

**MEDIA DISC TRIAGE ASSESSMENT ON IMPROVING TRIAGE SKILLS USING THE AUSTRALASIAN TRIAGE SCALE (ATS) ON STUDENTS OF KUSUMA HUSADA UNIVERSITY SURAKARTA****Nikma Alfi Rosida<sup>1\*</sup>, Annisa Cindy Nurul Afni<sup>2</sup>, Muhamad Nur Rahmad<sup>3</sup>**<sup>1-3</sup>Emergency Departement of Kusuma Husada University

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Doi: <https://doi.org/10.33024/jkpm.v7i8.16056>**ABSTRACT**

The Australasian Triage Scale (ATS) is a tool used by triage officers in the emergency department to assess patient severity and prioritize services based on the severity of the patient's condition. To evaluate the effectiveness of using learning tools in the form of Disc Triage Assessment as a learning medium in improving understanding and accuracy in determining triage by nursing students in using ATS triage. The Community Service method used is quasi-experimental with a pre-post test without control design. Community Service will be carried out on Nursing Study Program Students, Diploma Three Program, Faculty of Health Sciences, Kusuma Husada University. Data analysis was performed using the Wilcoxon test. The pretest results showed that the moderate category was 1 respondent (3.1%) and the poor category was 31 respondents (96.9%). The posttest results with the Good category were 3 respondents (9.4%) and the Fair category were 5 respondents (75.0%). The results of the use of Disc Triage Assessment media show that the p-value is 0.016 (<0.05) which means that there is an effect of Disc Triage Assessment Media on Skills to Determine Australasian Triage Scale (ATS) on Students of Kusuma Husada University Surakarta.

**Keywords:** Media Disc Triage Assessment, Triage skills, Australasian Triage Scale (ATS)

**1. INTRODUCTION**

Australasian Triage Scale (ATS) is triage staff at emergency rooms across Australia and New Zealand utilize patient prioritizing assessment instrument. The Australasian College for Emergency Medicine (2019) states that the ATS is used to evaluate a patient's condition severity and prioritize patient care accordingly. Typically, face-to-face or lecture-based techniques are used for triage instruction. But because to the development of information technology, there is now another option for triage training: learning media like video or e-learning (Pradanie et al., 2021). Yusuf & Handayani (2020) did a study in which they adopted ATS in an emergency room at a referral hospital in Indonesia. The findings demonstrated that ATS may be successfully used in Indonesia and enhance triage efficiency through a decrease in service time and an increase in patient satisfaction. But the study also found a number of barriers to ATS adoption, including staff members' inadequate training and ignorance of the triage scale.

According to studies done in Australia by Varndell *et al.*, (2019), only 35% of nurses made the right triage decisions, 45% made under-triages, and 20% made over-triages. An Australian study found that video-based triage training was more successful in enhancing the expertise of triage nurse. Meanwhile, another study conducted in New Zealand showed that the use of e-learning was also effective in improving the understanding and skills of triage in using ATS (Boland & Staines, 2019; Pradanie *et al.*, 2021).

Several studies have been conducted to evaluate the effectiveness of using learning media in triage training, including the use of videos and e-learning. These studies show that the use of learning media can improve the understanding and skills of triage officers in conducting patient priority assessments using ATS (Pradanie *et al.*, 2021).

In using learning media, it is important to pay attention to the design and development of appropriate learning materials to achieve the expected training objectives. Therefore, it is necessary to conduct further Community Service to evaluate the design and development of the most effective learning media in triage training using ATS (Taylor *et al.*, 2019). A study conducted by Retnayu Pradanie and the team in Indonesia in 2021 aimed to evaluate the effectiveness of using videos as learning media in triage training using ATS. This study was conducted on 42 triage officers in the emergency department of the Gatot Soebroto Army Central Hospital Jakarta, using a pre-test and post-test research design (Pradanie *et al.*, 2021).

The findings demonstrated that following video-based instruction, triage officers' abilities significantly improved. Furthermore, most respondents said that videos are a useful learning tool that help students comprehend the subject matter (Haines & Long, 2013). Using instructional aids is one of the learning strategies that may be applied to enhance triage officers' comprehension and proficiency with ATS. The usefulness of teaching media in ATS-based triage training has been examined in a number of studies. According to these research, triage officers' comprehension and proficiency in performing patient priority evaluations utilizing ATS can be enhanced via the use of instructional aids (Haines & Long, 2013).

