



The Relationship of Triage Competence with The Performance of Emergency Room Nurses at General Hospitals

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ABSTRACT

Triage assessment unsuitable with patient conditions has a risk of increasing pain level, disability, and death. It causes nurses to perform non-optimal emergency nursing care for patients. This study aimed to analyze triage competency factors affecting ER nurse performance in performing emergency nursing care. The current study used the analytic observational design. The study was performed at ER of RSUD Bahteramas and RSUD Kendari City from 1 March – 7 April 2021, with all ER nurses as the samples. Total sampling was applied to obtain 55 nurses. Data analysis was conducted using the Rank Spearman and ordinal logistic regression tests. The study result shows a relationship between triage knowledge and skills with ER nurse performance in performing emergency nursing care with a p-value of 0.533. The most dominant factor affecting ER nurse performance in performing emergency nursing care was skills, with an odds ratio of 4.61.

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Kata kunci:

Kompetensi triage
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ABSTRAK

Penilaian triase yang tidak sesuai dengan keadaan pasien memiliki resiko dalam meningkatkan angka kesakitan, kecacatan bahkan kematian pasien sehingga membuat kinerja perawat tidak maksimal dalam melakukan asuhan kegawatn bagi pasien. Penelitian ini bertujuan untuk menganalisis faktor kompetensi triage yang mempengaruhi kinerja perawat IGD dalam melakukan aspek kegawatdarurata. Penelitian ini menggunakan desain observational analitik yang telah dilaksanakan di ruang IGD RSUD Bahteramas dan RSUD Kota Kendari pada 1 maret - 7 april 2021, dengan sampel semua perawat yang bertugas diruang IGD. Teknik sampling menggunakan total sampling dengan jumlah responden 55 Perawat. Analisa data menggunakan uji rank spearman dan uji regresi logistik ordinal. Hasil penelitian menunjukkan ada hubungan pengetahuan triage, keterampilan triage dengan kinerja perawat IGD dalam melakukan aspek kegawatdaruratan dengan p-value 0,021 dan 0,000 dan tidak ada hubungan sikap triage dengan kinerja perawat IGD dalam melakukan aspek kegawatdaruratan dengan p-value 0,533. Faktor paling dominan berpengaruh terhadap kinerja perawat IGD dalam melakukan aspek kegawatdaruratan adalah keterampilan dengan nilai odds ratio paling besar yaitu 4,61.

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INTRODUCTION

The Emergency Room (ER) is a service unit established by the hospital to provide emergency care. Patients

administered to ER require immediate and appropriate help following their clinical conditions (Kemenkes RI, 2009)

Data of patient visits to the Emergency Room (ER) across Indonesia reaches 4.402.205 (13,3% of total hospital visits), with a 12% visit from 1,033 general hospitals from a total of

1,319 hospitals. This significant amount should be considered in emergency patient care (Kemenkes RI, 2009).

The Emergency Room (ER) requires skillful and educated nurses in delivering healthcare services to patients. ER nurses should master the triage skills to deliver optimal emergency care to patients (Asmawi et al., 2017).

Triage competency is a vital aspect in treating patients in ER. It consists of an initial assessment when the patient is in ER. Triage competency comprises three aspects, i.e., knowledge, attitude, and skills in categorizing patients according to the emergency type and level by considering the facilities, human resources, and patient probability. Triage aims to reduce all patients' pain and death levels administered to ER (Garbez et al., 2011).

The problem emerging in triage implementation is difficulties in determining action priority and late detection on the patient's emergency level. Several factors affecting triage are the number of medical workers and facilities, incoming patient flow (overcrowded), knowledge level, and nurse skills on triage implementation (Khairina et al., 2018). Nurses should have the knowledge, attitude, and skills in effective communication, objectivity, and making clinical decisions quickly and appropriately to maximize the treatment for ER patients (Irawati, 2017).

The study result by (Asmawi et al., 2017) stated that skill is the most dominant factor affecting nurse performance in performing triage. However, a study by (Khairina et al., 2018) asserted that knowledge is the dominant factor in performing triage accuracy.

