

## The Effectiveness of Poster Media on Increasing Nurses' Knowledge about the Australasian Triage Scale (ATS)

I Gusti Ngurah Putu Jaya Antara<sup>1\*</sup>, Ni Putu Emy Darma Yanti<sup>2</sup>, Ida Ayu Md Vera Susiladewi<sup>3</sup>, Putu Mariany Purnama Sari<sup>4</sup>

<sup>1,3,4</sup>Bali Mandara Regional General Hospital, Bali, Indonesia; [ngurahjayaantara@gmail.com](mailto:ngurahjayaantara@gmail.com) (Corresponding Author)

<sup>2</sup>Undergraduate Study Program in Nursing and Nursing Profession, Faculty of Medicine, Udayana University, Indonesia

### Article Info:

Submitted:  
11-06-2022  
Revised:  
19-09-2022  
Accepted:  
03-10-2022

DOI:

<https://doi.org/10.53713/nhs.v3i1.162>



This work is licensed under CC BY-SA License.

### ABSTRACT

The nurses who work in Emergency Room (ER) are required to be able to provide fast and appropriate treatment according to the priority of the patient's condition. Triage is the process of sorting out patients according to their level of emergency. Australasian Triage Scale (ATS) is one of the triage systems implemented in ER. In practice, sometimes the triage carried out by nurses needs to be revised based on the guidelines, resulting in over-triage or under-triage in patients. The aim of this study is to determine the effectiveness of poster media in increasing nurses' knowledge about ATS in the Emergency Room of Bali Mandara Hospital. This research is quasi-experimental with One Group Pretest-Posttest Design Without Group Control. The number of samples in this study was 26 nurses obtained by total sampling. The instrument in this study used a questionnaire and an ATS poster. Data analysis used Paired Sample T-Test. This research obtained the average score of nurses' knowledge about ATS on the pretest 6,08, and the posttest increased to 7,58. Bivariate analysis obtained a p-value<0.001, which means that poster media has a significant effect on increasing nurses' knowledge about ATS. The hospital should provide regular training for the nurses so they would have a good understanding of triage and be able to perform optimal treatment for the patient in an emergency.

Keywords: Australasian Triage Scale; emergency department; nurses' knowledge

### INTRODUCTION

The emergency room (ER) is a service unit in the hospital that provides initial treatment for patients suffering from illness and injury who need emergency care (Queensland Health, 2012). ER has main objectives include receiving, triaging, stabilizing, and providing acute health services for patients who need resuscitation and patients with a certain level of emergency (Australasian College for Emergency Medicine, 2014). ER nurses must be able to provide fast and appropriate assistance for patient safety, namely by providing a response time less than 5 minutes at ER (Ministry of Health RI, 2014). The principle of handling patients in emergency conditions is to save life and limb, which means that the faster the time to respond to emergency events, the greater the opportunity to save the patient's life (Permenkes RI Number 47 of 2018). The reality is that many patients come to the emergency room with a limited number of nurses, causing not all patients to get fast treatment (Mahyawati & Widaryati, 2015).

Patient visits to ER continue to increase every year. According to Bashkin et al., (2015) patient visits to the ER every year occur around 30% in all ER of hospitals in the world. The trend of ER visits in the world has increased by almost 2 times compared to the increase of population in the USA (Tang et al., 2011). England's National Health Service (NHS) reported that the number of visits in ER increased by 20% between 2007-2008 and 2011-2012. English translation. Data from Ministry of Health Indonesia also shows a significant increase of patient visits in ER. Patient visits to the ER throughout Indonesia reached 4,402,205 patients or around 13.3% of the total visits in the hospital with the number of visits 12% of the ER visits came from referrals (Ministry of Health RI, 2014).

The increasing number of patient visits in ER can cause delayed treatment, therefore it can lead to the risk of death and disability. Proper treatment based on the level of emergency can prevent a greater risk of disability (Limantara et al., 2015). In such conditions, it requires a system to categorize patients according to the level of emergency, namely the triage system. Triage is a procedure that places the victim or patient in priority categories and treatment based on

the level of injury and medical emergency, which is determined by considering the procedures for help using the ABC (Airway-Breathing-Circulation) (Fadli et al., 2017).

