

## ORIGINAL ARTICLE

# Determinant Factors of Accuracy of Triage Implementation in Emergency Department X Hospital, Indonesia

Rita Dwi Pratiwi<sup>1</sup>, Ratumas Ratih Puspita<sup>1</sup>, Fenita Purnama Sari Indah<sup>2</sup>, Darni Nur Indahsari<sup>1</sup>, Hafizah Che Hassan<sup>3</sup>, Lee Siew Hoon<sup>3</sup>, Sandeep Poddar<sup>4</sup>

<sup>1</sup> Departement of Nursing, Widya Dharma Husada Tangerang School Of Health Science, Pajajaran Street, Pamulang District, South of Tangerang, 15417, Indonesia

<sup>2</sup> Departement of Public Health Kharisma Persada School Of Health Science, Pajajaran Street, Pamulang District, South of Tangerang, 15417, Indonesia

<sup>3</sup> Faculty of Nursing, Lincoln University College, No. 2, Jalan Stadium, SS 7/15, Kelana Jaya, 47301, Petaling Jaya, Selangor Darul Ehsan, Malaysia

<sup>4</sup> Lincoln University College, Wisma Lincoln, No. 12-18, Off Jalan Perbandaran, S6/12, Kelana Jaya, 47301 Petaling Jaya, Selangor D. E., Malaysia

## ABSTRACT

**Introduction:** The ability of nurses to conduct triage greatly influences the success rate of help when patients experience emergency. The aim of the study was to determine the factors associated with the accuracy of the implementation of triage in the X Hospital's Emergency Departments. **Methods:** The research method that the researcher used was cross sectional approach. The number of samples were 32 respondents. Questionnaire and observation were used to collect the data. **Results:** Respondents characteristics (age, sex, education, and tenure) with the accuracy of the triage were obtained by age with p value = 0.386, p value = 1,000 for gender, p value = 0.242 for education, and years of work with p value = 0.000162. Knowledge of respondents with the implementation of the determination of triage p value = 0.045 and motivation of respondents with the accuracy of the implementation of triage p value = 0.0017. **Conclusion:** The accuracy of the implementation of triage has no relationship with characteristics (age, sex, education), there is a relationship between knowledge, motivation and years of work with the implementation's accuracy of triage in the Emergency Room X Hospital. Suggestions are expected by the Hospital to make guidelines, triage algorithms, training, regeneration to improve nurse triage knowledge.

**Keywords:** Implementing Nurse, Triage, Emergency Instalation

### Corresponding Author:

Ns. Rita Dwi Pratiwi, MSc

Email: ritadwipratiwi@wdh.ac.id

Tel: +62-89529263441

## INTRODUCTION

Emergency Department (IGD) is a service unit in a hospital that provides services to people who experience acute illness or who experience trauma in accordance with established standards. Emergency department is a condition where the patient requires an immediate medical examination and if it's not carried out, the examination will be fatal to the patient (1). The emergency department has the goal of optimally performing health care for patients quickly and precisely and integrated with emergency treatment to prevent death and disability (to save life and limb) with treatment time or response time for five minutes and definitive time of no more than two hours (2).

Increased public access to use emergency facilities is proportional to the increase in the number of patient visits, resulting in emergency department being overcrowded

or full of patients with all the consequences and at the same time a matter of national and international crisis (3). In 2007, data on patient visits to emergency department throughout Indonesia reached 4,402,205 people (13.3% of all visits to public hospitals) with 12% of emergency department visits coming from referrals with 1,033 public hospitals of the 1,319 Hospitals (4). Whereas in 2013 the number of visits in the ED was 11,650,239 people (13.17% of the total number of visits). This significant amount then requires considerable attention to the services of emergency patients (5). Until now there has been no information related to the number of nurses in Indonesia experienced in the emergency department, but the main problem of hospitals in Indonesia is the lack of emergency nurse performance.

X. Hospital is a public service owned by the Ministry of Health, one of which is emergency services. In the last 3 months the number of Emergency Department visits increased, in December 2018 there were 627 patients, in January 2019 there were 566 patients and in February 2019 there were 851 patients. With 18 nurses including the head of the room, divided into 3 shifts. There are 4-5 people in morning shifts including supervisors, the

afternoon shifts are 4 or 5 people, and night shifts are 3 people, with one doctor on duty per shift.

Every patient who comes to the emergency department will be triaged. Triage is an action in which patients are classified according to their priority. Patients who experience emergency conditions (red card), emergency and non-emergency conditions (yellow card), non-emergency and non-emergency conditions (green card) and death arrival (black card) (6). Accurate triage classification is the key to efficient action in the emergency department. So that the order of patients handling does not need to be the same with the order of patients' arrival to the emergency department. Patients with low priority will wait longer for assessment and treatment. Handling of patients performed without sorting patients' triage of emergency and based on the order of arrival patients will result the delays in handling critical patients so potentially deadly for critical patients (7).

