

THE EFFECT OF TRIAGE SYSTEM IMPLEMENTATION ON PATIENT SATISFACTION IN THE EMERGENCY DEPARTMENT OF RSUP HAJI ADAM MALIK MEDAN

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Abstract

The implementation of a triage system in the Emergency Department (ED) is an essential component in ensuring patient safety, as it functions to determine treatment priorities based on the level of urgency in a rapid, accurate, and objective manner. An effective triage system enables early identification of life-threatening conditions, prevents delays in critical interventions, and optimizes the use of healthcare resources. Proper triage implementation contributes to service efficiency, reduced waiting time, improved quality of care, and increased patient satisfaction. Therefore, standardized and professional triage practices are crucial in emergency care systems. This study aimed to analyze the effect of triage system implementation on patient satisfaction in the Emergency Department of RSUP Haji Adam Malik. This study employed a quantitative design with a cross-sectional approach. The sample consisted of 100 adult patients aged 18–60 years who received care in the ED, selected using accidental sampling. Data analysis was conducted using univariate analysis, bivariate analysis with the chi-square test, and multivariate analysis using logistic regression. The results showed that response time ($p = 0.017$), staff empathy ($p = 0.031$), clarity of information ($p = 0.015$), and comfort during waiting time ($p = 0.000$) had a significant effect on patient satisfaction, while staff attitude did not show a significant effect ($p = 0.945$). The most dominant variable influencing patient satisfaction was triage staff empathy. In conclusion, effective triage implementation characterized by prompt response, empathetic communication, clear information delivery, and a comfortable waiting environment plays a significant role in enhancing patient satisfaction in the Emergency Department.

Keywords: Triage Response Time, Staff Attitude, Empathy Clarity of Information, Waiting Comfort

Introduction

Hospitals play a critical role as healthcare institutions that provide comprehensive individual health services, including inpatient, outpatient, and emergency care. As part of the healthcare system, hospitals are expected to deliver high-quality, safe, and efficient services to meet increasing public demands for healthcare quality. In line with global health system transformation, strengthening emergency care services has become a priority to ensure responsiveness, resilience, and patient-centered care (WHO, 2023).

The Emergency Department (ED) represents the frontline of hospital services, providing immediate care for patients with urgent and life-threatening conditions. The effectiveness of ED services is highly dependent on rapid clinical decision-making, timely interventions, and optimal resource utilization. One of the most essential components in emergency care is the triage system, which functions to prioritize patients based on the severity of their condition to ensure that critically ill patients receive immediate attention (Haryanto & Aprilia, 2025).

Triage is a systematic process used to classify patients according to urgency levels, enabling healthcare providers to manage patient flow efficiently and reduce delays in treatment. A well-implemented triage system has been shown to improve workflow efficiency, reduce waiting times, decrease mortality rates, and enhance patient satisfaction (Global Health Science Group, 2025).

However, challenges in triage implementation remain significant, particularly in the context of increasing patient visits, limited healthcare resources, and overcrowding in ED settings. High patient volume and inadequate staffing can lead to prolonged waiting times, decreased accuracy in patient prioritization, and reduced quality of care (Midwifery Journal, 2025).

These challenges may ultimately impact patient satisfaction, which is widely recognized as a key indicator of healthcare service quality.

Patient satisfaction in the ED is strongly influenced by several factors, including response time, communication, empathy, and service environment. Among these, response time is considered one of the most critical indicators, as delays in treatment may not only reduce patient satisfaction but also increase the risk of morbidity and mortality. Studies have shown a significant relationship between triage response time and patient satisfaction, indicating that faster response times are associated with higher levels of patient satisfaction (Arifianti et al., 2025; Muzamil et al., 2025).

In Indonesia, the implementation of triage systems varies across hospitals due to the absence of a fully standardized national triage model. This variation may lead to inconsistencies in service quality and patient outcomes. Furthermore, the increasing number of ED visits has contributed to overcrowding, which poses a major challenge to maintaining effective triage systems and optimal patient care.