Additionally, the study demonstrated that media consumption might rise. The study also showed that the use of media can increase the confidence of triage officers in conducting patient priority assessments (Bhanji *et al.*, 2010). The research in Bali about using poster media to increase nurses' knowledge about ATS. Nurses should have a good understanding of triage so that they can perform optimal management of the patient in emergency cases (Antara *et al.*, 2023).

## 2. PROBLEM AND FORMULATION OF THE QUESTION

The actual problems that occurred in the field after the preliminary study was conducted at the Kusuma Husada University Nursing Diploma Three students, Class of 2021, showed that triage material had been delivered to students. However, the accuracy value when determining patient triage averages 60% and most students have limited experience in using the ATS triage method before (Rosida *et al.*, 2023). In addition, this study also shows that the use of teaching aids has the potential to increase the effectiveness of learning the ATS triage method in students, which aims to identify whether the use of teaching aids can increase the effectiveness of learning the ATS triage method in students.

The statement of this problem is how does use *Disc Triage Assessment* in improving triage skills on the *Australasian Triage Scale* (ATS) triage of D-III Nursing students at Kusuma Husada University Surakarta?

However, the purpose this community service is to improve the triage skills of nursing students with learning media called *Disc Triage Assessment*. The purpose of using media *Disc Triage Assessment* is improving triage skills on the *Australasian Triage Scale* (ATS) triage of D-III Nursing students at Kusuma Husada University Surakarta.

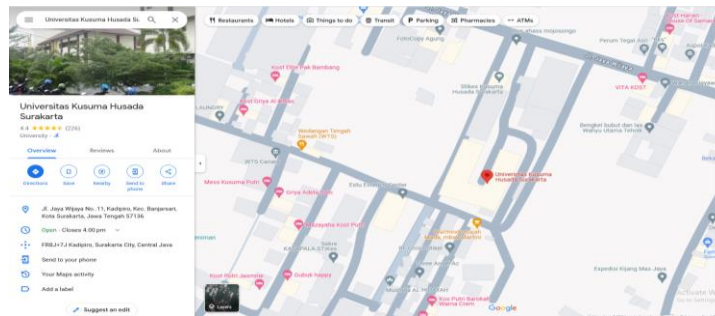


Figure 1. Location of Community Service at Kusuma Husada University Surakarta

### 3. LITERATURE REVIEW

#### a. *Australasian Triage Scale* (ATS)

##### 1) Definition of ATS

The five-category triage concept developed around 1980 at Ipswich Hospital, Queensland, Australia. The same concept was also developed at Box Hill Hospital, Victoria, Australia. The division of these categories is based on the urgency of the patient's condition. Validation of this triage system showed better and more consistent results than conventional triage and was adopted by emergency departments across Australia. This national system was called the National Triage Scale (NTS) and later changed its name to the Australian Triage Scale (ATS) (Australasian College for Emergency Medicine, 2019).

The priority scale in ATS is divided into 5 scales ATS 1 must be treated immediately (100% priority percentage), ATS 2 maximum waiting time 10 minutes (80% priority percentage), ATS 3 maximum waiting time 30 minutes (75% priority percentage), ATS 4 maximum waiting time 60 minutes (70% priority percentage), ATS 5 maximum waiting time 120 minutes (70% priority percentage). Waiting time exceeding 2 hours indicates a failure of access and quality of service (Australasian College for Emergency Medicine, 2019).

The triage area should be equipped with emergency equipment, standard precautionary facilities such as hand washing facilities, gloves, security procedures (alarm or access to security assistance), adequate communication devices (telephone and or intercom, etc.), and facilities for recording information and documentation in triage (Australasian College for Emergency Medicine, 2019).

The *Australasian Triage Scale* (ATS) has been in effect since 1994, designed for emergency rooms of New Zealand Australian hospitals, and continues to improve. Currently, there is an official

curriculum from the Australian Ministry of Health for ATS training so that it can be applied according to standards by triage nurses. This ATS concept then became the basis for the development of triage systems in the UK and Canada (Boyer *et al.*, 2016).