Determination of priority treatment will be influenced by the level of emergency patients, the number of patients coming, the ability of emergency nurses, the availability of supporting equipment and space (8). The ability of nurses in triage is very influential on the success rate of help when patients have an emergency condition. Referring to a research by Martianti (2015), there is a correlation between the knowledge and skills' level in the triage implementation in Wates Regional Hospital's Emergency Department (9). Age, years of service, workload and supervision are related to motivation to carry out triage (10). The factors that influence the triage implementation's accuracy in the Dr. Sudirman Hospital's Emergency Department, Kebumen are workload, knowledge, and work motivation where the most important factor is work motivation. It has an odd ratio value of 18.418 (11).

The triage system used at X Hospital is a START system. Every patient who comes will be triaged by a nurse who is on duty, there is no special triage officer because all nurses on duty are authorized to do triage. The patient will enter the triage room and will be triaged according to the patient's emergency. Triage marking is done by looking at the color on the observation sheet of the correct triage used. After triage the patient will be placed according to the triage group. The implementation of triage using color coding has not been done optimally because if many patients suddenly come together almost simultaneously, the patient is immediately placed in the available bed. Triage facilities and infrastructure at X Hospital are in accordance with the procedure.

Based on a preliminary study the number of patients coming to the emergency room per month was an average of 680 patients where 1 service shift was only 4-5 nurses and 1 doctor on duty. The results of interviews with 7 emergency nurses obtained 3 of 7

nurses who have a good understanding of triage, but 4 of 7 nurses still do not take it seriously about the patients classification according to the level of emergency and handling patients' priority. Talkin about the hospital accreditation, one of the ways to improve the quality of its services is by applying primary surveys and secondary surveys for the initial management of patients. High demands on services affect the expected performance of nurses. This is evident from the results of interviews with 7 nurses in which 5 of them stated that their work motivation decreased due to the high workload carried out, 2 nurses said that the challenge became a motivation to work more professionally.

## MATERIALS AND METHODS

### Research Method

This quantitative research uses an analytical methods with cross sectional approach and a descriptive correlational research design. The study took place in the Emergency Department of X Hospital, Tangerang. The time of the study was carried out on 10-17 June 2019. Ethical approval for this study was obtained from the Widya Dharma Husada Ethics Committee (Ref No: KE/131/01/2019).

### Samples

The sample of this study were all 32 nurses in the Emergency Department of X Hospital, Tangerang. This study used a total sampling as the technique. Data collection was carried out using a questionnaire namely the characteristics of respondents including age, gender, education and years of service. The knowledge questionnaire was prepared by the researcher. Motivation questionnaire adopted from the research of Irawati (2017) entitled "Factors Affecting the Accuracy of Triage Implementation in the Emergency Department of RSUD dr. Sudirman Kebumen" (11). The accuracy of triage determination is carried out by observation using an assessment sheet. The accuracy of triage determination consists of 6 assessment items.

### Statistical Analysis

The researcher used SPSS VERSION 23 to analyze all the data. Data analysis was done univariately and bivariately using the Chi square ( $\chi^2$ ) test.

## RESULTS

### Respondents Characteristic

Table I show that mostly the 32 in Emergency Department respondents are aged in the middle adult category (26-37 years), they're 16respondents (50.0%), most of the men were 20 respondents (62.5%), most of the D3 Nursing education were 26 respondents (81.2%) and the most years of service were  $\geq 5$  years, namely 20 respondents (62.5%).

According to the Table II, the most of respondents were

**Table I: Characteristics of Respondents in the Emergency Departments of X Hospital, Tangerang**

Characteristics of Respondents	f	%
<b>Age</b>		
Young Adults (18-25 Yearsold)	2	6.2
Middle Adults (26-37 Yearsold)	16	50.0
Late Adults (38-65 Yearsold)	14	43.8
<b>Genders</b>		
Male	20	62.5
Female	12	37.5
<b>Education</b>		
D3 Nursing	26	81.2
S1 Nursing / Nursing	6	18.8
<b>Years of Service</b>		
< 5 years	12	37.5
≥ 5 years	20	62.5
<b>Total</b>	32	100

**Table II: Distribution of Frequency of Respondents' Knowledge, Respondents' Motivation and Frequency of the Accuracy of Triage Implementation in the Emergency Departments of X Hospital, Tangerang**

Nurses' Knowledge	f	%
Poor	10	31.2
Average	6	18.8
Good	16	50.0
<b>Total</b>	<b>32</b>	<b>100</b>
Nurses' Motivation	f	%
Low	14	43.8
High	18	56.2
<b>Total</b>	<b>32</b>	<b>100</b>
Accuracy of Triage Implementation	f	%
Inaccurate	12	37.5
Accurate	20	62.5
<b>Total</b>	<b>32</b>	<b>100</b>

well-informed as many as 16 respondents (50.0%). According to table II, the most respondents have high motivation, namely 18 respondents (56.2%).

