

Supplement

Relationship between Knowledge and Preparedness Levels of ER Staff on Pre-Triage System Implementation

Hubungan Tingkat Pengetahuan dan Kesiapan Staf IGD dalam Implementasi Sistem Pre-Triage

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ABSTRACT

The Emergency Department (ED), as the main entrance of health service access in hospitals, faces the highest infection risk and high service load due to the increasing number of patients during the Covid-19 pandemic. Implementing a pre-triage system offers a solution to deal with a surge in the number of patients who demand staff preparedness. This study aimed to determine the knowledge level on the pre-triage system and its relationship with the preparedness of emergency room staff in implementing the pre-triage system. The study was conducted with a cross-sectional approach in a private type C hospital in Malang District on all 30 ER staff as respondents. The research instrument used were questionnaires. Data analysis was done using descriptive analysis and the Fisher exact test. The results show that although 76.7% of respondents have insufficient knowledge, 86.7% of respondents are ready to implement the pre-triage system. The test results prove that there is no relationship between the knowledge and the preparedness levels of the emergency room staff in implementing the pre-triage system.

Keywords: Implementation, knowledge, preparedness, pre-triage

ABSTRAK

Instalasi Gawat Darurat (IGD) sebagai pintu masuk utama akses pelayanan kesehatan di rumah sakit, menghadapi risiko paling tinggi terkait risiko infeksi dan beban pelayanan akibat lonjakan pasien dimasa pandemi Covid-19. Penerapan sistem pre-triage dapat menjadi solusi menghadapi lonjakan pasien yang menuntut kesiapan petugas. Tujuan penelitian adalah mengetahui tingkat pengetahuan tentang sistem pre-triage dan hubungannya dengan kesiapan staf IGD dalam penerapan sistem pre-triage. Penelitian ini merupakan penelitian kuantitatif dilakukan dengan pendekatan *cross sectional*. Penelitian dilakukan di salah satu rumah sakit swasta tipe C di wilayah Kabupaten Malang, pada bulan November 2020 dengan responden seluruh staf IGD rumah sakit sebanyak 30 orang. Instrumen penelitian berupa kuesioner. Analisa data dilakukan dengan analisa deskriptif dan analisa *Chi-Square* uji *Fisher exact test*. Hasil penelitian didapatkan menunjukkan meskipun 76,7% responden memiliki pengetahuan kurang namun, 86,7% responden siap mengimplementasikan sistem pre-triage. Hasil uji juga membuktikan, dan tidak didapatkan hubungan antara tingkat pengetahuan dengan kesiapan staf IGD dalam mengimplementasikan sistem pre-triage.

Kata Kunci: Implementasi, kesiapan, pengetahuan, pre-triage

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INTRODUCTION

During the Covid-19 pandemic, hospitals play a critical role in handling Covid-19 patients and, at the same time, must protect patients and health workers from the risk of Covid-19 transmission (1). The unpredicted nature of a pandemic condition has made hospitals, especially the Emergency Department (ED), prepare themselves for the possibility of the increasing number of patients. It is very likely to happen considering the data on the Covid-19 cases at the national level and at East Java province that continue to increase; even, the mortality ratio due to Covid-19 in East Java is the highest (2). In dealing with the surge of patients, especially in disaster situations, medical facilities must improve their capacities, aiming to reduce patient mortality and morbidity. The hospital capability to rapidly expand its service capacity in response to the increasing service demand due to one or more incidents is called surge capacity.

One of the hospital responses during a disaster is to prioritize services. ED is a service unit that is obligatory or cannot be replaced (3). As the main entry point for patients in the hospital, ED needs to have a careful plan to deal with the surge of patients during a pandemic. It is done by prioritizing the goals of early detection related to Covid-19 infection and the indication of placing patients in isolation rooms (4). The researchers conducted a preliminary study at one of type C private hospitals in Malang Regency. The results indicated the factors that caused overcapacity in the triage room, namely the lack of emergency personnel which affected the waiting time for services and the high length of stay (LOS) of patients in the emergency room, the accuracy of ESI (Emergency Severity Index) assessment, and the absence of a pre-triage system which made patient identification activities related to Covid-19 and emergency assessments carried out in one place. The concept of pre-triage in disaster medicine can be applied amid the Covid-19 pandemic and provides benefits in terms of infection control to protect health workers and sorting the patients for priority services when a surge of patients occurs (5). Implementing the pre-triage system requires preparation and an adaptation process so that the staff can carry it out properly and the objectives of the pre-triage system can be optimally achieved. This study was conducted to determine the relationship between ED staff knowledge about the pre-triage and ED staff's preparedness to implement the pre-triage system.

