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Integrating the Early Warning Scoring System (EWSS) into Nursing Students' Assessment to Enhance Critical Thinking and Optimize Patient Care in Inpatient Settings

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ABSTRACT

Background: High-quality nursing care begins with an accurate and comprehensive patient assessment. The Early Warning Scoring System (EWSS) is a vital tool in inpatient units for monitoring vital signs and detecting early signs of clinical deterioration, enabling timely intervention. However, field observations indicate that nursing students often lack a practical understanding and the ability to apply EWSS, leading to passivity and uncertainty in clinical decision-making. Therefore, the development of EWSS-based initial assessments within nursing care reports is essential to enhance students' critical thinking and rational intelligence in clinical practice.

Purpose: This study aims to develop and implement an EWSS-based initial assessment model that enables students to integrate assessment findings, scoring values, and appropriate clinical interventions. Through the interpretation of EWSS scores, students are expected to improve their clinical reasoning and decision-making skills within inpatient nursing services.

Methods: This study employed a comparative analytical quantitative design. The research was conducted in the inpatient wards of a hospital in East Java. The population consisted of all nursing profession students (Ners) undergoing clinical practice in 2024, with a total sample size of 28 respondents. The independent variable was the nursing care report integrated with EWSS indicators, while the dependent variable was the students' rational intelligence in clinical decision-making related to EWSS outcomes. Data were collected using initial assessment observation sheets supplemented with EWSS. Statistical analysis was performed using the Wilcoxon test to determine differences before and after the intervention.

Results: The integration of EWSS parameters into nursing students' assessment instruments significantly improved their ability to accurately interpret patients' clinical conditions and guided them in determining interventions, thereby enhancing rational intelligence.

Conclusion: Early exposure to EWSS among students ultimately supports the creation of safer (patient safety) and more effective nursing care across all clinical practice settings.

Keywords: Clinical Decision-Making, Critical Thinking, Early Warning Score System, Nursing Assesment

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BACKGROUND

The use of EWSS in hospitals began 30 years ago, with the aim of reducing the mortality rate of patients outside intensive care units (Esmael, 2026). High-quality nursing care is rooted in an accurate and comprehensive assessment process. Precise assessment serves as the foundation for nurses to identify nursing problems accurately, ensuring that planned interventions align with the patient's clinical needs. This is consistent with Amalia et al. (2018), who emphasize that the accuracy of assessment data is a primary determinant of the quality of nursing care. When interventions are selected based on valid data, the effectiveness of actions and the acceleration of the patient's recovery process significantly increase (Jobbe, PL, 2024).

Globally, the Early Warning Score System (EWSS) has been widely adopted as a standard for early detection of deteriorating patient conditions, particularly in developed countries like the United Kingdom through the use of the National Early Warning Score (NEWS) (Gery, s, 2020). Numerous international studies have demonstrated that this system has been implemented in various healthcare settings and studied on tens of thousands of patients across the world. In Indonesia, the EWSS began its national implementation after being included in hospital accreditation standards in 2012 (KARS, 2017), (Pusporini, 2020).

In the inpatient ecosystem, clinical deterioration is an unavoidable risk due to the progressivity of diseases. Therefore, a comprehensive assessment method capable of detecting early signs of deterioration is required to ensure that specific management can be administered promptly. In response to this need, hospitals have implemented the Early Warning Score System (EWSS) as a standardized instrument for patient observation, particularly for those exhibiting signs of declining conditions (Gerry, S, 2020).

Technically, EWSS is a score-based rating system used to monitor patient stability through structured physiological parameters. These parameters include respiratory rate, oxygen saturation, body temperature, systolic blood pressure, heart rate, and level of consciousness via the AVPU scale (Meylan et al., 2020). This system functions as an early detection tool to identify changes in patient prognosis (Hidayat et al., 2020), enabling healthcare professionals to take timely medical action before the patient’s condition reaches a critical stage.

The implementation of EWSS represents a revolutionary step that shifts the nursing paradigm from reactive to proactive (Agus et al, 2025). By utilizing physiological data as the basis for action, hospitals can minimize the risk of human error and treatment delays. As a "universal language" in patient safety, EWSS ensures that even the slightest clinical deviation receives the appropriate medical response at the right time. For nursing students undergoing clinical practice, a deep understanding of EWSS principles and the ability to interpret scores are essential competencies. This equips them to provide accurate care in accordance with patient safety standards (Hidayat et al., 2020).