### Illustration of the Accuracy of Triage Implementation

The implementation of triage in this study is categorized into two, namely it is not appropriate if the nurse does not do one or more stages in triage and it is appropriate if the nurse carries out all the stages in triage. The way to measure this variable is direct observation. According to table II, most of the 32 respondents conducted an accurate triage implementation, namely 20 respondents (62.5%).

### Relationship between Age and Accuracy of Triage Implementation

Table III show the results of a cross table between ages and the accuracy of triage are known from 16 respondents in

**Table III: Cross Tabulation between Age, Gender and Accuracy of Triage Implementation in the Emergency Departments of X Hospital, Tangerang**

Age	Accuracy of Triage				Total		P Value
	Inaccurate		Accurate		n	%	
	n	%	n	%			
Young Adults	2	6.2	0	0	2	6.2	0.386
Middle Adults	6	18.8	10	31.2	16	50	
Late Adults	4	12.5	10	31.3	14	43.8	
<b>Total</b>	<b>12</b>	<b>37.5</b>	<b>20</b>	<b>62.5</b>	<b>32</b>	<b>100</b>	

  

Gender	Triage Implementation				Total		P Value
	Inaccurate		Accurate		n	%	
	n	%	n	%			
Male	8	25	12	37.5	20	62.5	1.000
Female	4	12.5	8	25	12	37.5	
<b>Total</b>	<b>12</b>	<b>37.5</b>	<b>20</b>	<b>62.5</b>	<b>32</b>	<b>100</b>	

the middle adult category (26-37 years) that are mostly accurate in determining triage, which is 10 respondents (31.2%). Test results of Chi square obtained p value 0.386 ( $\geq 0.05$ ) using alpha 5% (0.05). It concluded that  $H_a$  is rejected and  $H_o$  is accepted, which means the age of the respondents and the implementation of triage determination has no relationship.

### Relationship between Gender and Accuracy of Triage Implementation

The results of the cross table between the sexes with the accuracy of the triage are known from 20 male respondents, mostly accurate in determining the triage that is 12 respondents (37.5%). Test results of Chi square obtained p value of 1.000 ( $\geq 0.05$ ) using alpha 5% (0.05). It concluded that  $H_a$  is rejected and  $H_o$  is accepted. It means the gender of respondent with the implementation of triage determination has no relationship.

### Relationship between Education and Accuracy of Triage Implementation

The results of the cross table between education and triage accuracy are known from 26 respondents with D3 Nursing education. Most of them are accurate in determining the triage, namely 18 respondents (56.2%). Test results of Chi square obtained p value of 0.242 ( $\geq 0.05$ ) using alpha 5% (0.05). It concluded that  $H_a$  is rejected and  $H_o$  is accepted. It means the education of respondents with the implementation of triage determination has no relationship (Table IV).

**Table IV: Cross Tabulation between Education and Accuracy Triage Implementation in the Emergency Department of X Hospital, Tangerang**

Education	Triage Implementation				Total		P Value
	Inaccurate		Accurate		n	%	
	n	%	n	%			
D3 Nursing	8	25	18	56,2	26	81,2	0,242
S1 Nursing/ Ners	4	12,5	2	6,3	6	18,8	
<b>Total</b>	<b>12</b>	<b>37,5</b>	<b>20</b>	<b>62,5</b>	<b>32</b>	<b>100</b>	

**Relationship between Years of Service and Accuracy of Triage Implementation**

The results of the cross table between years of service and triage accuracy are known from 20 respondents with > 5 years of service, most of them are accurate in determining triage, namely 18 respondents (56.3%) (Table V). Test results of Chi square obtained p value of 0.00016 (< 0.05) using alpha 5% (0.05). It concluded that Ha is accepted. It means years of service influence the implementation of triage determination.

**Table V: Cross Tabulation between Years of service and Accuracy Triage Implementation in the Emergency Department of X Hospital, Tangerang**

Years of Service	Accuracy of Triage				Total		P Value
	Inaccurate		Accurate		n	%	
	n	%	n	%			
< 5 Years	10	31.2	2	6.2	12	37.5	0.00016
≥ 5 Years	2	6.2	18	56.3	20	62.5	
Total	12	37.5	20	62.5	32	100	

**Relationship between Knowledge and Accuracy of Triage Implementation**

The results of the cross table between knowledge and triage accuracy are known from 32 well-informed respondents. Most of them are good in determining triage, namely 16 respondents (50%). Test results of Chi square obtained p value of 0.045 (≤ 0.05) using alpha 5% (0.05) (Table VI). It concluded that Ha is accepted and Ho is rejected. It means respondents' knowledge influence the implementation of triage determination.