METHOD

Participant characteristics and research design

Characteristics of participants in this study were nurses who kept in the emergency room at RSUD Bahteramas and RSUD Kota Kendari. The research design used observational analytic with a cross sectional study approach.

Sampling procedures

The research data was obtained from the observation sheet of triage skills and filling out knowledge and attitude questionnaires by emergency room nurses. The sampling technique used is total sampling. The research was carried out in 1 March 2021- 1 April 2021 at RSUD Bahteramas and RSUD Kota Kendari.

Table 1.
The relationship of triage knowledge of triage knowledge, triage attitude, and triage skills with the performance of emergency room nurses at general hospitals

| Variable | Correlation coefficient | p-value |
|--------------------------------|-------------------------|---------|
| Triage Knowledge – Performance | 0,311 | 0,021 |
| Attitude – Performance | 0,086 | 0,533 |
| trriage Skills – Performance | 0,578 | 0,000 |

Based on the results of the bivariate analysis test, the variables that meet the requirements to be included in the

Sample size, power, and precision

The population in this study were all nurses who kept in the emergency room at RSUD Bahteramas and RSUD Kota Kendari totaling 55 nurses.

Measures and covariates

Data were obtained through observation sheets on triage skills and filling out knowledge and attitude questionnaires by emergency nurses. The triage knowledge questionnaire and triage skill observation sheet used a modified instrument from Irawati, (2017).The attitude instrument was modified from Lestari, (2015) while the performance instrument was modified from Royani et al., (2012). The research data was then processed to determine the relationship of all triage competency factors with nurse performance using the SPSS 22 program.

Data analysis

Bivariate analysis was performed using Spearman's rank test to determine the relationship between knowledge, skills and attitudes with the performance of emergency nurses. Ordinal regression analysis was used to determine the most influential factors on the performance of emergency nurses. All variables were considered significant at the $p < 0.05$ level.

RESULT AND DISCUSSION

Based on the results of the Spearman rank test analysis, it can be seen that there is a relationship between triage knowledge and the performance of emergency nurses with a p-value of 0.021 with a correlation coefficient of 0.311, meaning that the strength of the relationship is in a strong enough category so that the higher the triage knowledge of nurses, the better the performance (Table 1). The same thing for the skill variable, the results of the spearman rank analysis show that there is a relationship between triage skills and the performance of emergency nurses with a p-value of 0.000 with a correlation coefficient of 0.578 meaning that the strength of the relationship is in the strong category so that the higher the triage skills of nurses, the better the performance (Table 1).

While the results of the Spearman Rank test on the attitude and performance variable showed that there was no relationship between the attitude of the triage of nurses and the performance of nurses in carrying out nursing care in the emergency room with a p-value of 0.533 with a coefficient of correlation of 0.086 (Table 1).

multivariate analysis are the knowledge and skills triage variables with p-value < 0.25 (Table 2).

Table 2.
Variable selection from the Chi-square Pearson value of independent on dependent variables

| Variable | p-value |
|-----------|---------|
| Knowledge | 0,000 |
| Skills | 0,001 |

Based on the partial test, both variables, i.e., skills and knowledge, affected nurse performance with a p-value < 0.05.

Table 3 shows that factors affecting nurse performance were triage skills and knowledge with a p-value < 0.05. Thus, the ordinal regression equation model is:

$$\text{Logit } Y = \alpha_{1-k} + \beta_1 X_1 + \beta_2 X_2$$

$$\text{Logit } Y_1 = 16.626 + 1.5129 (\text{Skills}) + (0,976) (\text{Knowledge})$$

$$\text{Logit } Y_2 = 20.155 + 1.5129 (\text{Skills}) + (0,976) (\text{Knowledge})$$

Table 3
Partial ordinal logistic regression test

| Variable | Estimate | Wald | p-value | Odds Ratio |
|---------------|----------------|----------|---------|------------|
| Performance | 16.626 | 104.916 | 0.000 | |
| Performance | 20.155 | 154.183 | 0.000 | |
| Knowledge (1) | 0.976 | .313 | 0.036 | 2.65 |
| Knowledge (2) | 1.287 | .527 | 0.046 | |
| Knowledge (3) | 0 ^a | . | . | . |
| Skills (1) | 1.5129 | 251.482 | 0.000 | 4,61 |
| Skills (2) | 1.8391 | 141.242. | 0.001. | |
| Skills (3) | 0 ^a | . | . | . |