Professional practice students placed in inpatient wards are required to adapt quickly to new environments, including understanding the protocols and workflows of the healthcare team. Husein (2018) emphasized that students who master service unit guidelines will be more sensitive to changes in clinical indicators and more proactive in consulting with clinical supervisors (preceptors). Based on field observations, there is a competency gap for students practicing in hospitals, one of which is the application of patients with EWSS indicators even though hospitals have implemented EWSS observations on daily nursing assessment sheets. Many students who practice do not fully understand the concept or practical application of the Early Warning Score System (EWSS) because in daily nursing assessments there is no form related to the EWSS.This lack of knowledge results in a passive attitude, hesitation in determining interventions, and failure to demonstrate the expected clinical analysis. This phenomenon emphasizes the urgency of student exposure in developing an EWSS-based

nursing observation model. The development of this nursing assessment model is expected to be an effective strategy to improve clinical analysis skills, critical decision-making, and rational intelligence of students in nursing practice.

OBJECTIVE

High-quality nursing care is rooted in an accurate and comprehensive assessment process. As the frontline of patient monitoring, both nurses and nursing students must possess the ability to correctly identify clinical problems to ensure that selected interventions align with patient needs. This is reinforced by the fact that the quality of care is heavily determined by the accuracy of the data obtained from the very first contact with the patient. When nursing interventions are based on precise assessments, the success of implementation and the acceleration of patient recovery increase significantly.

However, a major challenge arises in inpatient wards, where clinical conditions are dynamic and patients are at risk of sudden deterioration. To address this complexity, hospitals have implemented the Early Warning Score System (EWSS) as the standard for observation. EWSS is not merely a score-based rating system, but an early detection tool that monitors vital parameters such as respiratory rate, oxygen saturation, body temperature, systolic blood pressure, heart rate, and level of consciousness (AVPU) (Erik, et al, 2024). This system functions as a universal language for patient safety, ensuring that every physiological change receives the appropriate medical response at the right time.

In alignment with the nursing research roadmap focused on emergency and critical care management, there is an urgent need to develop the application of EWSS for students through learning models or clinical observation frameworks. This is driven by field observations indicating that practicing students often remain passive and hesitant in interpreting clinical data. Therefore, this study aims to develop an EWSS-based nursing observation model so that students can coherently integrate assessment findings, score values, and clinical actions. By integrating EWSS into the initial assessment of their assigned patients, students are expected not only to become skilled in data collection but also to experience an increase in rational intelligence and critical thinking skills. With strong score interpretation capabilities, nursing profession students will gain sharpness in clinical decision-making: determining whether to continue an intervention, cease a specific action, or modify a care plan to be more adaptive to the patient's condition. Ultimately, this model aims to transform students into proactive practitioners who optimize nursing care and maintain patient safety in inpatient settings.

METHODS

Research Design This study employs a quantitative approach with a comparative analytical design. This method was systematically selected to compare the differences or effects of an intervention between specific groups or conditions—in this case, comparing the students' clinical capabilities before and after the implementation of the observation model. Research Location and Context The research was conducted across various inpatient wards of hospitals in East Java affiliated as clinical practice sites for Nursing Profession (Ners) students from the Faculty of Health Sciences, Universitas Kadiri. The selection of these locations was strategic (purposive), as students in these units interact directly with patients in dynamic conditions. This provided real-world exposure, allowing students to observe and implement the clinical observation model that serves as the core of this study.

Population and Sampling Technique The population of this study included all nursing profession students (Ners) undergoing clinical practice in inpatient wards in 2024, totaling 28 students. Given that the population size was relatively limited and fully accessible to the researcher, a total sampling (saturated sampling) technique was utilized. By involving the

entire population that met the inclusion criteria without randomization, the study aims to produce data representations that are robust, accurate, and possess high internal validity regarding the phenomenon being studied.

Research Variables To address the research objectives, the variables were identified into two main categories: Independent Variable: The Early Warning Scoring System (EWSS) observation model within nursing care reporting. This variable is positioned as a structured intervention or monitoring instrument designed to objectively detect early signs of clinical deterioration in patients. Dependent Variable: The rational intelligence of the students. This variable is measured as a clinical outcome, encompassing the students' ability for logical-analytical thinking and their accuracy in clinical decision-making based on the integration of collected observational data.

Instruments and Data Analysis Data collection was performed using a validated EWSS observation sheet and documentation sheets for clinical actions taken in response to the scoring results. To test the significance of the effect of implementing the EWSS model on the students' rational intelligence, the collected data were statistically processed using the Wilcoxon signed-rank test. This test aims to identify significant average differences between two related conditions, ultimately proving the effectiveness of the EWSS model as a clinical learning tool.