**Relationship between Motivation and Accuracy of Triage Implementation**

The results of the cross table between motivation and triage accuracy are known from 18 respondents (56,2%) with high motivation, most of them are correct in determining triage, which is 16 respondents (50%). Test results of Chi square obtained p value of 0.0017 (≤ 0.05) using alpha 5% (0.05) (Table VI). It concluded

**Table VI: Cross Tabulation between Knowledge, Motivation and Accuracy Triage Implementation in the Emergency Department of X Hospital, Tangerang**

Knowledge	Accuracy of Triage				Total		P Value
	Inaccurate		Accurate		n	%	
	n	%	n	%			
Poor	8	25	2	6.2	10	31.2	0.045
Fair	0	0	6	18.8	6	18.8	
Good	4	12.5	12	37.5	16	50	
Total	12	37.5	20	62.5	32	100	

  

Motivation	Accuracy of Triage				Total		P Value
	Inaccurate		Accurate		n	%	
	n	%	n	%			
Low	10	31.3	4	12.5	14	43.8	0.0017
High	2	6.2	16	50	18	56.2	
Total	12	37.5	20	62.5	32	100	

that Ha is accepted and Ho is rejected, which means respondents' motivation influence the implementation of triage determination with POR = 20.00 (95% CI: 1.416-282.449) which means that respondents who have high motivation are 20 times more likely to be accurate in implementing triage determination than those who have low motivation.

**DISCUSSION**

**Characteristics of Respondents**

*Charasteristic of Age*

Age affects the power of mind and mindset so that the knowledge someone gets is getting better. One's wisdom and ability to make decisions, think rationally, control emotions and tolerate the views of others will increase time by time as one gets older, thus affecting the performance improvement.

*Charasteristic of Gender*

Gender is generally used to distinguish a person's sex, i.e. male or female. Psychological research has found that men are more likely to have high expectations for success and are more aggressive, so they perform better than women. The most logical explanation is that women have historically been responsible for the household and family (12, 13).

The type of work to do strongly influences the work results. In special jobs, which are heavy, the gender influences the success of work, but in jobs that are generally better done by men but the provision of sufficient skills to women also get satisfactory work results. The characters of women have positive side in affecting personal performance. They are obedience and compliance in work (14, 15).

There are more female nurses in the realm of nursing than men. Female nurses graduated from tertiary institutions are more numerous than male nurses. The realm of nursing reflects a woman's figure in providing nursing care, affection and assistance to her patients (16).

*Charasteristics of Education*

Education is a method of organizational development in which staff get knowledge and skills for positive goals. Those important for their performance in terms of cognitive, psychomotor and attitude. Education is an indicator that shows the ability of individuals in completing work (17). Every individual must be motivated to learn, even the motivation to learn mostly starts from one self (18).

When it's seen from the qualifications of nurses' education which is in accordance with the provisions according to the Nursing Act that the minimum education in nursing is diploma III so that X Hospital, Tangerang has a number of health workers, especially nursing staff with levels of education from diploma level III to undergraduate nursing

and to develop again from the cognitive, affective and psychomotor aspects of nurses, an effort has been made to provide opportunities for senior nurses with employee status to continue education to the level first degree nursing continued nurses profession. Someone can do triage at a minimum of a DIII education. DIII Nursing or Vocational Education produces generalist nursing as a vocational nurse who is expected to have knowledge and be able to utilize nursing technology in conducting professional nursing care (19).

### **Characteristic of Years of service**

The years of service is the period of a nurse who works in a hospital from the beginning of work to the time a nurse stops working. The more years of service of one's work at work, the more knowledge and experience they have, this can help in improving the performance of a nurse. The years of service of a person can be known from the beginning of the nurse working until the time of stopping or the present while still working in the hospital (14,15).

What a person experiences will help shape and influence the appreciation of social stimulus. The response will be one of the basic forms of attitude. To be able to have a response and appreciation, a person must have experience related to psychological objects (20). The more years of service a person is, the more skilled and experience dealing with problems in his work. The years of service of a nurse at the installation is from the official nurse as an employee of the hospital (21).

### **Characteristic of Knowledge**

Knowledge is the result of human sensing, or the result of someone understanding about an object through their senses (ears, eyes, nose, etc.). By it self at the time of sensing an object, the intensity of attention and perception of the object strongly influences the knowledge result (22).

The learning process is affected by education, the higher one's educational background is, the easier it is for the person to understand information. The more information that comes in, the more knowledge gained. Education is very closely related to knowledge. It is expected that someone with higher education is more knowledgeable. A person with less education does not mean that he has less knowledge either (23).

### **Characteristic of Nurses' Motivation**

Motivation consists of intrinsic factors and extrinsic factors, namely: intrinsic factors occur when work is carried out, for example positive support provided by superiors immediately after tasks are successfully carried out and extrinsic factors occur outside of work, for example additional benefits and days off (17).