Australasian Triage Scale (ATS) is one of the triage systems in the world that is widely used in several countries, including Indonesia. ATS is divided into five emergency levels and determines patients' response time in ER based on clinical responses, not from the order of arrival (Jatmiko et al., 2018). Triage skills in ER nurses focus on rapid assessment procedures, patient categorization, and patient allocation (Fathoni et al., 2013). In addition to being the main skill, triage can be an instrument for regulating, monitoring, and evaluating patients and resources in the ER (Ahsan et al., 2019). Triage inaccuracies can result in poor clinical outcomes, length of time to diagnose and time to obtain treatment, inefficiencies in the use of resources and facilities, and even increase mortality and morbidity (Ogliastri & Zúñiga, 2016).

One of the factors that can affect the accuracy of triage implementation in Indonesia is nurses' knowledge of triage (Suparjo et al., 2021). The implementation of triage requires very high clinical assessment skills and a relevant knowledge base to distinguish non-urgent complaints from life-threatening conditions in a busy and stressful work environment (Varndell et al., 2019). According to Martanti et al. (2015) knowledge is one of the very important factors in the implementation of triage; the better knowledge of nurses, the more skilled they will be in the implementation of triage. Knowledge is a very important part of shaping the behavior and actions of a nurse because experience based on good knowledge will underlie good knowledge as well (Notoatmodjo, 2014). Nurses' lack of knowledge in the implementation of triage, especially within the time limit of waiting for patients, results in a dangerous delay in the timely delivery of emergency care that can increase the risk of death and disability (Aloyce et al., 2014).

Research conducted by Mailita & Rasyid (2022) regarding the knowledge of ER nurses in carrying out triage found that the majority of respondents had sufficient knowledge about triage, about 52.9%. In other research by Satria et al. (2021) regarding the relationship of knowledge with the attitude of the nurse about triage in ER during the pandemic COVID-19, it was found that most nurses had sufficient knowledge about triage (48%) and the majority of nurses were positive (77%). Meanwhile, the research of Martanti et al. (2015) regarding the relationship between the level of knowledge and skills of nurses in carrying out triage in the emergency room shows the level of knowledge of nurses in the good category, around 70% and 17 out of 20 nurses in the emergency room have triage implementation skills in the good category (85%).

Posters can be an educational media of ATS to nurses. Posters are educational media that use large and clear letters and are accompanied by images (Wongsawat, 2015). This can interest readers and facilitate the understanding of the information contained in it. According to Ulya & Iskandar (2017), the poster can increase knowledge compared to providing health education without using poster media. In addition, posters can be pasted in various places that are easy to see so they can be used as reminders (Ulya & Iskandar, 2017).

The results of a preliminary study conducted on ER nurses of a hospital in Bali using questionnaires, it was found that most respondents had a sufficient level of knowledge about the application of ATS as many as 12 people (46.2%) and only four people (15.4%) who were well knowledgeable about ATS. Based on the interview results, it was found that the nurse had received triage training from the hospital, but it was more than five years ago and has yet to be updated again. In addition, some new nurses have never had triage training at all. Based on the above background, the author wants to know about the effectiveness of poster media in increasing nurses' knowledge about the Australasian Triage Scale (ATS). This study aimed to analyze the effectiveness of poster media in increasing nurses' knowledge of ATS.

## METHOD

This research is a type of quantitative research with quasi-experimental one group pretest-posttest design without group control. The population in this study was all ER at a hospital in Bali. The sample involved in this study was 26 nurses selected by the total sampling technique with the inclusion criteria for ER nurses who provide direct services to patients, and the exclusion criteria for ER nurses with a service period of less than one year. The instrument of the research used a valid and reliable knowledge questionnaire about ATS and ATS posters. The research procedure began with giving a pretest to respondents, then providing socialization about ATS to respondents and installing ATS posters at ER for 5 days then, a posttest was carried out on the 5th day. Statistical test to analyze the nurses' level of knowledge about ATS before and after being given the intervention using Paired Sample T-Test with a confidence level of 95% due to normal distribution of data. This research has received ethical information from the Research Ethics Commission of the Faculty of Medicine, Udayana University.