ATS provides a time limit on how long patients can wait until they receive first aid in addition to setting patient priorities that are different from the original function of establishing triage categorization. The ATS system also creates specialized triage training for patients with certain conditions such as pediatric patients, geriatric patients, and patients with mental disorders (Christ *et al.*, 2010).

Emergency nurses in Australia perform the triage process and Australia has an official triage training for nurses and doctors because triage is needed for a smooth and safe flow of patients in the ED, the purpose of this training is to increase the consistency of participants in assigning triage categories and reduce the length of time patients are in the ED (Ebrahimi *et al.*, 2015).

The ATS system developed a special assessment mechanism for urgent conditions for pediatric patients, trauma, triage in remote areas, obstetric patients, and behavioral disorders to make it easier for triers (people who do triage) to recognize the patient's condition, so ATS has certain conditions that become clinical descriptors. These descriptors aim to describe commonly encountered medical cases according to the triage category, making it easier to assign categories (College of Emergency Nursing Australia (CENA), 2007).

## 2) Classification of ATS Triage

Emergency departments across Australia and New Zealand use various emergency department information systems (EDIS) Using these systems, EDs can choose to identify each ATS category using colors including among others: Red (Category 1), Orange (Category 2), Green (Category 3), Blue (Category 4) and White (Category 5) (Australasian College for Emergency Medicine, 2019).

### a. Red (Category 1)

Conditions that are life-threatening or have a risk of disability and require aggressive intervention immediately. This category needs an immediate response, assessment, and treatment. Clinical Descriptors such as Heart failure, respiratory arrest, immediate risk to the airway (respiratory rate breathing rate <10/min, impaired extreme respiratory distress, Blood pressure (BP) <80 (adult) or severely shocked child/infant, Unresponsive or only responding to pain (GCS <9), Ongoing seizures ongoing/prolonged, overdose and unresponsive or hypoventilation, severe behavioral disturbances with threat of dangerous violence.

### b. Orange (Category 2)

The patient's condition is serious enough or deteriorating so rapidly that there is a potential threat to life, or system failure organs if not treated within within ten minutes after arrival or the pain is very severe pain. This category needs assessment and treatment within 10 minutes. The Clinical Descriptors: Airway risk, severe stridor, severe respiratory distress severe respiratory distress, circulatory disorders (moist or mottled, poor perfusion, HR <50 or >150 (adult), Hypotension with effects of hemodynamics, severe

- blood loss severe), Chest pain, very severe pain, suspected sepsis), Febrile neutropenia, severe trauma, major fracture, testicular torsion, ingestion, aortic dissection, ectopic pregnancy, behavioral/Psychiatric: violent or aggressive, direct threat to self or others also severe agitation or aggression, Acute stroke, splashing of acid or alkali into the eye, suspected endophthalmitis suspected (post-cataract, post-intravitreal injection), and major multiple trauma (requiring organized team response quickly).
- c. Green (Category 3)  
Potential Life-threatening condition patient's condition may threaten the limb's body or may cause significant morbidity if assessment and treatment are not initiated within 30 minutes. This category needs assessment and treatment started within 30 minutes. The clinical descriptors: Severe hypertension, considerable blood loss severe blood loss, seizures, persistent vomiting, dehydration, head injury suspected sepsis, severe pain severe, abdominal pain without high-risk features or patient age >65 years, moderate extremity injury, deformity, severe laceration, crush without other high-risk features, children at risk of abuse, Behavioral/Psychiatric: Very depressed, risk of harm to self, Acute psychotic or thought disorder, Situational crisis, Potentially aggressive agitation.
  - d. Blue (Category 4)  
Potentially serious, the patient's condition may worsen, or an adverse outcome may occur if assessment and treatment are not initiated within one hour of arrival at the ED. May require complex examinations complex consultations and/or inpatient management. This category needs assessment and treatment started within 60 minutes. The clinical descriptors: Mild bleeding, foreign body aspiration, no respiratory distress, chest injury without rib pain, difficulty swallowing, head injury, moderate pain, vomiting or diarrhea without dehydration, eye inflammation eye, limb trauma, possible fracture, laceration uncomplicated, nonspecific abdominal pain, Behavioral/Psychiatric: Mental health issues are semi-urgent, under-observation and/or no immediate risk to self or others.
  - e. White (Category 5)  
Less urgent, the patient's condition is sufficiently chronic or minor that symptoms or clinical outcomes will not be significantly affected. This category needs Assessment and treatment started within 120 minutes. The clinical descriptors: Minimal pain without high-risk features, minor symptoms of stable disease, minor symptoms of low-risk conditions, minor wounds, minor lacerations (no need for stitches), Behavioral/Psychiatric: Patients with known chronic symptoms, Social crisis, and clinical patient.