Motivation is one of the factors that determines the results of work. A person is motivated to work hard to realize and complete his task. Motivation certainly

affects performance even though it is not the only factor that shapes performance. One factor motivating workers to achieve high-level performance is giving rewards. The purpose of giving reward is to attract competent people to join the organization and keep workers to work (24). In accordance with the results of Herzberg's study in Siagian (2014) if workers are satisfied with work, satisfaction is based on intrinsic factors and vice versa (21)

### **Charasteristic of Triage accuracy**

Every patient who comes to the emergency room will be triaged. Triage is an action in which patients are classified according to their priority. Patients who experience emergency conditions (red card), emergency and non-emergency conditions (yellow card), non-emergency and non-emergency conditions (green card) and death arrival (black card) (6). So that the order or handling of patients does not necessarily according to the order of patients' arrival to the emergency room. Patients with low priority will wait more time for assessment and treatment. Handling of patients performed without sorting patients' triage or level of emergency and based on the order of arrival of patients will result in delays in handling critical patients so potentially deadly for critical patients (7).

Determination of Triage is an action taken by nurses to classify patients who come to get services to the Emergency Department both in daily circumstances and in a state of disaster. In addition, triage also includes how to determine the diagnosis and choose patients based on the therapy needed and available resources (25). Determination of priority treatment will be influenced by the level of emergency patients, the number of patients coming, the ability of emergency nurses, the availability of supporting equipment and space (8). The ability of nurses in triage is very influential on the success rate of help when patients experience emergencies. The ability of nurses to do triage is very influential on the level of success when the patient has an emergency. The accuracy of nurses in implementing triage is also influenced by various factors including nurses' knowledge about triage, work motivation and workload (11).

Triage guidelines become important for nurses and medical personnel in conducting triage. The triage system development model is developed in various countries in the world created and adapted to the conditions and needs of these countries and used as guidelines in its implementation. The triage system was developed worldwide to meet needs based on regional characteristics, perspectives of health care providers and users (26).

The inaccuracy of triage assessment has the risk of decreasing patient anxiety and the quality of health services. Assessments that are categorized into under

triage have a direct impact on patient waiting time and decreased patient anxiety. This happens due to the decrease in the triage scale assessment rather than the one that would have extended the treatment time that should have been received by the patient in accordance with his clinical condition. Indicator of patient waiting time in critical installations (27).

#### **Association between Age and Accuracy in Implementing Triage**

In line with the research which states that age is not related to the performance of implementing nurses at the Roemani Islamic Hospital PKU Muhammadiyah Semarang (P value = 0.05) (28). According to Ismael's research (2009) age is closely related to the level of maturity or maturity of nurses. Maturity is the level of technical ability in carrying out tasks and psychological maturity, the older a person is, the more mature a person is, as well as his psychological will show the maturity of the soul. Increasing one's age, will also increase one's wisdom and ability to make decisions and think rationally (29).

The nurse's age outlines an indicator of maturity in every decision making that refers to each of his experiences. The characteristics of a nurse based on age greatly affect the performance in nursing practice, where the older nurses will be more responsible and experienced in accepting a job. This will have an impact on the performance of nurses in nursing practice in patients getting better (14,15).

#### **Relationship between Gender and Accuracy in Implementing Triage**

In line with Nurhanifah's research (2015) which states that gender is not related to nurses' motivation in carrying out triage in the emergency department of Ulin Hospital Banjarmasin (P value = 0.889). Shye (1991, in Nurhanifah, 2015) suggested that there was no difference in work productivity between male and female nurses. But even so in determining the workplace for male and female nurses need to be considered in accordance with the severity of the work to be done (10).

Since the period of nursing education, both women and men have the same learning experience in achieving the potential and goals of the nursing education curriculum. There is no significant relationship between the genders of male and female because they have the same accountability at work (28).

The researcher believes that as a nurse, men and women have the same role when in the work environment, so it cannot be distinguished which motivates better. It is not gender that determines a person's good or lack of performance but how he or she is responsible with the tasks assigned by the team leader and how they apply to patients.

#### **Relationship of Education with Triage Implementation Accuracy**

This result is in line with Nurhanifah's research (2015) which states that education is not related to nurses' motivation in carrying out triage in the emergency department of Ulin Hospital Banjarmasin (P value = 0.106) (10). Nurses as an important part of the hospital are required to provide good behavior in order to help patients achieve recovery. Nursing high education will provide optimal health services. For a nurse who carries out her nursing profession must have knowledge and education in certain fields, for that it needs appropriate education in order to run well and professionally (30).

Nursing characteristics as a profession, among others, have knowledge that underlies skills and services as well as education that meets standards. Professional nursing services must be based on knowledge. Nurses with sufficiently good education will carry out effective and efficient nursing practices which in turn will produce high-quality health services. An adequate level of education will contribute to nursing practice. The education level of a nurse will influence the rationale behind setting nursing standards (14,15). With higher education, ones knowledge is also getting better or higher one's education, the easier they receive information and the more knowledge they have (31).

