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Accuracy Patient Management in the Emergency Room: Social Cognitive Theory Insights

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ABSTRACT

Emergency healthcare services play a crucial role in patient survival, particularly in emergency departments (ED) where timely and accurate decision-making is vital. This study aims to analyze the personal, behavioral, and environmental factors that influence the accuracy of patient management in emergency departments, using the Social Cognitive Theory framework. An observational, cross-sectional study was conducted among 107 emergency nurses from all hospitals in Toraja, selected using total sampling. Independent variables included personal, behavioral, and environmental aspects, while the dependent variable was patient management accuracy. Data were collected using a validated questionnaire and analyzed through univariate, bivariate, and multivariate linear regression using statistical application. The study was approved by the Health Research Ethics Committee (Approval No: 0723419/EC/KEPK/I/05/2025). Results indicated an R-squared value of 0.502, suggesting that 50.2% of the variance in patient management accuracy could be explained by the three independent variables. Multivariate analysis revealed that the behavioral factor had the most significant influence (p=0.000; B=0.567). Behavioral factors play the most significant role in determining the accuracy of patient management in emergency departments, followed by environmental and personal factors. Strengthening clinical skills, teamwork, and adherence to protocols is essential to improving emergency care outcomes. Hospitals should prioritize continuous training, competency-based evaluations, and supportive work environments to enhance behavioral performance among emergency nurses. Future research is recommended to employ longitudinal designs to understand causal pathways better and to include broader healthcare roles beyond nursing.

INTRODUCTION

Emergency healthcare is a fundamental component of national health systems, particularly in emergency departments (ED), where timely and accurate care is essential to prevent mortality and complications. The emergency departments plays a critical role in managing acute and life-threatening conditions, and the accuracy of patient management is a key determinant of treatment effectiveness and patient safety. According to the Indonesian Ministry of Health Regulation No. 47 of 2018, emergency departments are mandated to provide immediate medical services to patients requiring urgent intervention to prevent worsening clinical outcomes (Kementerian Kesehatan Rpublik Indonesia, 2018).

Globally, delays in emergency care remain a major contributor to preventable mortality. A systematic review by Jin et al. (2023) found that ineffective coordination and delays in emergency medical services significantly increase the risk of adverse outcomes, underscoring the need for accurate, timely decision-making in emergency departments. Similarly, Rowe & Knox (2023) reported that overcrowding, triage delays, and workflow inefficiencies are strongly associated with higher morbidity and mortality in emergency settings.

In Indonesia, challenges persist in achieving optimal emergency response standards. The Ministry of Health emphasizes that ideal response times should be within five minutes upon

patient arrival (Jainurakhma et al., 2022). However, many hospitals still face delays due to limited staffing, inadequate infrastructure, and suboptimal triage systems, barriers also noted in international studies. For example, Hannawa et al. (2022) demonstrated that resource limitations and workflow disruptions significantly hinder the quality and timeliness of emergency care delivery.

Patient management accuracy is shaped by multiple interacting factors, including personal, behavioral, and environmental domains as conceptualized in Bandura's Social Cognitive Theory (SCT). SCT highlights the reciprocal relationship between personal characteristics (knowledge, self-efficacy), behavioral patterns (clinical performance, teamwork), and environmental conditions (workload, resources) (Schunk & DiBenedetto, 2020). This framework is highly relevant to emergency departments, where clinicians operate under pressure and must make rapid, precise clinical decisions.

Personal factors such as clinical competence, confidence, and decision-making ability directly influence performance in emergencies. Allobaney et al. (2022) found that healthcare providers with high self-efficacy responded more quickly and performed more accurate clinical actions during critical events. Behavioral attributes, including clinical skills, adherence to protocols, and effective communication, also play a decisive role in emergency departments outcomes. Evidence from the Cochrane Review by Jin et al. (2023) shows that poor coordination or protocol deviations contribute to delays, misdiagnosis, and increased patient risk, underscoring the centrality of behavioral accuracy in emergency care.

Environmental elements are also pivotal. A supportive work environment, including sufficient facilities and well-designed incentive systems, can enhance staff performance. Hospitals equipped with complete facilities, electronic medical records (EMRs), and standardized triage systems enable faster clinical decisions. Stoumpos, Kitsios, and Talias (2023) found that hospitals using tech-driven patient management systems experienced 30% higher emergency care success rates than those using manual systems. Moreover, incentive mechanisms, both rewards and sanctions, affect provider behavior. Financial bonuses, professional recognition, and career advancement opportunities increase motivation. Conversely, penalties for noncompliance promote adherence to medical standards (Li, Zhang, & Han, 2024).

