Severity Index (ESI) has a significant impact on patient response time, with a p-value of 0.002 exceeding the threshold of 0.005. Hence, ESI is deemed effective at the Muhammadiyah Gombong Primary Health Care Emergency Installation. The implementation of ESI triage aligns with standard operating procedures,⁽¹⁶⁾ with factors such as Experience, Skills, and knowledge influencing its execution in hospitals. Knowledge plays a crucial role in triage, serving as the cornerstone for decision-making. Research indicates that knowledge is paramount in prioritizing triage patients. Experience, particularly in emergency nursing and the triage process, significantly affects service quality. Studies by⁽¹⁷⁾ demonstrate that decision-making in triage relies on critical thinking, intuition, and experience. Experienced triage nurses exhibit enhanced consistency in decision-making processes.

Discusses, the role of triage nurses is crucial in assessing and prioritizing patient complaints in emergency departments. Through continuous learning and skill development, triage nurses become adept at applying their knowledge of pathophysiology to accurately evaluate the severity of patient conditions. (3) With each patient encounter, they are able to draw on their accumulated experiences to make informed decisions about the appropriate resources and level of care needed for each individual. This ability to assess and prioritize effectively is essential in ensuring that patients receive timely and appropriate care, ultimately leading to better outcomes and experiences for those seeking medical attention.

Research underscores the pivotal role that training plays in the professional development of nurses. By engaging in ongoing training and education, nurses can ensure that they remain abreast of the latest information, best practices, and cutting-edge techniques in the field.⁽¹⁸⁾ This not only enhances their individual capabilities, but also contributes to the overall quality of patient care. Furthermore, higher levels of education have been shown to empower nurses with a broader scope of knowledge and a more sophisticated understanding of complex medical concepts. This advanced level of education equips nurses with the tools they need to critically analyze information, think creatively, and adapt to new challenges in the healthcare environment. In essence, investing in ongoing training and pursuing higher levels of education can significantly elevate the skillset and mindset of nurses, enabling them to deliver more effective and efficient care to their patients. By staying updated and continuously expanding their knowledge base, nurses are better equipped to navigate the ever-evolving landscape of healthcare and make informed decisions that positively impact patient outcomes.

In addition to Nursalam's assertion on the impact of educational factors on behavior, it is important to consider the role of training and experience in healthcare settings.⁽¹⁹⁾ Research by Fadhilah emphasizes the crucial role of healthcare professionals, such as doctors and nurses, in ensuring timely responses to emergency situations.⁽²⁰⁾ Limited personnel in the emergency room can have a direct impact on patient service delays, underscoring the need for adequate staffing levels and efficient resource allocation in healthcare facilities. Furthermore, the correlation between levels of education and critical thinking skills cannot be overlooked when considering the quality of care provided in emergency situations. Nurses and doctors with higher levels of education and training are better equipped to make quick and informed decisions, potentially saving lives in critical moments. This highlights the importance of continuous education and professional development for healthcare professionals to enhance their skills and capabilities in emergency response scenarios. In conclusion, the intersection of educational factors and healthcare personnel in emergency care settings is a complex yet crucial aspect of ensuring efficient and effective patient service delivery. By recognizing the impact of education on critical thinking and decision-making abilities, healthcare organizations can better equip their staff to handle emergency situations with speed and proficiency.

CONCLUSION

The reliability and effectiveness of nurses in delivering high-quality care to patients in emergency situations are critical factors in determining patient outcomes. One way to evaluate and improve the efficiency of nurses in attending to patients is through the utilization of the Emergency Severity Index (ESI). The ESI is a widely recognized and validated tool used to triage patients in emergency departments based on the severity of their condition and the resources required for their care. By employing the ESI, nurses can quickly and accurately assess patients, prioritize their treatment, and ensure that those with the most urgent needs receive timely care. However, in order for nurses to effectively utilize the ESI tool, they must possess the necessary knowledge, skills, and familiarity with its application. This requires ongoing education and training to ensure that nurses are proficient in using the tool and can make informed decisions about patient care. By enhancing nurses' proficiency in using the ESI tool, healthcare organizations can improve patient outcomes and ultimately reduce mortality rates. Nurses who are adept at utilizing the ESI can more efficiently identify and prioritize patients in need of immediate care, leading to quicker interventions and better outcomes for patients. In conclusion, the application of the Emergency Severity Index is a

valuable tool for assessing and improving the efficiency of nurses in attending to patients in emergency situations. By ensuring that nurses are well-trained and proficient in using the ESI, healthcare organizations can enhance patient care, reduce mortality rates, and ultimately improve overall patient outcomes.

SUGGESTION

There is a clear need for socialization and workshops/training focused on the effective use of the Emergency Severity Index (ESI) in order to enhance the knowledge and skills of nurses working in emergency room settings. This training is essential to ensure that nurses are equipped to appropriately prioritize patient care based on severity levels. Additionally, there is a pressing need for advancements in applied science and technology within the field of nursing to optimize the use of ESI and improve Response Time and Triage processes within emergency rooms. Educational institutions must also play a role in enhancing the proficiency of nursing students in utilizing ESI during emergency nursing clinical practice. This will better prepare future nurses to effectively implement ESI in real-world settings and contribute to improved Response Time and Triage outcomes in emergency room environments. The results of this research hold the potential to serve as a valuable reference for the practical application and optimization

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