The odds ratio calculation was only applied on independent variables with significance on the model. Based on the partial test output result, the odds ratio of the skill variable was $\exp. (1.5129) = 4,61$. That is, a 4.61-fold performance increment was obtained in nurses with high triage skills than those with poor skills. Meanwhile, the odds ratio of the knowledge variable was $\exp. (0,976) = 2,65$. That is, a 2.65-fold performance increment was acquired in nurses with quality knowledge than those with poor knowledge.

DISCUSSION

The relationship of triage knowledge and Emergency Room (ER) nurse performance in performing emergency nursing care at general hospitals

The Rank Spearman test result shows a p-value of 0.021. Since the p-value < 0.05, there was a relationship between triage knowledge and Emergency Room (ER) nurse performance in performing emergency nursing care at general hospitals in Southeast Sulawesi. The relationship was robust with a correlation coefficient of 0.311; therefore, improved triage knowledge will improve nurse performance.

This study result is supported by Khairina et al., (2018) study, demonstrating that triage knowledge level was related to triage clinical decisions in ER with a p-value of 0.012. The study mentioned that appropriate triage clinical decisions in treating emergency patients could improve nurse performance in performing emergency nursing care. The same finding was discovered in a study by Kerie et al., (2018), where a relationship between triage knowledge and ER nurse performance was present with a p-value of 0.002.

Knowledge is the result of human sensing or comprehension of an object through human senses. Knowledge is a crucial aspect of an officer since it affects service performance. High knowledge leads to effective and efficient task implementation, thus improving performance (Zuhriana et al., 2012).

Nurse triage knowledge affects nurse performance in performing emergency nursing care in the ER, particularly in delivering primary surveys when the patient is administered to ER. Good triage knowledge leads to appropriate triage decision-making. Hence, patient treatment is adjusted to their clinical conditions, minimizing condition deterioration (Harmono et al., 2016).

According to Göransson et al., (2015) lack of triage knowledge and waiting time limit may delay emergency patient treatment. It may increase the disability and death risk. The importance of triage in the ER ensures that each patient is treated according to the clinical emergency priority, leading to appropriate treatment (Aloyce et al., 2014).

The relationship of triage attitude and Emergency Room (ER) nurse performance in performing emergency nursing care at general hospitals

The Spearman Rank test result shows a p-value of 0.533. Since the p-value > 0.05, no relationship was present between triage attitude and Emergency Room (ER) nurse performance in performing emergency nursing care at general hospitals in Southeast Sulawesi. This study result is reinforced by Asmawi et al., (2017), revealing that triage attitude had no relationship with nurse performance in the ER with a p-value of 0,425. It contrasts a study by Gurning et al., (2014), discovering the relationship of triage attitude and ER nurse performance with a p-value of 0,006.

Attitude is the evaluation or reaction of feelings. One's attitude towards an object is a favorable feeling or an unfavorable feeling (Azwar, 2012). (Notoatmodjo, 2014) argued that individual attitude and behavior tend to be influenced by information and knowledge available for them. A positive attitude on received information will affect each action. A positive person tends to properly understand each information, while a negative person tends to misunderstand.

Nurse attitude in performing triage in the ER was unrelated to ER nurse performance in performing emergency nursing care. The researchers assumed that besides the study

respondent's limited size, it was also because attitude is an everchanging feeling on an object generated from various factors, e.g., crowded patients, lack of beds, and the ER nurse workload.

The relationship of triage skills and Emergency Room (ER) nurse performance in performing emergency nursing care at general hospitals

The Rank Spearman test result shows a p-value of 0.000. Since the p-value < 0.05, there was a relationship between triage skills and Emergency Room (ER) nurse performance in performing emergency nursing care at general hospitals in Southeast Sulawesi. The relationship was robust with a correlation coefficient of 0.578; therefore, improved triage skills will improve nurse performance.