Preliminary findings from the author's survey at a Toraja hospital revealed that while nurses achieved a 98% rate of responding to patients in under 10 minutes, they still fell short of the five-minute ideal. Persistent challenges include staffing shortages, high workloads, outdated protocol training, and infrastructure limitations. These issues necessitate a systematic investigation into the key factors influencing accuracy in emergency departments care. This study aims to analyze the influence of personal, behavioral, and environmental factors on patient management accuracy in the emergency departments of Toraja hospitals, using Social Cognitive Theory as a framework. The findings are expected to provide insights into the interplay among these factors and to support the design of targeted interventions to improve healthcare quality and safety in emergency settings.

METHOD

This study employed a quantitative analytical observational design to examine the relationship between independent and dependent variables through hypothesis testing. A cross-sectional approach was used, in which all data were collected at a single point in time. The study population consisted of all nurses working in the Emergency Departments (ED) of hospitals in Toraja. Using a total sampling technique, the entire population of emergency departments nurses was included as research participants, yielding a final sample of 107 respondents. The distribution of the sample across hospitals is presented in the following table.

The sampling technique used in this research was total sampling, in which all members of the accessible population were included as research participants. Total sampling is recommended when the population size is relatively small and meets criteria for homogeneity (Polit & Beck, 2021). In this study, homogeneity was ensured because all participating hospitals were classified as Type C. Data collection was conducted from May 7 to June 3, 2025, across all emergency room (ER) units in Toraja.

Table 1. Sample distribution across hospitals in toraja

Hospital Name	Hospital Type	Number of ER Nurses
Elim Rantepao Hospital	Type C	20
Sinar Kasih Toraja Hospital	Type C	18
Lakipadada Regional Hospital	Type C	28
Fatima Makale Hospital	Type C	13
Pongtiku Regional Hospital	Type C	17
Saint Teresa Marampa Hospital	Type C	11
Total sample		107

Data were gathered using observation sheets, where the researcher directly observed ER services, including response time, patient severity levels, and length of stay. In addition, a structured questionnaire was used as the primary research instrument. According to Creswell and Creswell (2018), a questionnaire is a systematic set of items designed to obtain specific information from respondents in a consistent and standardized format. The questionnaire in this study was developed to measure personal, behavioral, and environmental factors, as well as accuracy in patient management.

Univariate analysis was used to examine single variables independently, providing a descriptive overview in the form of percentages or proportions. Generally, univariate analysis yields frequency distributions and percentages for each variable. After all data were collected and verified for completeness, the researcher conducted data analysis using the Pearson Product-Moment correlation to examine the relationship between two nominal-scale independent and dependent variables. The variable relationships were then further analyzed using multivariate analysis. The analytical model employed was multiple linear regression, a powerful statistical instrument for analyzing the relationship between an exposure and an outcome while simultaneously controlling for multiple potential confounding factors.

This study, titled "Analysis of Factors Influencing the Accuracy of Patient Management Based on Social Cognitive Theory in the Emergency Room of Hospitals in Toraja, has obtained ethical clearance from the Health Research Ethics Committee of Universitas STRADA Indonesia. This is evidenced by the issuance of the Ethical Feasibility Certificate with reference number: 0723419/EC/KEPK/1/05/2025. The Health Research Ethics Committee of Universitas STRADA Indonesia stated that the research protocol had been thoroughly reviewed to ensure the protection of human rights and the well-being of research subjects. This ethical approval is an essential requirement for conducting research involving human participants, in accordance with both national and international ethical standards.