#### **Relationship of Years of Service with Appropriate Triage Implementation**

This research is not in accordance with the results of the research Khairina et al (2018) which indicates that the years of service is not related to the nurse's accuracy to make decision in the scale filling of triage in the Padang City Hospital's Emergency Department (P value = 0.112) (32).

But this research is in line with theory that states years of service is the whole lesson learned by someone from the events experienced during the work trip and the longer years of service of a person the more skilled someone is at work. Years of service can add knowledge and experience to be more skilled in work. The longer a person works in a place, the more experience and knowledge he or she can get in the place where he works. This knowledge will increase and be felt when someone works in a section that is appropriate to their educational background. Likewise, if a nurse is accustomed to working in the emergency department, time after time, his or her professional ability in determining triage increases so that the accuracy of the determination of triage will be avoided or minimized (33).

#### **Relationship between Knowledge and Triage Implementation Accuracy**

This is in accordance with research by Evie, et al (2016) in which the knowledge factor is significantly related to the triage implementation (p value = 0.021) (34). Irawati

research (2017) which proves that knowledge influences the accuracy of the implementation of triage ( $p = 0.033$ ) (11). Likewise, the study of Santosa, et al (2016) which shows that knowledge and actions of nurses based on triage labelling have a very strong relationship in the emergency department at Gresik Hospital (35). The research of Khairina, et al (2018) explains that the level of knowledge is the essential factor related to nurse's accuracy in making decision on the scale filling of triage which has a  $p$  value of 0.012 and an odd ratio value of 17.885 (32).

Skills and knowledge of nurses in handling their patients is one of the essential factors to handle emergency cases (36). Skills, knowledge, and attitudes of emergency department nurses are needed in clinical decision making so there will be no error in conducting the assessment during triage, so it is expected the handling of patients can be more directed and optimal. Knowledge about triage that is owned by emergency nurses will greatly help nurses in handling emergency cases and can also prevent disability and death of patients (37).

The study results indicate that the implementation of triage will be more skilled when a nurse has the better level of knowledge. Knowledge is an important aspect that must be owned by an officer because it can affect certain skills. Someone with high knowledge will be easy to carry out all tasks efficiently and effectively, so that performance is getting better. Someone with a high level of knowledge can obey every action he does (38). This is also consistent with the concept of theory that one's level of knowledge is also influenced by the level of experience in working (22).

#### **Relationship of Motivation with the Accuracy of Triage Implementation**

In line with the research of Irawati (2017) which proves that work motivation influences the accuracy of the implementation of triage are ( $p = 0.011$ ) and it is the most dominant ( $OR = 18.4$ ) (11). His management theory states that nurses need high motivation to support good performance. Motivation influences work quality and nurse performance (39, 40).

Motivation creates nurses' awareness of their role, nurses' responsibilities and the willingness of nurses to advance so as to encourage improvement in the quality of work and nurses' work performance to conduct nursing care, including the performance's level of a nurse (41, 42). Nurses' work motivation is essential for increasing the role of nurses, strengthening professional image, strengthening health systems and improving the quality of nursing care for individual patients and the health of a community (43). Accurate triage classification is the key to efficient action in the department of emergency (44). The triage determination accuracy is a form of performance of nurses in the emergency room (45, 46).

## **CONCLUSION**

Identified from 32 respondents who were mostly aged in the middle adult category (26-37 years) there were 16 respondents (50.0%), most of them were male as many as 20 respondents (62.5%), almost all of them were diploma III of nursing education namely 26 respondents (81.2%) and almost all of them were with the most years of service, that was 5 years, namely 20 respondents (62.5%). Most of them are good in determining triage, namely 16 respondents (50%). Most of the 18 respondents (56.2%) identified as having high motivation, which were 16 respondents (50%) have accurate in triage. Most of the 16 respondents identified with the proper triage implementation were 20 respondents (62.5%). There is no relationship between characteristics (age, gender, education) with the accuracy of the triage implementation in which the age has  $p = 0.386$ , gender with  $p = 1.000$ , education with  $p = 0.242$ . The respondents' knowledge and the accuracy of triage implementation has relationship ( $p = 0.045$ ). Respondents' motivation influences the accuracy of triage implementation ( $p = 0.0017$ ). Respondents' knowledge also influences the accuracy of triage implementation ( $p = 0.045$ ). The accuracy of triage implementation is also influenced by the year of service ( $p = 0.00016$ )

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## **REFERENCES**

1. Kartikawati. Buku Jaringan Dasar Dasar Keperawatan Gawat Darurat. Jakarta: Salemba Empat; 2011.
2. Basoeki AP. Penanggulangan penderita gawat darurat anestesiologi & reanimasi. Surabaya: Fakultas Kedokteran Universitas Airlangga; 2008.
3. Ningsih, Kartikawati D. Over crowding patient and improving emergency patient flow in emergency department: a literature review. Malang: Jurusan Keperawatan Fakultas Kedokteran Universitas Brawijaya Malang; 2015.
4. Health Ministry Of Indonesia. Instalation Emergency Standard in Hospital. Jakarta: Health Ministry In Indonesia; 2009
5. Health Ministry Of Indonesia. Data Rumah Sakit Online; 2013.
6. Sudrajat, Haeriyanto S, Iriana P. Hubungan Pengetahuan dan Pengalaman Perawat dengan Ketrampilan Triase Pasien di IGD RSCM; 2014.
7. Aloyce R, Leshabari S, Brysiewicz. Assessment of knowledge and skills of triage amongs nurses working in the emergency centers in dares salam Tanzania. Journal African Medicine. 2014; 4 (1):14-18.