This study result is supported by Artlinta's (2013) study, demonstrating a relationship between triage skills and emergency nurse performance with a p-value of 0.003. It follows a study by Martínez-Segura et al., (2017), showing a relationship between triage skills and nurse performance in the ER with a p-value of 0.001.

According to As. Glicman, 1991 in Moeheriono, (2012), a skill is the most specific instructional behavior possessed by a person to carry out a particular task effectively, efficiently, and professionally.

Triage skills of nurses are related to their performance in the ER. Rizki & Handayani, (2018) argued that triage skill is vital for emergency unit nurses, particularly in clinical decision-making, where skills are vital for nurse performance in the initial assessment. Nurses should prioritize and determine the appropriate triage category for patients to perform appropriate treatments.

A triage nurse is the first person encountered by the patient when coming to the ER. The qualitative study result by Febrina et al., (2018) stated that triage skills are beneficial for nurses in performing nursing care to patients since they can prioritize emergency patients to perform appropriate treatments. It follows the study by Hong & Lee, (2016), showing that nurses with triage skills in the intervention group had better performance than the control group.

The most dominant independent variable on Emergency Room (ER) nurse performance in performing emergency nursing care at general hospitals

The multivariate analysis result using the ordinal regression test shows the triage skill odd ratio of 4.61 and the triage knowledge odd ratio of 2.65. The most dominant independent variable on Emergency Room (ER) nurse performance in performing emergency nursing care at general hospitals in Southeast Sulawesi was triage skill with the highest odds ratio, i.e., 4.61.

Skill is the most dominant factor affecting nurse performance in performing nursing care in the ER. It is reinforced by the study result of Asmawi et al., (2017), revealing that skill was the most dominant factor affecting nurse performance with a p-value of 0.019. A study by Dadashzadeh et al., (2014) asserted that the most dominant factor affecting ER nurse performance was the skill with a p-value of 0.002.

Triage skills are one's ability to implement knowledge into actions. In the ER, nurse knowledge and skills are vital, primarily in clinical decision-making for an initial assessment. Nurses should prioritize patients based on appropriate decisions to support nurse performance in

performing emergency nursing care in the ER. Therefore, special knowledge and skills are crucial in categorizing patients' emergency type and level during triage; thus, optimizing patient care (Amri et al., 2019).

Training can improve healthcare workers' skills in performing their duties (Virgillio, 2013). In the patient history examination skill, nurses focus on the primary complaints, when such complaints emerge, and actions pre-administration to the ER. Other considerations during triage include repetitive symptoms with augmented intensity, symptoms with substantial changes, progressive deterioration, an extremely young or old age, and patients' failure in describing the problem source (Amri et al., 2019).

Triage skills are critical for nurses appointed in the ER, particularly in emergencies. Triage skills should be improved through continuous triage and emergency training to improve nurse performance in performing emergency nursing care and minimize the disability and death rate in emergencies.

CONCLUSION AND SUGGESTION

Based on the results of the study, it can be concluded that there is a relationship between triage knowledge and skills with the performance of nurses in the emergency room with p-values of 0.021 and 0.00 and there is no relationship between attitudes and nurses' performance in conducting triage in the emergency room with p-values 0.086 and the most dominant competence factor affecting Emergency Room (ER) nurse performance in performing emergency nursing care at general hospitals in Southeast Sulawesi is skills with a high odds ratio, i.e., 4.61.

The study results can be utilized to develop nursing science regarding competence factors affecting nurse performance in the ER. This study can be developed for future researchers using various plausible variables affecting nurse performance in performing emergency nursing care in the Emergency Room (ER).

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ETHICAL CONSIDERATION

The researchers explained the study goal and objective to respondents using informed consent. Only after the respondents consented to participate was the researchers collected study data. The study acquired ethical clearance from the Ethics Committee of Universitas Haluoleo number 1827/UN29.20.1.2./PG/2021.

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Conflict of Interest statement

The author declares that there is no conflict of interest.

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