RSUP Haji Adam Malik is a Type A referral hospital in Medan that provides comprehensive healthcare services and operates a 24-hour Emergency Department. Recent hospital data indicate a significant increase in ED visits, which may affect triage performance, response time, and overall service quality. Preliminary findings also suggest that patient dissatisfaction is primarily related to waiting time and delays in service delivery.

Given the critical role of triage in emergency care and the challenges faced in its implementation, it is essential to evaluate how triage practices influence patient satisfaction. Therefore, this study aims to analyze the effect of triage system implementation on patient satisfaction in the Emergency Department of RSUP Haji Adam Malik Medan.

Methods

This study used a quantitative design with a descriptive-analytic approach and a cross-sectional method. The study was conducted at the Emergency Department of RSUP Haji Adam Malik, Medan, from December 2024 to January 2025.

The population consisted of all patients or their family members visiting the Emergency Department, with an average monthly visit of 2,476 patients in 2024. The sample size was determined using the Slovin formula with a 10% margin of error, resulting in 100 respondents. Sampling was performed using accidental sampling based on inclusion and exclusion criteria.

Inclusion criteria were patients or family members aged 18–60 years, fully conscious, able to communicate, and categorized as triage levels yellow or green who had completed ED services. Exclusion criteria included critically ill patients (triage red), patients referred to other hospitals, those who left against medical advice, and those unwilling to participate.

Data were collected using a structured questionnaire measuring triage system implementation (response time, staff attitude, empathy, clarity of information, and waiting comfort) and patient satisfaction. All variables were measured using ordinal scales.

The instrument was tested for validity through expert judgment and reliability using Cronbach's Alpha, with all variables showing values >0.80, indicating good internal consistency.

Data analysis included univariate analysis for frequency distribution, bivariate analysis using the chi-square test to examine associations, and multivariate analysis using logistic regression to identify dominant factors affecting patient satisfaction. Ethical approval was obtained prior to the study. Informed consent was collected from all respondents, and confidentiality and anonymity were strictly maintained.

Result

1. Respondent Characteristics.

Table 1. the majority of respondents were female (54%), aged 26–45 years (72%), and predominantly worked as private employees (38%).

Table 1. Distribution of Respondent Characteristics

Variable	Category	n	%
Gender	Male	46	46
	Female	54	54
Age	≤25 years	21	21
	26–45 years	72	72
	>45 years	7	7

2. Univariate Analysis

Table 2. Most respondents perceived response time as poor (54%), while staff attitude (58%), information clarity (54%), and waiting comfort (52%) were generally rated as good. Patient satisfaction was slightly lower, with 51% reporting dissatisfaction.

Table 2. Distribution of Study Variables

Variable	Category	n	%
Response Time	Poor	54	54
	Good	46	46
Staff Attitude	Poor	42	42
	Good	58	58
Empathy	Poor	50	50
	Good	50	50
Information Clarity	Poor	46	46
	Good	54	54
Waiting Comfort	Poor	48	48
	Good	52	52
Patient Satisfaction	Not satisfied	51	51
	Satisfied	49	49

3. Bivariate Analysis

Table 3. all variables showed a statistically significant relationship with patient satisfaction ($p < 0.05$), indicating that each aspect of triage service is associated with patient satisfaction.

Table 3. Association Between Triage System Variables and Patient Satisfaction

Variable	p-value	Interpretation
Response time	0.000	Significant
Staff attitude	0.000	Significant
Empathy	0.000	Significant
Information clarity	0.000	Significant
Waiting comfort	0.000	Significant

4. Multivariate Analysis

Table 4. Multivariate analysis showed that response time, empathy, information clarity, and waiting comfort significantly influenced patient satisfaction ($p < 0.05$). Meanwhile, staff attitude did not have a significant effect ($p = 0.945$). Empathy was identified as the most dominant variable (OR = 41.613), indicating that higher perceived empathy from triage staff greatly increases the likelihood of patient satisfaction.