### 3) Principles of Triage

The principles of triage according to the Australasian College for Emergency Medicine (2019) are as follows:

- a. Triage should be done immediately and promptly  
The ability to respond quickly to possible life-threatening illness or injury is paramount in the emergency department.
- b. Assessment should be adequate and accurate

The most important element in the assessment process is the thoroughness and accuracy of the interview process.

- c. Decisions are made based on the assessment  
Effective planning for client safety and care is based on adequate information and accurate data.
- d. Intervene based on fear and condition  
The triage nurse has a primary duty in the accuracy of assessment and determining priorities for the client including therapeutic interventions, diagnostic procedures, and accepted tasks for treatment.
- e. Achieving client satisfaction.

#### 4) Activities in the Application of Triage

Depkes RI (2009) outlines the activities carried out by nurses while in the triage room when clients arrive:

- 1) Determining the priority of client care, classifying clients into emergency, urgent, and non-urgent.
- 2) Respond quickly to illness and trauma that may be life-threatening and immediately take the client to the resuscitation room for further treatment appropriate to his/her condition.
- 3) Provide access for all persons seeking medical assistance.
- 4) Ensure a safe environment for clients with minor complaints while awaiting treatment.

#### 5) Triage Process

The Triage process is a nurse collecting data and information according to the client's severity category both objectively and subjectively so that a priority determination of the severity of the documentation and intervention can be carried out when a life-threatening condition is found. When there is a respiratory or circulatory system disorder, the nurse must immediately intervene with the client by immediately bringing to the resuscitation room with the time needed is 2-5 minutes (Ghafarypour-Jahrom *et al*, 2018; Gilboy *et al*, 2012; Varndell *et al*, 2019) including:

- a) Subjective triage assessment  
Subjective data can be taken from the chief complaint, onset and symptoms associated with perceived and complained, precipitating factors, mechanism of injury previous use of drugs, and history of allergies.
- b) Objective triage assessment  
Assessment can be done by checking vital signs by inspection, palpation, percussion, and circulation. Triage objective data has 4 dimensions, namely airway patency, effective breathing, consciousness and disability (brief neurological examination).
- c) Sorting by severity  
The process of assessing and sorting by prioritizing clients for intervention based on the client's urgency is an important factor in triage care because nurses must make accurate decisions with limited and unclear information in minimal time.
- d) Perform documentation  
Triage documentation is a brief, clear, and concise recording process of everything known and done by the triage nurse which

aims as decision support, communication tools, and medicolegal aspects either manually or computerized.

e) Time

The time required in the application of triage starting from subjective assessment, objective assessment, and sorting based on severity to documentation is 2-5 minutes.

**b. Triage Skill**

**1) Definition of Skill**

Skill can be defined as a person's ability or expertise in performing certain tasks or activities. Skills not only consist of physical abilities, but also involve mental and social abilities such as creativity, innovation, problem-solving, and communication. Skills can be learned through practice and experience and can be measured through tests or observation (Rahmanto *et al*, 2021). Triage skills are the ability or expertise to identify a patient's medical condition quickly and accurately and determine treatment priorities according to the level of emergency. Patient triage skills are very important for health workers, especially those who work in emergency rooms or intensive care units because decisions made during triage will affect the safety and survival of patients. *Triage skills* refer to the level of nurses' perception of the ability to make decisions accurately and timely in the following areas: (1) rapid assessment, (2) patient categorization, and (3) patient allocation (Fathoni *et al.*, 2013).