**RESULT**

**Characteristics of Respondents**

Table 1. Frequency Distribution of Characteristics of Research Respondents (n=26)

Characteristic	Frequency (f)	Percentage (%)
<b>Gender</b>		
Man	12	46.2
Woman	14	53.8
<b>Education Level</b>		
Nurse Diploma (D3)	17	65.4
Nurse Profession (Ners)	9	34.6
<b>Triage Training Experience</b>		
Not	6	23.0
Yes	20	77.0

Based on table 1 shows that most of the respondents were women, as many as 14 people (53.8%), D3 of Nursing 17 people (65.4%), and had previous triage training experience of 20 people (77%).

Table 2. Distribution Frequency of Age and Working Experience (n=26)

Variable	Mean	Median	Min-Max
Age (in years)	29.30	28	24-39
Working experience (in years)	4.2	4	1-10

Table 2 shows that most respondents aged an average of 29.30 years with an average working experience of 4.2 years.

**Univariate Analysis**

Table 3. Nurses' Knowledge of ATS before and after intervention (n=26)

Nurse Knowledge	Mean	SD	Min	Max
Pretest	6.08	1.742	2	9
Posttest	7.58	1.748	4	10

Table 3 shows nurses' knowledge before intervention (pretest) averaged 6.08 with a standard deviation (SD) of 1.742, the lowest score of 2, and the highest score of 9. Meanwhile, after the intervention (posttest), the average was 7.58 with a standard deviation (SD) of 1.748, the lowest score of 4 and the highest of 10.

**Bivariate Analysis**

Table 4. The Influence of Poster Media on Increasing Nurses' Knowledge of ATS (n=26)

Nurses Knowledge	Mean	p-value
Pretest	6.08	0.001
Posttest	7.58	

Table 4 shows an increase in the average score of nurses' knowledge of ATS from 6.08 to 7.58 after the intervention. The results of the paired sample t-test were obtained p-value=0.001 (p-value<0.05) which means that there is a significant influence of the nurses' knowledge before and after the intervention.

## DISCUSSION

### **Nurses' Knowledge about ATS Before dan After Education with Media Posters**

Based on the results of the study, it was found that the average increase in nurses' knowledge about ATS before the intervention (pretest) was 6.08 to 7.58 after the intervention (posttest). This result is in accordance with the research of Mailita & Rasyid (2022) the majority of respondents have sufficient knowledge about triage as many as 9 people (52.9%) This shows that the majority of respondents are quite good in their knowledge related to triage and they are able to carry out emergency actions well, especially when determining and making decisions precisely the sorting of patients who come to the emergency room whether including emergency, urgent or non-urgent, so that patient care can be carried out according to the triage given by the nurse for the safety and recovery of the patient. The results of the research conducted by Satria et al. (2021) it was found that most nurses had sufficient knowledge of triage (48%) and most nurses were positive (77%). The better a person's level of knowledge, the better the person's skills will be (Notoatmodjo, 2014).

Knowledge is an important aspect that an officer must have because it can affect certain skills (Notoatmodjo, 2014). The Emergency Nursing Association (2014) states that the skills, knowledge, and educational background that nurses have will affect the application of triage. Knowledge in conducting triage affects the right decision making whether the patient needs immediate help or not, while still paying attention to the possible complications that arise after triage (Martanti et al., 2015). Triage knowledge is needed by nurses to determine the priority of handling and making the right decisions for patients (Khairina et al., 2020). Triage is a form of the clinical decision-making process, which consists of an assessment process, and gives priority to patients based on clinical conditions (Dadashzadeh et al., 2013). Triage combines evidence-based clinical expertise (Garbez et al., 2011). In addition, triage requires clinical skills according to the emergency nursing approach in its implementation (Smith, 2013). Triage ATS ensures patients get interventions that match their critical time (Varndell et al., 2019). Nurses must be able to prioritize patient care on the basis of clinical decision-making where knowledge is important to nurses in initial assessment, and nurses must be able to prioritize patient care on the basis of making appropriate decisions (Zahroh et al., 2020). To support this, special knowledge, attitudes, and skills are needed in terms of separating the type and severity of patients in triage, so that patient management can be more optimal and directed (Mailita & Rasyid, 2022).