8. Mardiyono. Waiting Time Pasien di Ruang Instalasi Gawat Darurat; 2018.
9. Martanti R, Nofiyanto M, Prasojo JA. Hubungan Tingkat Pengetahuan dengan Keterampilan Petugas dalam Pelaksanaan Triage di IGD RSUD Wates [Thesis]. Yogyakarta: STIKes Jenderal Ahmad Yani; 2015.
10. Nurhanifah D. Hubungan Karakteristik, Beban Kerja dan Supervisi dengan Motivasi Perawat dalam Melaksanakan Triage di IGD RSUD Ulin Banjarmasin [Thesis]. Banjarmasin: STIKES Muhammadiyah Banjarmasin; 2015.
11. Irawati W. Faktor-faktor yang Mempengaruhi Ketepatan Pelaksanaan Triage di Instalasi Gawat Darurat RSUD dr. Soedirman Kebumen [Thesis]. Gombong : Sekolah Tinggi Ilmu Kesehatan Muhammadiyah Gombong; 2017.
12. Robbins, Stephen P, Judge, Timothy. Organizational behavior, Fourteenth Edition. New Jersey: Pearson Education; 2011
13. ElvaridaM. Hubungan Karakteristik Perawat terhadap Asuhan Keperawatan Lanjut Usia di Sub Instalasi Rawat Inap A RSPAD Gatot Soebroto DITKESAD Jakarta [Skripsi]. Jakarta : Program Studi Ilmu Keperawatan Fakultas Ilmu-ilmu Kesehatan Universitas Esa Unggul Jakarta; 2010.
14. Smet B. Psikologi Kesehatan (terjemahan oleh : Anshori). Jakarta : Grasindo; 2008.
15. Nurniningsih DR. Hubungan antara Karakteristik Perawat dengan Kinerja Perawat di Instalasi Rawat Jalan RSUP DR. Kariadi Semarang. Semarang: Program Studi Ilmu Keperawatan Fakultas Ilmu Keperawatandan Kesehatan Universitas Muhammadiyah Semarang; 2012.
16. Andri W. Teori Pembelajaran Bahasa (Suatu Catatan Singkat). Yogyakarta: Garudawacha; 2015.
17. Hasibuan MSP. Manajemen Sumber Daya Manusia, Edisi Revisi. Jakarta: Bumi Karya; 2011.
18. Mangkunegara AP. Evaluasi Kinerja SDM. Bandung: Rafika Aditama; 2011.
19. Setiari V, Dewi WN, Karim D. Identifikasi Pengetahuan Perawat Gawat Darurat Tentang Triage. Fakultas Keperawatan Universitas Riau JOM FKp. 2018; 5 (2):730-736.
20. Azwar S. Penyusunan Skala Psikologi Edisi 2. Yogyakarta: Pustaka Belajar; 2015.
21. Siagian SP. Manajemen Sumber Daya Manusia. Jakarta: Bumi Aksara; 2014.
22. Notoatmodjo S. Promosi Kesehatan Teori dan Aplikasinya, Edisi Revisi. Jakarta: Rineka Cipta; 2012.
23. Budiman. Kapita Selekta Kuesioner Pengetahuan dan Sikap dalam Penelitian Kesehatan. Jakarta: Salemba Medika; 2013.
24. Wibowo. Manajemen Kinerja. Jakarta: Rajawali Pers; 2014.
25. Nonutu PT, Mulyadi, Malara R. Hubungan Jumlah Kunjungan dengan Ketepatan Pelaksanaan Triase di Instalasi Gawat Darurat RSUP Prof. Dr. R. D. Kandou Manado. Jurnal Keperawatan. 2015; 3 (2): 1-6.
26. Dippenaar E, Bruijns S. Triage is easy, said no triage nurse ever. International Emergency Nursing. 2016; (29) 1–2. <http://doi.org/10.1016/j.ienj.2016.09.005>.
27. Ekins, Morphet. The accuracy and consistency of rural, remote and outpost triage nurse decision making in one Western Australia Country Health Service Region. Australian Emergency Nursing Journal. 2015; 18 (4): 227-223.
28. Puspitasari N W, Sulisno M, Dwiantoro L, Kristina TN, Hartiti T. Penerapan Kepemimpinan Transformasional dalam Menurunkan Burnout Perawat Pelaksana. Jurnal Smart Keperawatan STIKes Karya Husada Semarang. 2019; 6 (2): 98-105.
29. Ismael. Hubungan Karakteristik Perawat Terhadap Penatalaksanaan Klien Prilaku Bunuh Diri di RSJ. Prof. Dr. Hb. Sa'anin Padang. Sumatera Barat : Program Studi DIII Keperawatan Stikes Perintis Bukittinggi; 2009.
30. Susanti, EN. Hubungan Karakteristik Perawat dengan Motivasi Perawat dalam Pemenuhan Kebutuhan Kebersihan Diri Pasien di Ruang Rawat Inap RSUD Koesnadi Bondowoso [Skripsi]. Jember ; Program Studi Ilmu Keperawatan Universitas Jember; 2013.
31. Said H, Hasan. Pengembangan Pendidikan Budaya dan Karakter Bangsa. Jakarta: Kementrian Pendidikan Nasional Badan Penelitian dan Pengembangan Pusat Kurikulum; 2010.
32. Khairin I, Malini H, Huriani E. Faktor-faktor yang berhubungan dengan pengambilan keputusan perawat dalam ketepatan triase di Kota Padang. Indonesian Journal For Health Science. 2018; 2 (1): 1-6.
33. Febrina W, Sholehah. Experience Of Nurse Associate To Implement Triage In Emergency Room Installation [thesis]. Sumatera Barat: Program Studi Keperawatan Stikes Bukittinggi; 2017.
34. Evie S, Wihastuti TA, Suharsono T. Analisis faktor yang berhubungan dengan Pelaksanaan Trige Perawat Pelaksana di ruang IGD Rumah Sakit Tipe C. Jurnal Ilmiah Kesehatan Keperawatan. 2016; 12(3): 148- 151.
35. Santosa W, Bakar A, Wahyuni ED. Hubungan pengetahuan perawat tentang pemberian label triase dengan tindakan perawat berdasarkan label triase di IGD Rumah Sakit Petrokimia [Thesis]. Surabaya: Program S1 Keperawatan; 2016.
36. Nurhasim S. Pengetahuan Perawat Tentang Response Time Dalam Penanganan Gawat Darurat Di Ruang Triage RSUD Karanganyar. Surakarta: STIKes Kusuma Husada; 2014.
37. Gurning Y, Karim D, Misrawati. Hubungan Tingkat Pengetahuan Dan Sikap Petugas Kesehatan IGD Terhadap Tindakan Triage Berdasarkan Prioritas. Jurnal online Mahasiswa. 2014; 1(1): 1–9.