**2) Types of Skills**

- a) Hard skills or technical skills: skills related to technical and practical knowledge or expertise acquired through formal education or training such as expertise in operating computers, programming languages, welding, medical care, and so on.
- b) Soft skills or non-technical skills: skills related to interpersonal abilities, emotional intelligence, and critical thinking skills such as communication skills, leadership, working in teams, work ethics, and so on.
- c) Transferable skills: skills that can be applied in various fields or professions such as language skills, problem-solving, and communication skills.

**3) Factors Affecting Skill**

The factors that influence the concept of skill or skill are:

1. Education and training: formal education and training can help improve a person's technical and non-technical skills.
2. Work experience: work experience can help improve technical and non-technical skills and provide new insights and perspectives.
3. Natural skills or aptitude: some people may have a natural ability or aptitude in a particular field, such as sports, art, or music.
4. Environment and culture: the environment and culture in which a person grows up and learns can influence the development of his or her skills and interests.
5. Motivation and dedication: A person's motivation and dedication to learning and honing their skills also affects the concept of skill. The

greater the motivation and dedication, the greater the ability to develop skills (Rahmanto *et al*, 2021; Rosida *et al*, 2023).

#### 4) Types of Patient Triage Skills

Some types of Triage Skills in patients are as follows:

1. Identification Skills: The ability to quickly and accurately identify the patient's state of health through physical examination and interview with the patient or their family.
2. Classification Skills: The ability to determine a patient's level of emergency based on an established triage scale, such as the *Australasian Triage Scale* (ATS) or Emergency Severity Index (ESI).
3. Prioritization Skills: The ability to prioritize patient care based on the level of emergency and availability of resources.
4. Communication Skills: The ability to communicate effectively with patients and their families, as well as other healthcare workers in the triage team (Fathoni *et al.*, 2013).

#### 5) Factors Affecting Patient Triage Skills

The factors that influence patient triage skills are as follows.

- a) Experience and Education: The level of experience and education of health workers will affect their ability to triage patients.
- b) Facilities and Infrastructure: The availability of adequate tools and facilities will facilitate health workers in triaging patients.
- c) Clear Triage Protocols: The existence of a clear and comprehensive triage protocol will make it easier for health workers to determine the patient's level of emergency.
- d) Environmental Factors: Environmental factors such as noise and crowds can affect the ability of health workers to triage patients.
- e) In the context of patient triage, skills are very important as they can affect the outcome of patient care. Patient triage skills must be trained continuously so that health workers can master and sharpen their ability to identify the patient's health condition quickly and accurately and determine treatment priorities according to the level of emergency.

In this Community Service used is that the skills of triage officers are very important in triaging with ATS, and the use of learning media can improve understanding and skills. It is hoped that the results of the study can make a significant contribution to the development of effective learning media to improve the skills of nursing students in triaging using ATS.

#### 4. METHODS

The method used in the triage skills training is the *Disc Triage Assessment* explanation method, demonstration by the facilitator, and practice by the participants. The tools and materials needed are *Disc Triage Assessment* media. Analysis The community service method used is quasi-experimental with a pre-post test without a control design. Community Service will be carried out on Nursing Study Program Students, Diploma Three Program, Faculty of Health Sciences, Kusuma Husada University. Data analysis was performed using the Wilcoxon test. The stages of ATS training activities are as follows:



#### 1. Theory Session

At this stage, participants will be explained the ATS concept, ATS classification, the ATS algorithm, and how to use the ATS Triage Assessment Disc media. The facilitator will deliver the training material using a presentation.

#### 2. Demonstration by the Facilitator

After the theory session, the facilitator will conduct a demonstration of the ATS concept, ATS classification, ATS algorithm, and how to use the ATS Triage Assessment Disc media.

#### 3. Practice by Participants

After the demonstration, participants will be allowed to practice a case using the ATS Triage Assessment Disc media. And customized with

#### 4. Evaluation

At this stage, participants will be evaluated by the facilitator on their ability to perform ATS correctly. The facilitator will provide feedback to the participants and give them an overview of the ATS.