Researchers argue that the knowledge and skills of officers are needed, especially in making clinical decisions in the emergency room. With high knowledge, a person will be able to carry out all tasks effectively and efficiently, so that performance is getting better. A person with a high level of knowledge can comply with every action he performs. So, it can be said that by having good triage knowledge, the better the application of ATS triage in the emergency room.

### **Influence of Poster Media on Increase Nurses Knowledge about ATS**

Based on the results of the study, a significant influence of nurses' knowledge before and after the intervention was obtained with  $p\text{-value}=0.001$  ( $p\text{-value}<0.05$ ). This research is in line with the results of research Caesar & Prasetya (2020) obtained that poster media is effective in increasing students knowledge about Basic Sanitation in SD (Elementary School) Negeri 01 Wonosoco, Kudus Regency, Central Java Province with an average pretest score of 55.46 while the posttest average score of knowledge is 88.71. Furthermore, in the research of Djonnaidi et al. (2021) results were obtained good improvement for all aspects of the assessment, and it can be concluded that the influence of the application of poster media in the learning process has a positive impact on students' speaking ability and creates a more interactive learning atmosphere during the online learning period. Then the research of Nataprawira et al. (2018) the results obtained a significant increase in public knowledge of TB disease after socialization with poster media with a  $p<0.03$ .

The first factor influencing triage skills is knowledge (Afaya et al., 2017). Knowledge is a result of human senses or the result of knowing about an object through one's senses. The use of human senses to detect objects that have sight, hearing, smell, taste, and touch (Notoatmodjo, 2014). Poster is a media that presents information in visual form and stimulates the sense of sight. The use of poster media aims to present information in an interesting form, easy to understand, and can be used as a reminder (Daryanto, 2015). According to Satria et al. (2021) knowledge is the basis for a person so that an attitude is formed that is in accordance with needs, Knowledge is an internal factor from within the nurse that influences the formation of attitudes. Knowledge is an important thing that a professional nurse must have in order to carry out her duties and responsibilities properly (Notoatmodjo, 2014).

Researchers argue in this study there was a significant increase in average scores on nurses' knowledge of ATS. The increase in this score was due to the enthusiasm of the nurses in listening to the socialization material about ATS presented in the poster media. Education using poster media has advantages such as being easier to understand, the language used is simple, there are interesting images, and the duration of reading can be adjusted by respondents. The poster is one of the effective media used in increasing nurses' knowledge about ATS. Through the poster media, the

nurses would be easier to understand the material conveyed. The placement of poster media in the strategic area makes it easier for nurses to read the information contained in them. So that in addition to influencing knowledge, it also motivates someone to follow the information contained in it. If someone read the poster many times, the information conveyed on the poster can be understood. Thus, the poster media contributes positively to nurses' knowledge of ATS.

### CONCLUSION

The conclusion of this study was that the majority of the respondents were women, D3 of Nursing education, had previous triage training experience and had an average age of 29.30 years with an average working experience of 4.2 years. The average score of knowledge about ATS before intervention (pretest) and after intervention (posttest) is increasing with  $p\text{-value}=0.001$  ( $p\text{-value}<0.05$ ) which means there was a significant influence of poster media on increasing nurses' knowledge about ATS.

The nurses should have a good understanding of triage so they can provide optimal and proper treatment to the patients and the Hospital responsible to monitor and evaluate also provides some training to the nurses especially about triage if needed.

### ACKNOWLEDGMENT

The researcher would like to thank all nurses who have been willing to be respondents in this research and thank all parties involved in the process of conducting this research.

