

Conference Paper

Factors Analysis Related to the Response Time of Nursing Services Based on the ATS II Category in the Emergency Installation

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The response time for nursing refers to the time required to provide emergency nursing care to patients following the triage assessment. This study seeks to analyze the factors associated with the response time of nursing services based on the ATS II category in the emergency department and the magnitude of the influence of age, knowledge, education, and length of work on response time. The method used in this research was correlational, with a cross sectional method and a questionnaire sheet. The research sample was comprised of 20 nurses. Data analysis was used the Pearson correlation test. The results showed that there was a relationship between age, education, length of work and knowledge with response time, with the value of each variable as follows: age with a p-value of 0.015 and r 0.533; education with a p-value of 0.005 and r 0.601; length of work with a p-value of 0.000 and r 0.739; and knowledge with a p-value of 0.002 and r 0.638. From the results of the analysis, it can be concluded that the strongest determinant factors for response time are length of work and level of knowledge. This study concludes that improving nurse education and training related to handling emergency patients should be prioritised.

Keywords: length of work; knowledge; education, response time; age

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1. Introduction

Emergency Room (IGD) is one part of a hospital that provides initial treatment for patients suffering from illness and injury, which can threaten their survival. In the ER, there are doctors from various specialties along with a number of nurses and doctors on duty. The Emergency Room serves to provide 24-hour emergency and emergency medical services. What determines the success of client rescue with response time.[1] Health workers who work in the emergency room and most often meet clients are nurses, so nurses must be able to immediately take action in responding to the client's

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presence with the nurse's initial action, namely triage.[2] The number of clients visiting the emergency department every year has increased by about 30% in all hospitals in the world.[3]

The data on clients who come to the emergency department in Indonesia is approx 11,650,239 clients or 13.17% of all visits to the hospital. Data on client visits to emergency departments in West Java is the highest in Indonesia with the number of visits, namely 6,458,971 people. This significant increase in the number of visits requires more attention by providing better quality client service. Good quality of service in caring for emergency patients requires early action to stabilize clients who experience disruption due to injury or require resuscitation.[4]

Improving the quality of emergency room services is influenced by qualified human resources (HR), especially having competent emergency nurses, so that emergency services can provide good service to provide nursing actions in preventing the severity or injury of clients.[5] The main gate in determining the quality of service in the hospital is the emergency room which is also called the hospital's critical point unit because the service must be fast and precise to clients.[6] One indicator of the quality of emergency room services is the success of rescuing clients with response time. [1, 7] The most important thing when the nurse is doing triage is doing the response time.[7]

Triag scalee is one method designed to manage client screening for service quality improvement. Several triage scales are used internationally in emergency installation including the Manchester Triage System Scale (MTS), the Canadian Triage Scale and Accuracy (CTAS), the Emergency Severity Index (ESI), and the Australasian Triage (ATS).[8] The number of triage methods that have developed in Indonesia makes many different methods applied in each hospital. The most developed triage method is the Ausrtalian Triage Scale (ATS) which uses a categorization technique with numbers based on the severity and priority level of client problems consisting of ATS I, ATS II, ATS III, ATS IV and ATS V.[4] Therefore, the procedure for this triage method is influenced by several factors, namely knowledge, education, and length of work of nurses in the emergency room installation.

The results of previous research stated that the triage training process affected the skills and knowledge of nurses in handling emergency cases. [9] Triage skills on nurses will be good if their knowledge of triage is also good, so the hospital must provide training and education to strengthen triage knowledge and skills for nurses.[10] The application of the client's response time needs to be adjusted to the client's condition after triage. The most widely used response time indicator is based on the ATS method with the ATS I response time category or life-threatening emergency, namely as soon

as possible, which is under 5 minutes, ATS II is carried out a maximum of 10, ATS III is carried out for a maximum of 30 minutes, then ATS IV is carried out maximally 60 minutes and ATS V or death of arrival requires a response time of 120 minutes.[4]

The results of a preliminary study at the Majalaya regional general hospital, the type of triage based on ATS, which needs to be prioritized, namely ATS 1, but when viewed from the number of visits in emergency department installations between ATS I, showed that 2,960 clients with ATS II, more than 8,003 clients experienced ATS II. Apart from being supported by the visit data, the impact if a client with ATS II is not provided with service according to the response time of 10 minutes will have an effect on disability, even if it is possible to change to ATS I and cause death. As for ATS I, in Majalaya hospital there is a special room for ATS I, that is, in a resuscitation room with appropriate client care and condition monitoring.

2. Methods and Equipment

This study was used a cross sectional design. The purpose of this study was to identify factors associated with the response time of nursing services based on the ATS II category in the emergency department. Data collection was carried out from June to July 2020, and this research was conducted at the Majalaya Hospital Emergency Room.

The population of this study were all nurses who served in the IGD Majalaya Hospital. The sampling technique used total sampling with a sample size of 20 nurses. This research was conducted by direct observation method using data collection sheet instruments. The instrument in this study consisted of demographic data, a questionnaire about the knowledge of ATS II, the response time in handling emergency patients which was carried out using observation sheets. We analyzed the correlation of the dependent and independent variables using bivariate analysis with the Pearson correlation test and a P value ≤ 0.05 was considered statistically significant. Statistical analyzes were performed with SPSS 16.0 (SPSS Inc. Chicago, IL, USA). The study was approved by the Ethics Committee of the Faculty of Health, Bhakti Kencana University and written consent was obtained from all study participants.