In this stage of the activity, participants are expected to gain the necessary knowledge and skills in determining ATS triage correctly to improve accuracy in determining patient triage categories.

## 5. RESULTS AND DISCUSSION

### a. Result

Data analysis was performed using the Wilcoxon test to measure changes in triage skills. Community service activities were carried out 3 times. The first meeting on May 13, 2024, was attended by 36 students and the second meeting on May 27, 2024, which was attended by 34 students and the 3rd meeting was held on June 3, 2024. So the valid student data analyzed is a total of 32 students. From the results of the implementation for 3 times, it turns out that the activity received a good response. Students became more knowledgeable about ATS triage and were able to prioritize patients correctly. The results of the pre-test and post-test, where before learning using *Disc Triage Assessment* media about *Australasian Triage Scale (ATS)* material on students can be seen in Figure 2 below.

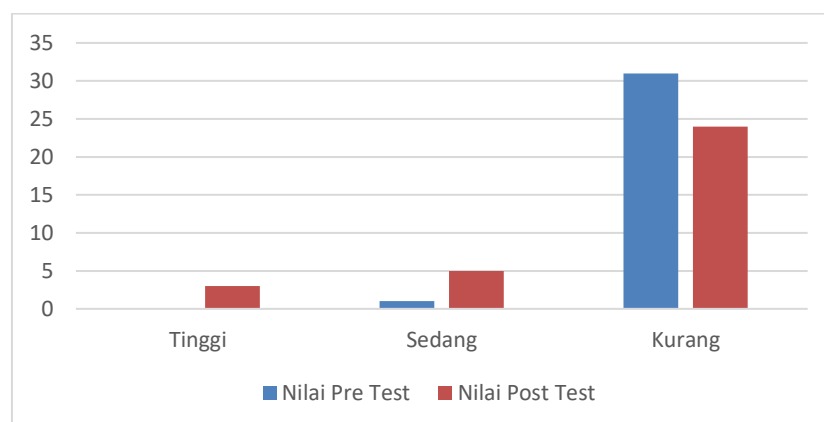


Figure 2. Pretest and Posttest difference of ATS with *Disc Triage Assessment* media

Knowledge of ATS before being given *Disc Triage Assessment* media with moderate category as many as 1 respondent (3.1%) and less category as many as 31 respondents (96.9%). The ability of Triage Skills after being given the *Disc Triage Assessment* media with the Good category as many as 3 respondents (9.4%) and the Fair category as many as 5 respondents (75.0%). The results of the use of *Disc Triage Assessment* media show that the *p-value* is 0.016 ( $<0.05$ ) which means that there is an effect of *Disc Triage Assessment* Media on Skills to Determine the *Australasian Triage Scale* (ATS) on Students of Kusuma Husada University Surakarta.

The following is documentation of the implementation of Community Service activities:



Figure 3. On the first day during informed consent and *Pretest* activities



Figure 4. The second meeting was during the practical simulation process using the *Disc Triage Assessment* media.



Figure 5. The Third meeting during *post-test* activities

#### b. Discussion

Based on the percentage of results before and after using the triage assessment disc media, it can be concluded that student learning activities during learning take place when the first meeting to the third meeting have increased and the percentage of activities in determining patient triage using ATS is in a good category with a percentage interval of 76%-100% so that the results obtained that the process of teaching and learning activities in the classroom using *Disc Triage Assessment* media is in a good category. However good student learning activities can support and smooth the learning process, especially in determining patient triage in the classroom.

The results of this study indicate that *Disc Triage Assessment* media is effective in improving student triage skills. The significant improvement shown by Wilcoxon analysis supports that this media is an efficient tool in triage education. Factors that contributed to this success include the interactivity and visualization offered by the *Disc Triage Assessment* media, which helped students understand and remember triage concepts better.

One of the factors that can improve respondents' knowledge is education and information media. Through counseling, public knowledge about an object can increase (Rosida *et al*, 2023). This study can explain providing education and skills about triage techniques using props. Innovative, creative, and fun learning methods make it easier for students to understand the content of the material. Increased accuracy in determining patient triage can help reduce patient survival rates in hospitals.