### REFERENCES

- Afaya, A., Azongo, T. B., & Yakong, V. N. (2017). Perceptions and Knowledge on Triage of Nurses Working in Emergency Departments of Hospitals in the Tamale Metropolis, Ghana. *IOSR Journal of Nursing and Health Science*, 06(03), 59–65. <https://doi.org/10.9790/1959-0603065965>
- Ahsan, K. B., Karim, M. A., FitzGerald, G. J., Morel, D. G., & Burke, J. A. (2019). Development of relationship between triaging of patients and emergency department performance. *Procedia Manufacturing*, 30, 200–207. <https://doi.org/10.1016/j.promfg.2019.02.029>
- Aloyce, R., Leshabari, S., & Brysiewicz, P. (2014). Assessment of knowledge and skills of triage amongst nurses working in the emergency centres in Dar es Salaam, Tanzania. *African Journal of Emergency Medicine*, 4(1), 14–18. <https://doi.org/10.1016/j.afjem.2013.04.009>
- Australasian College for Emergency Medicine. (2014). *Emergency Department Design Guidelines*.
- Bashkin, O., Caspi, S., Haligoa, R., Mizrahi, S., & Stalnikowicz, R. (2015). Organizational factors affecting length of stay in the emergency department: initial observational study. *Isr J Health Policy Res*, 4(38). <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4606993/>
- Caesar, D. L., & Prasetya, B. A. (2020). The Effectiveness of Poster Media in Improving Basic Sanitation Knowledge At Sdn 01 Wonosoco Undaan Kudus. *Journal of Public Health*, 6(1), 83. <https://doi.org/10.35329/jkesmas.v6i1.655>
- Dadashzadeh, A., Abdolazadeh, F., Rahmani, A., & Ghojzadeh, M. (2013). Factors affecting triage decision-making from the viewpoints of emergency department staff in Tabriz hospitals. *Iran J Crit Care Nurs*, 6(4), 269–276.
- Daryanto. (2015). *Learning Media*. One Nusa.
- Djonaidi, S., Wahyuni, N., & Nova, F. (2021). The Influence of the Application of Digital Poster Media in Online Learning during the Pandemic on students' Speaking Ability at the Padang State Polytechnic. *JINOTEP (Journal of Innovation and Learning Technology)*, 8(1), 38–46. <https://doi.org/10.17977/um031v8i12021p038>
- Fadli, Sastria, A., & Usman, E. (2017). Nurses' Knowledge And Experience In Triage Assessments In Emergency Installations. *Scientific Journal of Brightening Health*, 6(1), 54–58. <https://stikesmu-sidrap.e-journal.id/JIKP/article/view/91>
- Fathoni, M., Sangchan, H., & Songwathana, P. (2013). Relationships between Triage Knowledge, Training, Working Experiences and Triage Skills among Emergency Nurses in East Java Indonesia. *Nurse Media Journal of Nursing*, 3(1), 511–525.
- Garbez, R., Carrieri-Kohlman, V., Stotts, N., Chan, G., & Neighbor, M. (2011). Factors Influencing Patient Assignment to Level 2 and Level 3 Within the 5-Level ESI Triage System. *Journal of Emergency Nursing*, 37(6), 526–532. [https://www.jenonline.org/article/S0099-1767\(10\)00327-2/fulltext](https://www.jenonline.org/article/S0099-1767(10)00327-2/fulltext)
- Jatmiko, A., Santoso, J., & Armanto, H. (2018). Utilization of Expert System for Emergency Determination of Toddler Patients in the Emergency Room. *Applied Technology and Computing Science Journal*, 1(2), 63–75. <https://doi.org/10.33086/atcsj.v1i2.854>
- Khairina, I., Malini, H., & Huriani, E. (2020). Nurse Knowledge And Skills In Triage Clinical Decision Making. *Journal of Links*, 16(1), 1–5. <https://doi.org/10.31983/link.v16i1.5449>
- Limantara, R., Herjunianto, & Roosalina, A. (2015). Factors Affecting the High Mortality Rate in the Emergency Room of the Hospital Factors Affecting High Mortality at The Hospital's Emergency Room. *Journal of Medicine*, 28(2), 200–205.