METHODS

This study is quantitative with a cross-sectional approach conducted at a type C private hospital in Malang Regency on 30 ED staff as respondents. Data were collected using questionnaires to measure the knowledge level about the pre-triage system and the preparedness to implement the pre-triage system online using the G-form.

The knowledge level was measured by 15 questions about procedures, objectives, implementing officers, COVID-19 case definitions, ESI assessment, indications of the pre-triage system activation, and the use of personal protective equipment (PPE). The preparedness for implementing the pre-triage system was measured by 15 closed questions about the response that the emergency room staff must carry out. The measurement results of the two variables were converted into percentages and

grouped into two categories with a cut off of 76, prepared and not prepared. The relationship between knowledge and preparedness levels was tested using the Chi-Square.

RESULT

From Table 1, there is a balanced proportion of gender. The highest education level is General Practitioner (46.7%). Most paramedical personnel are from D3 Nursing. Most respondents (80%) are aged 25-30 years, and almost half of the respondents have experiences in disaster management. Most emergency room staff (40%) only have one valid certificate, and 36.7% have expired certificates.

Table 1. Characteristic of respondents

Characteristics	Frequency (%)
Gender	
Male	50 %
Female	50 %
Education	
General practitioners	46,7 %
S1 Nursing	10 %
D3 Nursing	20 %
D4 Nursing	3,3 %
D3 Midwifery	20 %
Age	
< 25 years	13,3 %
25 – 30 years	80 %
31 – 35 years	6,7 %
Disaster management experience	
Yes	43,3 %
Never	56,7 %
Validity of competence certificate in ED	
>1 valid certificate	23,3 %
1 valid certificate	40 %
No longer valid	36,7 %

Source: Processed data, 2020

In Table 2, it can be seen that although the majority of respondents (76.7%) have insufficient knowledge about the pre-triage system, the majority (86.7%) are prepared to implement the pre-triage system. Of the 15 questions on knowledge in the questionnaire, most respondents answered incorrectly about the level of PPE used and indications of pre-triage activation.

Table 2. Knowledge and preparedness levels of ED staff

Variables	n (%)
Knowledge Level	
Good	7 (23,3 %)
Insufficient	23 (76,7 %)
Preparedness Level	
Prepared	26 (86,7%)
Not Prepared	4 (13,3 %)

Table 3 shows that 63.33% of respondents who stated ready to implement pre-triage have insufficient knowledge. The results of the Fisher exact test also show no statistically significant relationship between the respondents' knowledge and preparedness levels ($p=0.55$).

Tabel 3. Crosstabulation of knowledge and preparedness of ED staff

		Perceived Preparedness (%)		Total
		Not Prepared	Prepared	
Perceived	Good	0	23.33	23.33
	Insufficient	13.33	63.33	76.67
Total		13.33	86.67	100

DISCUSSION

The results show that the respondents have insufficient knowledge even though they state ready to implement the pre-triage system. There is no relationship between respondents' knowledge and preparedness for pre-triage implementation. Respondents' knowledge insufficiency can be influenced by the absence of respondents' experience in disaster management. Another factor that sufficiently contributes is that most respondents only have one certificate related to competence in the ER. There is a significant relationship between the experience and knowledge of nurses in dealing with cardiac arrest (6). Previous research stated that nurses who had attended emergency training had better knowledge than those who had never participated in training. Training provides specific information about what to do (7).

Almost all respondents are in the prepared category. Preparedness is defined as the point of maturity to accept and practice certain behaviors. The statement can be

influenced by the pre-triage system that has been implemented even though it has not been equipped with standard operating procedures. Nurses with experiences involved in disaster management had higher preparedness scores and had greater self-confidence than nurses with no previous experience (8). Past experience influences future preparedness behavior by stimulating the urge to seek information about subsequent events, so it has a positive effect on the readiness to act (9).

The absence of relationship between preparedness and knowledge could be due to the experience of implementing the system. However, preparedness without proper knowledge can result in inappropriate treatments. Increasing staff knowledge about pre-triage through training and simulations is necessary to optimize the implementation of the pre-triage system. Previous research found that staff skills in providing first aid to traffic victims can be significantly improved through basic life support training using simulation (10). The inaccuracy of respondents' knowledge is mostly on knowledge of PPE levels and indications of pre-triage, so training needs to be focused on both aspects and supported by SOPs, monitoring, and supervision.

This study shows that hospital staff have stated that they are ready to implement a pre-triage system but have not been followed by proper knowledge, especially on PPE and pre-triage indications. On the job training strategies and periodic simulations can be chosen to strengthen the knowledge to support the readiness of the staff to implement the pre-triage system appropriately.

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