38. Zuhriana. Faktor Yang Berhubungan Dengan Kinerja Perawat Di Unit Rawat Inap RSUD Bula Kabupaten Seram Bagian Timur. *Jurnal FKM Univeritas Hasanuddin Makassar. Window of Health Jurnal Kesehatan*. 2018; 1(2): 125-132.
39. Marquis BL , Huston CJ. *Kepemimpinan dan manajemen keperawatan*. Jakarta: EGC; 2013.
40. Aryandini E. Hubungan Motivasi Kerja dengan Tingkat Kinerja Perawat di Unit Kegawatdaruratan Rumah Sakit PKU Muhammadiyah Yogyakarta [Thesis]. Yogyakarta: Program Studi S1 Keperawatan STIKes Aisyah; 2015
41. Hartiti T, Ernawati. Nursing Lecturers' Transformasional Leadership In Classroom Management At Nursing And Health Faculty Of Muhammadiyah University Of Semarang. *South East Asian Nursing Research*. 2019; 1(2): 83-87. <https://doi.org/10.26714/seanr>.
42. Gustia M, Manurung M. Hubungan Ketepatan Penilaian Triase dengan Tingkat Keberhasilan Penanganan Pasien Cidera Kepala di IGD RSUD HKBP Balige Kabupaten Toba Samosir. *Jurnal Ilmiah Penelitian Kesehatan*. 2018; 3 (2): 98-114
43. Musliha. *Keperawatan Gawat Darurat*. Yogyakarta: Nusa Media; 2010
44. Budiman, & Rianto, A. *Kapita selekta kuesioner pengetahuan dan sikap dalam penelitian kesehatan*. Jakarta: Salemba Medika; 2014.
45. Kundiman V, Kumaat L, Kiling M. Hubungan Kondisi Overcrowded Dengan Ketepatan Pelaksanaan Triase Di Instalasi Gawat Darurat RSUD GMIM Pancaran Kasih Manado. *PSIK FK Universitas Sam Ratulangi, e-journal Keperawatan (e-Kp)*. 2019; 7(1):1-7
46. Hosnaniah J. Pelaksanaan triage di unit gawat darurat. *JOM FKp*. 2014; 5 (2): 1-6