Every adult has a unique learning experience and background. Learning media can be customized to accommodate their different learning styles, such as visual, auditory, or kinesthetic. This helps in improving comprehension and retention of information. Technology Adaptation is one of the important factors that influence the effectiveness of using *Disc Triage Assessment* media.

The use of *Disc Triage Assessment* allows for the simulation of realistic triage situations, allowing students to practice and refine their skills in a safe and controlled environment. It also provides immediate feedback, which is very important in the learning process. This is consistent with Smith & Ragan (2004) study, which found that interactive media significantly improved students' triage assessment skills.

This study is also consistent with the findings of McInerney *et al*, (2022) who reported that simulation in medical education can significantly improve students' clinical skills. Interactive media, such as the *Disc Triage Assessment*, makes students more actively involved in the learning process, improving their understanding and skills more deeply.

Time and resource constraints can also be an obstacle. Students may have limited time to learn using *Disc Triage Assessment* media, especially if they have a busy schedule with other courses or extracurricular activities (Nguyen *et al*, 2020). Without adequate time and resources, students may not be able to utilize this media optimally.

Research on the effectiveness of media in nursing education about triage is promising but ongoing. Studies have shown that multimedia approaches can improve knowledge retention, decision-making skills, and confidence among nursing students. For example, a study could cite how a particular video simulation program significantly improved triage accuracy or reduced decision-making time among participants

## 6. CONCLUSION

The conclusions from the results of community service related to the use of *Disc Triage Assessment* media are as follows:

1. The Effect of *Disc Triage Assessment* Media on Triage Skills Determining the *Australasian Triage Scale* (ATS) on Students of Kusuma Husada University Surakarta. Research shows that the use of *Disc Triage Assessment* media is effective in improving student triage skills, although the results of statistical analysis show a significant effect only on certain measurements. The improvement in knowledge and triage skills from the first to the third meeting shows that this media provides benefits in student learning.
2. Factors such as interactivity, visualization of concepts, and simulation of real situations contributed to the successful use of this media. However, there are constraints such as limited time and resources that may affect the optimization of the use of this media in the future.
3. This study supports the importance of using technology in triage education to improve the quality of patient care in hospitals. The use of *Disc Triage Assessment* media not only improves students' practical skills but also broadens their understanding of triage concepts, supports innovative learning approaches, and is adaptive to students' diverse learning styles.
4. Media can be highly effective in educating nursing students about triage by providing visual, interactive, and standardized learning experiences. However, its effectiveness depends on the quality of the content, integration with practical experience, and accessibility to students. Future research and development in this area will continue to refine how media can best support nursing education in triage skills, ensuring that

students are well-prepared to handle critical situations in clinical practice.