Table 4. Logistic Regression Analysis of Factors Affecting Patient Satisfaction

Variable	B	p-value	OR
Response time	-3.548	0.017	0.029
Staff attitude	-0.095	0.945	0.909
Empathy	3.728	0.031	41.613
Information clarity	-3.823	0.015	0.022
Waiting comfort	-7.659	0.000	0.000

Discussion

This study demonstrates that the implementation of the triage system significantly influences patient satisfaction in the Emergency Department (ED) of RSUP Haji Adam Malik. The findings indicate that response time, empathy, clarity of information, and waiting comfort are significant determinants of patient satisfaction, while staff attitude does not show a significant effect in the multivariate analysis.

Response time was found to have a significant effect on patient satisfaction. This finding is consistent with previous studies highlighting that rapid assessment and timely intervention are critical indicators of quality emergency care. Delays in triage and treatment can lead to patient dissatisfaction and potentially worsen clinical outcomes. Efficient triage systems are designed to prioritize patients based on urgency, thereby reducing waiting time and improving service flow (Coster et al., 2020; Morley et al., 2021). In this study, more than half of respondents perceived response time as inadequate, suggesting the need for improving workflow efficiency and staffing in the ED.

Empathy emerged as the most dominant factor influencing patient satisfaction. This finding emphasizes the importance of interpersonal communication and emotional support in emergency care settings. Patients in the ED often experience anxiety, pain, and uncertainty, making empathetic interactions from healthcare providers highly valuable. This result aligns with the SERVQUAL theory, which identifies empathy as a key dimension of service quality. Previous research also supports that

empathetic communication enhances patient trust, satisfaction, and overall care experience (Rasoolimanesh et al., 2021; Ahmed et al., 2022).

Clarity of information was also significantly associated with patient satisfaction. Clear and effective communication regarding patient condition, waiting time, and treatment procedures helps reduce uncertainty and increases patient confidence in the healthcare system. This finding is supported by studies indicating that transparent communication is essential in emergency settings where patients and families require timely and accurate information (Alshammari et al., 2020; Alrasheedi et al., 2021).

Waiting comfort showed a strong and significant influence on patient satisfaction. The physical environment of the ED, including seating, cleanliness, noise levels, and overall comfort, plays an important role in shaping patient perceptions. Overcrowding and prolonged waiting times can lead to discomfort and dissatisfaction. Similar findings have been reported in previous studies, where environmental factors significantly impacted patient experience in emergency care settings (Morley et al., 2021; Carter et al., 2022).

Interestingly, staff attitude did not show a significant effect in the multivariate analysis, despite being significant in the bivariate analysis. This suggests that when other factors such as empathy and communication are considered simultaneously, the general attitude of staff becomes less influential. It is possible that patients prioritize more specific aspects of interaction, such as empathy and clarity of communication, over general demeanor. This finding is consistent with previous studies indicating that technical and interpersonal competencies may have varying degrees of influence depending on the context (Ahmed et al., 2022).

Overall, this study highlights that both technical aspects (such as response time) and non-technical aspects (such as empathy and communication) are essential in improving patient satisfaction. The findings suggest that interventions aimed at improving triage implementation should not only focus on operational efficiency but also on enhancing communication skills and patient-centered care.

Conclusion

This study concludes that the implementation of the triage system has a significant influence on patient satisfaction in the Emergency Department of RSUP Haji Adam Malik. Key factors affecting patient satisfaction include response time, empathy, clarity of information, and waiting comfort, while staff attitude was not found to have a significant effect in the multivariate analysis.

Among these variables, empathy emerged as the most dominant factor, highlighting the importance of patient-centered care and effective interpersonal communication in emergency settings. These findings indicate that improving technical efficiency alone is not sufficient; healthcare providers must also prioritize empathetic interactions and clear communication to enhance patient experience.

Therefore, efforts to improve triage implementation should focus on accelerating response time, strengthening communication skills, fostering empathetic care, and improving the comfort of the waiting environment. Integrating both technical and non-technical aspects of care is essential to achieve higher levels of patient satisfaction in emergency services.

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