RESULTS

Based on the research results, the following data was obtained:

Table 1. Distribution of Respondents by Gender

Category	Intervention	
	f	%
Man	8	23
Women	21	77

Table 2. Differences in students' critical thinking in managing nursing care with the addition of EWSS observations on the nursing care documentation sheet

Category	Intervention					
	Accordance		Low Accordance		Not Accordance	
	f	%	f	%	f	%
Pretest (EWSS)	5	17	18	66	5	17
Post test (EWSS)	23	83	5	17	0	0
P value	0,000					

DISCUSSION

High-quality nursing care begins with an accurate and comprehensive patient assessment (Takalani E. Mutshatshi et al., 2020). In nursing practice, a nursing care report is a written document that systematically describes the care provided by nursing staff, including nursing students (Erik et al, 2025). As novices caring for patients in the inpatient ward, students face uncertainties due to the new environment and unfamiliar nursing processes, which can make them appear inactive (Jing Liu et al., 2022). Nursing students need resilience to navigate the complexities of clinical practice. This characteristic is crucial for managing heavy workloads, unexpected patient situations, and emotional stress while maintaining performance and well-being (Kirsten Eika Amsrud, et al., 2019). Cultivating resilience helps students

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develop the ability to adapt to adversity, overcome setbacks, and remain committed to providing high-quality patient care.

In the implementation of this study, a significant difference was found in students' understanding related to the use of EWSS in managed patients, in observations and discussions with respondents before the development of the initial assessment model using EWSS, there were 5 respondents who did not know EWSS (17%), and some students only knew but could not interpret EWSS scoring 18 people (66%), this identified, nursing students had not been exposed much related to this instrument during clinical practice students. After the change in the initial assessment model by adding the EWSS instrument to the nursing care report, there was a shift in students' understanding and application of students' applications in viewing EWSS scoring. The existence of simulations, providing knowledge will have an impact on knowledge and skills,

This is in accordance with research that has been carried out on implementing nurses. There was an increase in knowledge among nurses who received simulation-based training on the Early Warning Score System (EWSS) compared to those who did not receive simulation related to clinical practice. This finding suggests that simulation is an effective educational strategy for enhancing nurses' understanding of patient assessment and early detection of clinical deterioration. Through simulation, nurses are exposed to realistic clinical scenarios that allow them to practice identifying abnormal vital signs, calculating EWSS scores, and making appropriate clinical decisions in a safe and controlled environment. This experiential learning approach not only strengthens theoretical knowledge but also improves critical thinking and clinical judgment. In contrast, nurses who do not receive simulation-based learning tend to rely solely on theoretical instruction, which may limit their ability to apply knowledge in real clinical situations. Without hands-on practice, the integration of EWSS into daily nursing care may be less than optimal, potentially delaying the recognition of patient deterioration.

Nursing students undergoing clinical practice have limited decision-making authority, especially in situations that require rapid and accurate interpretation of clinical data. This situation is often exacerbated by a lack of knowledge of current information developments and a fear of making mistakes in interpreting assessment results. Therefore, hospitals, as the practice sites, have a crucial role in communicating the latest practices implemented to improve the quality of patient care. Effective communication regarding new systems and instruments will minimize errors and misunderstandings, given that students are often perceived as not fully understanding their roles and responsibilities during clinical practice.

In line with this, this study is the first step in integrating the Early Warning Score System (EWSS) instrument into students' professional practice assessment sheets. This instrument is expected to guide students in behaving and acting in accordance with the results of patient condition assessments. Through the use of the EWSS, students are encouraged to be more systematic in their assessments and actively discuss score interpretation and necessary follow-up actions with senior nurses or clinical supervisors. This implementation has been proven to increase student engagement and responsiveness, particularly when dealing with patients with EWSS category 2 and 3 scores who require repeated observation and immediate reporting to a nurse or physician for further management.

Furthermore, there was a significant increase in knowledge among nurses who received simulation-based training regarding the EWSS compared to those who did not receive simulation related to clinical practice. This indicates that simulation is an effective learning strategy in improving understanding of patient assessment and early detection of clinical deterioration. Through simulation, students are exposed to realistic clinical scenarios, allowing them to practice identifying changes in vital signs, accurately calculating the EWSS score, and making appropriate clinical decisions in a safe and controlled environment. This experiential

learning approach not only strengthens cognitive aspects but also develops critical thinking skills and clinical judgment, which are crucial for improving the quality of nursing care and patient safety.

CONCLUSION

The development of a nursing assessment model by incorporating the initial EWSS assessment instrument significantly assists nursing students in implementing the EWSS in the ward. Students can actively observe patients in categories 2 and 3, allowing them to prevent emergencies with faster treatment. This model development is expected to be an effective strategy for improving students' clinical analysis skills, critical decision-making, and rational intelligence in nursing practice.

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