## 7. REFERENCES

- Antara, I. G. N. P. J., Emy Darma Yanti, N. P., Md Vera Susiladewi, I. A., & Mariany Purnama Sari, P. (2023). The Effectiveness of Poster Media on Increasing Nurses' Knowledge about the Australasian Triage Scale (ATS). *Nursing and Health Sciences Journal (NHSJ)*, 3(1), 61-66. <https://doi.org/10.53713/nhs.v3i1.162>
- Australasian College for Emergency Medicine. (2019). Australasian Triage Scale. Retrieved from <https://Acem.Org.Au/Content-Sources/Advancing-Emergency-Medicine/Standards-Clinical-Resources/Triage/Australasian-Triage-Scale>.
- Bhanji, F. ., Kelen, G. D., & Kaji, A. (2010). The future of simulation and education in emergency medicine. *Academic Emergency Medicine*, 17(10), 1148-1148. <https://doi.org/10.1111/j.1553-2712.2010.00903.x>
- Boland, M., & Staines, A. (2019). Triage performance and the Australasian Triage Scale: A systematic review. *Australasian Emergency Care*, 22(2), 75-81.
- Boyer, D. M., Brown, S., Channick, C. L., & Orr, J. E. (2016). *ATS 2016 INTERNATIONAL CONFERENCE*.
- Christ, M., Grossmann, F., Winter, D., Bingisser, R., & Platz, E. (2010). Modern Triage in the Emergency Department. *Deutsches Arzteblatt Online*. <https://doi.org/10.3238/arztebl.2010.0892>
- College of Emergency Nursing Australia (CENA). (2007). Emergency Department Model of Care In Australia. *College of Emergency Nursing Australia (CENA) Journal*.
- Ebrahimi, M., Heydari, A., Mazlom, R., & Mirhaghi, A. (2015). The reliability of the Australasian Triage Scale: a meta-analysis. *World Journal of Emergency Medicine*, 6(2), 94-99. <https://doi.org/10.5847/wjem.j.1920-8642.2015.02.002>
- Fathoni, M., Sangchan, H., & Songwathana, P. (2013). Relationships between triage knowledge, training, working experiences and triage skills among emergency nurses in East Java. *Nurse Media Journal Nurs*, 3, 511-525.
- Ghafarypour-Jahrom, M., Taghizadeh, M., Heidari, K., Derakhshanfar, H., & Validity, D. H. (2018). Validity and Reliability of the Emergency Severity Index and Australasian Triage System in Pediatric Emergency Care of Mofid Children's Hospital in Iran. *Bull Emerg Trauma*, 6(4), 329-333. <https://doi.org/10.29252/beat-060410>
- Gilboy, N., Tanabe, P., Travers, D., & Rosenau, A. . (2012). *Emergency Severity Index (ESI): A Triage Tool for Emergency Department Care Version 4 Implementation Handbook*. AHRQ Publication.
- Haines, C., & Long, A. (2013). The Australasian Triage Scale: examining emergency department nurses' performance using computer and paper scenarios. *Annals of Emergency Medicine*, 60(6), A17. <https://doi.org/10.1016/j.annemergmed.2012.08.031>
- McInerney, N., Nally, D., Khan, M. F., Heneghan, H., & Cahill, R. A. (2022). Performance effects of simulation training for medical students - a

- systematic review. *GMS Journal for Medical Education*, 39(5), Doc51. <https://doi.org/10.3205/zma001572>
- Nguyen, V. N. B., Lawrence, K., & McGillion, A. (2020). The effectiveness of partnership models in clinical nursing education - A scoping review. *Nurse Education Today*, 90(March), 104438. <https://doi.org/10.1016/j.nedt.2020.104438>
- Pradanie, R., Noermanzah, Y., & Arifin, M. Z. (2021). The Effectiveness of Using Video as a Learning Media in Triage Training with the Australasian Triage Scale (ATS). *Journal of Health Science and Prevention*, 5(1), 1-10.
- Rahmanto, A., Fitri, L. E., & Rini, I. S. (2021). Analysis of Nurse Personal Factors of Triage Decision-Making in Emergency Installation at University of Muhammadiyah Malang Hospital. In *Indian Journal of Forensic Medicine & Toxicology* (Vol. 15, Issue 4).
- Rosida, N. A., Saputro, S. D., Rahmad, M. N., & Budiman, A. A. (2023). The Influence of the Disc Triage Assessment Media on Triage Skills in Australasian Triage Scale (ATS) Among Nursing Students. *Viva Medika : Jurnal Kesehatan, Kebidanan, Dan Keperawatan*, 16(04), 496-503. <https://doi.org/10.35960/vm.v16i4.1196>
- Smith, P. L., & Ragan, T. J. (2004). *Instructional Design*. Wiley. [https://books.google.co.id/books?id=\\_cAkAAAAQBAJ](https://books.google.co.id/books?id=_cAkAAAAQBAJ)
- Taylor, C., Bengner, J. R., & Feltbower, R. (2019). An observational study to compare computer-assisted versus paper triage records for accuracy of triage categorisation in emergency department patients using the Australasian Triage Scale. *Emergency Medicine Journal*, 36(2), 87-91.
- Varndell, W., Hodge, M., & Fry, M. (2019). The use of the Australasian Triage Scale to improve patient flow in the emergency department: A systematic review. *Australasian Emergency Care*. *Australasian Emergency Care*, 22(4), 191-197.
- Yusuf, A. J., & Handayani, P. W. (2020). Implementation of the Australasian Triage Scale in the emergency department of a tertiary care hospital in Indonesia. , 7(3), 295-300. *International Journal of Nursing Sciences*, 7(3), 295-300.