RESULTS

Table 2. Demographic and professional characteristics of er nurses

Characteristic	Category	n	%
Age (years)	21–30	22	20.6
	31–40	76	71.0
	41–50	9	8.4
Gender	Male	32	29.9
	Female	75	70.1
Work Duration	<1 year	2	1.9
	1–5 years	32	29.9
	6–10 years	39	36.4
	>10 years	34	31.8
Education Level	Diploma (D III)	50	46.7
	Bachelor/Diploma IV	3	2.8
	Bachelor + Profession	54	50.5
Employment Status	Non-civil servant	58	54.2
	Civil servant	49	45.8
Response Time	<5 minutes	46	43.0
	5 minutes	25	23.4
	>5 minutes	36	33.6

Most emergency departments nurses were aged 31–40 years (71%) and predominantly female (70.1%). Work experience was mainly in the 6–10 years range (36.4%), indicating a relatively experienced workforce. More than half held a bachelor's degree and a professional degree (50.5%). Response times varied: 43% responded in <5 minutes, while 33.6% exceeded 5 minutes.

Table 3. Research variable characteristics in ER departments of hospitals

Variable	Mean	Median	Min	Max	SD
Personal	86.76	85.00	69	108	8.566
Behavior	55.10	53.00	42	67	6.230
Environment	69.77	70.00	48	85	8.984
Patient Handling Acc.	74.51	75.00	58	88	8.237

All variables showed relatively good average scores: personal (86.76), behavior (55.10), environment (69.77), and patient handling accuracy (74.51). Standard deviations indicate moderate variability among respondents.

Table 4. Influence of respondent characteristics on accuracy of patient handling in the ER based on social cognitive theory

Respondent variable	Dependent variable	p-value	r-value
Age	Patient handling accuracy	0.893	-0.013
Gender		0.109	-0.156
Work experience		0.922	-0.010
Latest education		0.254	-0.111
Employment status		0.0001	0.405
Response time		0.143	-0.143

Most demographic characteristics showed no significant relationship with patient handling accuracy (p>0.05). Only employment status was significantly associated (p=0.0001), indicating that permanent staff tended to have higher accuracy.

Table 5. Influence of personal, behavior, and environment on patient handling accuracy based on social cognitive theory

Independent variable	Dependent variable	p-value	r-value
Personal	Patient handling accuracy	0.000	0.592
Behavior		0.000	0.672
Environment		0.000	0.576

Personal, behavioral, and environmental factors all showed significant correlations with accuracy (p=0.000). The behavioral factor demonstrated the strongest correlation (r=0.672), followed by personal and environmental factors.

Table 6. Results of factors affecting patient handling accuracy in the ER based on social cognitive theory

Independent variable	Dependent variable	B	Std. Error	Beta	t	Sig.
Personal	Patient Handling Accuracy	0.139	0.102	0.144	1.359	0.177
Behavior		0.564	0.144	0.426	3.924	0.0001
Environment		0.207	0.084	0.226	2.465	0.015
Coefficient of determination (R Square): 0.502						

The regression model explained 50.2% of the variance in patient handling accuracy. The behavioral factor was the strongest and most significant predictor (p=0.0001), followed by the environmental factor (p=0.015). The personal factor was not significant in the multivariate model.

DISCUSSION

A study involving 107 ER nurses across hospitals in Toraja found that personal factors significantly influenced the accuracy of patient management (p=0.000). One influential personal factor was observational learning, the process by which individuals learn by observing others' behavior, particularly in applying correct and efficient medical procedures. This study revealed that nurses trained to model appropriate behavior tend to effectively transfer knowledge and skills to their peers, thereby improving timeliness and precision in patient management. Theoretically, ER care is not limited to medical actions but also includes emotional and psychological support for patients and their families who are often under significant stress and anxiety (Sahrudi & Anam, 2021).

According to Bandura's theory, individuals are more likely to imitate behaviors they observe, especially when those behaviors are perceived as successful and effective (Bandura, 2023). In the ER context, experienced nurses are more likely to serve as role models for their colleagues. This aligns with the respondent characteristics, which show that 36.4% of nurses had 6-10 years of experience. These experienced nurses tend to model accurate and efficient behavior, thus impacting patient management outcomes. In contrast, nurses with less than 1 year (1.9%) or 1–5 years (29.9%) of experience may still be in the learning phase and rely more on observation than on the autonomous application of skills. This is supported by Kılınç, Yıldız, and Harmanci (2018), who showed that individuals learn not only through direct experience but also via observing others (models). Nursing students' confidence increases through direct practice, observation, and verbal feedback.