- Mahyawati, M., & Widaryati, W. (2015). The Relationship between Patient Emergencies and Nurse Response Time at the Emergency Room of PKU Muhammadiyah Hospital Yogyakarta [STIKES 'Aisyiyah Yogyakarta]. <http://digilib.unisayogya.ac.id/100/>
- Mailita, W., & Rasyid, W. (2022). The relationship between knowledge and attitudes of nurses about triage at IGD Runah Sakit Semen Padang Hospital. *Humantech Indonesian Multi-Disciplinary Scientific Journal*, 2(2), 200–216.
- Martanti, R., Nofiyanto, M., Prasajo, R. A. J., General, S., & Yani, A. (2015). The relationship between the level of knowledge and the skills of officers in the implementation of triage in the emergency installation of the wates hospital. *Health Science Media*, 4(2), 69–76.
- Nataprawira, H.M. N., Wayan, I., & Handisurya, A. (2018). The effectiveness of poster media interventions on people's knowledge, attitudes, and behaviors regarding tuberculosis in cimerak sub-district, pangandaran, West Java. *Dharmakarya: Journal of Science and Technology Applications for Society*, 7(4), 280–284.
- Notoatmodjo, S. (2014). *Health Promotion and Behavioral Sciences*. Rineka Cipta.
- Ogliastri, E., & Zúñiga, R. (2016). An introduction to mindfulness and sensemaking by highly reliable organizations in Latin America. *Journal of Business Research*, 69(10), 4429–4434.
- Priyanto, A., Abdillah, A., & Olive, T. (2021). INFLUENCE OF EDUCATION HEALTH ABOUT HIPERTENSION SHOW LEVEL OF KNOWLEDGE HIPERTENSION USING MEDIA POSTER AND AUDIOVISUAL PADA PASIEN HIPERTENSION. *Nursing Update: Journal of Nursing Sciences*, 12(3), 105–116. <https://stikes-nhm.e-journal.id/NU/index%0AArticle>
- Queensland Health. (2012). Implementation Standart For Emergency. Departement Short Stay Unit Version 1.0. Queensland Government.
- Satria, G., Nababan, D., Gultom, R., & Martina, S. E. (2021). The Relationship between Knowledge and Nurses' Attitudes about Triage in the Emergency Room During the Covid-19 Pandemic. *Faletehan Health Journal*, 8(03), 238–243. <https://doi.org/10.33746/fhj.v8i03.280>
- Smith, A. (2013). Using a theory to understand triage decision making. *International Emergency Nursing*, 21(2), 113–117. <https://doi.org/https://doi.org/10.1016/j.ienj.2012.03.003>
- Suparjo, Himawan, F., & Cuciati. (2021). Nurse Knowledge about Australasian Triage Scale (ATS) with the Implementation of ATS in the IGD RSU Tegal City. *Journal of Health Sciences*, 5(2), 289–294. <http://jik.stikesalifah.ac.id/index.php/jurnalkes/article/view/451/pdf>
- Ulya, Z., & Iskandar, A. (2017). The Effect of Health Education With Poster Media On Hypertension Management Knowledge In Hypertension Sufferers. *Soedirman Journal of Nursing*, 12(1), 38–46. <https://doi.org/10.20884/1.jks.2017.12.1.715>
- Varndell, W., Hodge, A., & Fry, M. (2019). Triage in Australian emergency departments: Results of a New South Wales survey. *Australasian Emergency Care*, 22(2), 81–86. <https://doi.org/10.1016/j.auec.2019.01.003>
- Wongsawat, S. (2015). Integrating Posters And Actual-Sized Fruit Models In Health Education On Fruit Diets For Elderly Patients. *International Journal of Arts & Sciences*, 08(03), 717–723.
- Zahroh, R., Basri, A. H., & Kurniawati, E. (2020). Standardt Knowledge of Triage Labeling With Emergency Measures Based on Triage Labeling Standards. *Journal of Nursing and Public Health Major Scholars*, 9(3), 252. <https://doi.org/10.31596/jcu.v9i3.628>