3. Results

Based on Table 1, it shows that of the 20 nurses in the emergency room, there are 25-34 years of age who are more dominant as much as 60% with the lowest education is Nursing DIII as much as 65%, while the length of work as an emergency room nurse

TABLE 1: Characteristics of Respondents in Emergency Department Installation (n=20)

Variable	Frequency	%
Age (years)		
25-34 years	12	60.0
35-44 years	8	40.0
Education		
DIII Nursing	13	65.0
Nurse Profession	7	35.0
Knowledge		
Well	15	75.0
Less	5	25.0
Length of work		
<5 years	12	60.0
> 5 years	8	40.0
Response Time		
<10 minutes	11	55.0
> 10 minutes	9	45.0

is still less than 5 years. it works. However, the average nurse has a good knowledge of the principles of triage services using the Australian Triage Scale (ATS) II and the average response time in handling emergency patients is <10 minutes.

TABLE 2: Analysis of Factors Associated with Response Time

Variable	n	OR	p-value
Age → Response time	20	0.533	0.015
Education → Response time		0.601	0.005
Length of work → Response time		0.739	0.000
Knowledge → Response time		0.638	0.002

Based on table 2, from the results of the bivariate analysis using the Pearson correlation test, it was found that there was a relationship between age, education, length of work and knowledge with response time, with the values of each variable as follows: age with a p-value of 0.015 and r 0.533, education with a p-value of 0.005 and r 0.601, length of work with a p-value of 0.000 and r 0.739 and knowledge with a p-value of 0.002 and r of 0.638. From the data analysis, it can be concluded that the most dominant / determinant factors for response time in providing services to clients in the ER are length of work and level of knowledge (Table 2).

4. Discussion

Triag scalee is one method designed to manage client screening for service quality improvement. Several triage scales are used internationally in emergency installation including the Ausrtalian Triage Scale (ATS) II. Response time is an indicator in determining the quality of emergency services.[11] The most important thing when nurses do triage is to do response time in handling emergency clients.[7]

The results of this study found that the nurse's response time was at *Australian Triage Scale (ATS) II*. In general, response time <10 minutes in handling emergency patients. This is in line with previous research which states that the majority are quite appropriate in carrying out the sorting procedure and taking action according to ATS priorities.[12] Response time according to ATS II priority is <10 minutes in the handling of emergency clients due to various factors, namely age, education level, length of work and knowledge of nurses from various trainings.

In this study, the average age of the nurses was 25-34 years old, this age included the very productive age in carrying out treatment actions fast and precise client by category ATS II. so there is a strong correlation between the age of the nurse and the response time for nursing services based on the ATS II category in the emergency department. Found that early adults are more likely to have a lot of experience dealing with emergency cases.[13] In early adulthood, nurses are trained in triage because when a person reaches the peak of their intellectual ability, they have increased critical thinking skills regularly during adulthood.[14]

Regarding the education level of nurses, in this study the average education level was DIII nursing and this result also had a strong correlation with the response time of nurses on the Australian Triage Scale (ATS) II. Although the level of education of nurses is still in the diploma category, they have been trained in performing fast and precise client handling actions based on the ATS II category because on average they have attended Basic Trauma Cardiac Life Support (BTCLS) training. This result is not in line with previous research, which states that there is no relationship between education and response time to emergency patients[15]. Therefore, the assessment of a person's skills, in this case the response time, is influenced by the motivation of nurses to attend non-formal education, namely training so that their skills can be applied in the world of work as health workers.

Factor another that affects is the length of work. According to Gibson's theory, the length of work can be related to the nurse's response time in handling clients. The results of this study indicate that there is a significant relationship between the length of work

and the response time of nurses on the Australian Triage Scale (ATS) II in the emergency department installation. The average length of service for nurses was <5 years in the emergency department. This is different from the results obtained in previous studies, there is no significant relationship between length of work and response time of nurses in handling clients[16]. So that the length of work cannot be used as a benchmark for determining nurse response time without being based on good training and knowledge.

The results of this study obtained the average knowledge of nurses in handling Emergency clients in the category of Australian Triage Scale (ATS) II are dominant well. This is what affects the nurse's response time in the emergency department installation. Good knowledge and based on the characteristics of the officer, such as education level, length of work, and the productive age, namely adulthood, is very influential in carrying out emergency actions correctly and quickly. The results showed that to get good knowledge related to triage, nurses must attend training or continue their education[17, 18]. The more knowledge nurses have, the better performance they have. Routine training and evaluation may be useful to increase nurses' knowledge and skills[19].

5. Conclusion

The conclusion obtained from this study is that there is a relationship age, education level, length of service, and knowledge of nurses to response time of nurses on the Australian Triage Scale (ATS) II in the emergency department installation. Based on the four independent variable, variable length of work and knowledge which has a more dominant influence on events response time of nurses on the Australian Triage Scale (ATS) II in the emergency department installation. More and more the longer the nurse's performance and the better the nurse's knowledge, then will affect performance in handling emergency patients based on the Australian Triage Scale (ATS) II.

Expected for nurses doing training such as triage and emergency training are needed to hone nurses' skills in handling clients in the ER. In addition, it is hoped that the hospital can increase documentation regarding the number of clients in the emergency room based on triage and speed categories because they can be used as room evaluation materials. This research can be developed for further research by focusing on variables of psychological factors, such as attitudes and perceptions, and organizational factors such as leadership.

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