Outcome expectation, the anticipation of results from one's actions, also plays a significant role in influencing the accuracy of patient management. Nurses who believe that timely and appropriate actions can save lives are more motivated to provide accurate care (Okuboyejo, Mbarika & Omoregbe, 2018). The majority of respondents aged 31–40 years (71.0%) may have higher outcome expectations than their younger or older counterparts. At this mature age, nurses typically have a better understanding of the implications of timely and accurate care. Those holding bachelor's degrees and professional certification (50.5%) are also likely to have greater expectations, as their education provides deeper insight into the importance of prompt medical intervention. This is supported by Babaei, Taleghani, and Farzi (2022), who found that professional attitudes, clinical skills, and teamwork in ERs significantly affect the accuracy of patient care in emergencies.

Another key factor is self-efficacy, the belief in one's own ability to perform tasks effectively. Nurses with high self-efficacy feel more confident in critical situations, which is crucial in ER settings (Islam et al., 2023). Most respondents had a D-III (46.7%) or bachelor's/professional education (50.5%). This higher level of education likely enhances their confidence in performing clinical procedures. Additionally, nurses who had worked for over five years (68.2%) tend to have higher self-efficacy due to their greater experience in managing rapid-response situations. Sharour et al. (2022) found that nurses with higher self-efficacy demonstrated better patient care capabilities, resulting in more effective interactions and better outcomes.

Self-regulation refers to an individual's ability to control behavior and adhere to established standards. Highly self-regulated nurses are more likely to follow standard operating procedures without constant supervision, which is crucial for accurate patient management (Cuyvers et al., 2024). Respondents included both non-civil servant nurses (54.2%) and civil servants (45.8%), who likely vary in self-regulation. Civil servants, with more stable career paths, may exhibit higher self-discipline and procedural adherence compared to non-civil servants with more varied experiences. Nurses with 6–10 years of experience (36.4%) are generally better at self-regulation, as they are more familiar with routines and protocols.

Moral disengagement, the tendency to detach from moral or ethical norms when performing duties, can lead to neglecting medical protocols, thus compromising patient care. This may occur more often among nurses with over 10 years of experience (31.8%) who may feel less scrutinized due to seniority. This factor is also linked to employment status, where non-civil servant nurses, who may receive fewer incentives or recognition, are more susceptible to moral disengagement. Mann, Clarke, and Johnson (2024) showed that moral intensity and disengagement significantly influence safety behaviors at work, especially in crisis settings.

In relation to these characteristics, age and work experience play critical roles in enabling faster and more accurate medical decisions. More experienced nurses with higher levels of education are likely to be better prepared for standard-compliant patient management. However, variations in employment status (civil vs. non-civil servant) and response time reflect differences in roles, responsibilities, or understanding of ER urgency.

This study indicates that age, experience, and education significantly affect the accuracy of patient care. Thus, continuous training and reinforcement of standard procedures are essential for all healthcare professionals, regardless of employment status, while maximizing their experience and education.

The researcher concludes that personal factors, including observational learning, outcome expectations, self-efficacy, self-regulation, and moral disengagement, significantly influence the accuracy of patient care in the ER. Nurses who habitually model appropriate clinical behaviors are more effective in transferring skills and knowledge to their peers, ultimately improving the efficiency and speed of patient management.

LIMITATIONS

This study has several limitations that should be considered when interpreting the findings. First, the research was conducted at only one hospital in Toraja, limiting the generalizability of the results to hospitals with different characteristics or operational contexts. The study also focused exclusively on nurses working in the Emergency Department, thereby excluding other healthcare professionals who may influence the accuracy of patient management.

Although environmental factors such as hospital facilities and incentive systems were examined, other external influences—including workload and workplace stress—were not explored in depth, limiting the understanding of how these variables may affect performance. Additionally, the use of a cross-sectional design allows only for the description of relationships at a single point in time and does not permit causal inferences. A longitudinal design would be better suited to assessing behavioral changes and variations in patient handling accuracy over time, offering more profound insights into the causal pathways among the studied variables.

AUTHOR'S DECLARATION

Authors' contributions and responsibilities

All authors contributed substantially to the completion of this manuscript. **YP:** Conceptualization, the original draft, visualization, and funding acquisition; **II:** Writing original draft, validation, review, and editing; **YS:** provided primary supervision, shared responsibility for validation, led the review and editing process, and provided additional support in funding acquisition. All authors have reviewed and approved the final manuscript and accept full responsibility for its content.

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Availability of data and materials

All data are available from the authors.

Competing interests

The authors declare no competing interests.

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