

Knowledge and Skills in Triage Assessment among Nurses in Emergency Department Hospital Saudi Arabia

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ABSTRACT

Introduction: Triage is the nursing process and the first step for patients who came to or were brought to the Emergency Department (ED). As hospitals have more patients, the ED becomes overcrowded with non-patients. An inaccurate triage decision not only delays patient treatment but also maintains unnecessary expenses for the facility. Patients in the waiting area should be reassessed to determine their conditions. Treatment for patients first come first serve without triage acuity level of their illnesses may result in potential delays for critically sick patients. The rationale of triage in the ED is to prioritize incoming patients and identify those who need to be seen first. **Methods:** Descriptive study using cross-sectional questionnaires for non-random sampling. Quantitative approaches were chosen as the study type. Questionnaires were completed by 41 of the selected sample size. The study's aim is to determine the level of knowledge and skills in triage assessment among nurses in Emergency Department Hospitals in Saudi Arabia. **Results:** Response rates of 100% were obtained from the study. 19 (46.3%) of the participants were aged between 31-40 years old. Most of the respondents have bachelor's degrees in nursing, which are 38 (92.7%). Respondents with experience in ED of about 11-20 years are 18 (43.9%) of the total. 100% of respondents say that they are familiar with the Canadian Triage and Acuity Scale (CTAS) triage primary assessment. 100% will change the CTAS level when the patient deteriorates and 100% agreed to give Paracetamol to the patient with a body temperature of more than 38 degrees. Seven questions of skill level were completed with 100% of the correct answers. There is no significant relation between triage knowledge and triage skill. **Conclusion:** This finding suggests there is high knowledge of triage assessment is having good skills as well. Hence high knowledge and good skill should be maintained by continuing education, in-service, and training.

Keywords: Emergency Department; Assessment; Triage; Knowledge; Skills

INTRODUCTION

Triage is the nursing process and the first step for patients who came to or were brought to the Emergency Department (ED). As hospitals receive more patients, EDs become overcrowded with non-emergency patients as well. Triage assessment is a practice relating to decision-making on which patients need immediate treatment and which patients are safe to wait for the treatment (Aloyce, Leshabari, & Brysiewicz, 2014).

The triage nurse is the first person in the ED that patients come across after registration. ED nurses are trained with the course and triage guidelines for accurate decisions. Nurses can experience numerous emergency cases, such as sudden cardiac arrest and respiratory failure. To improve knowledge and skills in this field, training on BLS with periodic replication is important (Isa *et al.*, 2022).

The triage assessment process is an ongoing process of continuous assessment and re-assessment. Patients in the waiting area also should be reassessed to conclude deterioration while waiting and need more urgent consideration. Treatment for patients first come first serve without triage acuity level of their illnesses may result in potential delays for critically sick patients (McGhee, *et al.*, 2016).

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Problem Statement

Recently, in 2017, there was an issue in the Emergency Department Hospital in Saudi Arabia. The daily statistic showed that more than 25% of patients were categorized as level IV by a triage nurse and were upgraded by ED physicians. This is an issue to be investigated whether the nurse lacks knowledge in triage or the patient deteriorates while waiting to be seen (Al-Otmy *et al.*, 2020).

There was a study done in Tanzania Hospital published in July 2014, thirty-three percent (33%) of the respondents, were not knowledgeable about triage. Thirteen percent (13%) of the respondents listed that they had attended workshops but were lacking information on how to triage patients. About (52%) of the respondents were not able to decide whether to allocate the patient to the appropriate triage category level. Fifty-eight percent (58%) of the respondents had no knowledge of the time limits for waiting for the triaged categories (Aloyce, Leshabari, & Brysiewicz, 2014).

A study conducted in East Java, Indonesia in 2013 showed that (58%) of respondents had low triage knowledge and that (65.40%) perceived their overall triage skills at a moderate level (Aloyce, Leshabari, & Brysiewicz, 2014).

A similar study was conducted in the ED of a Government Hospital in Addis Ababa, Ethiopia, in 2016. About fifty-four percent (54.5%) of respondents had low knowledge of triage and 52.9% had moderate skill in triage. However, there are relationships between knowledge and skills in triage assessment. Within 24 hours of admission, unexpected life-threatening conditions were identified. It was found by ED admissions with serious physical injury. From the ED admissions, (0.3%) of 100 adults met the criteria for the study (Tilahun, 2016).

There is a rate of about 2% and 15% of errors and adverse events involved in admissions. Those admissions involved in errors were preventable and the error type and severity were overlooked. 93.3% of admissions that involved adverse events, were preventable. Admissions resulted in death recorded as 20% and 60% charted as a severe physical injury. The adverse event types were diagnosis issues (53.3%), management issues (40%), and medication adverse events (6.7%) (Zhang *et al.*, 2017).

Purpose of Study

The purpose of the study is to measure the level of knowledge and skills of the nurses who are assigned to the triage area. This is because the list of patients categorized as level 4 by the Canadian Triage and Acuity Scale (CTAS), has been upgraded to CTAS level 3 by the physicians. The rationale for triaging is to identify and prioritize incoming patients who need immediate treatment can safely be seen later. Are the nurses in triage performing a concise, correct assessment and assigning the patient the appropriate acuity level? Nurses assigned to the triage area should be aware and always focus as lack of knowledge of triage and waiting times can cause harm to the patients.

As triage is the first step of the process assessment by a registered nurse for patients who arrived through ED, it is to ensure that they have been given appropriate attention in the proper triage category location, with the required level of urgency. It is a strategy and a better way to improve the nurses' knowledge and skills in triage.

Hypothesis

There is no significant relationship between the level of knowledge and skills in triage assessment among nurses in the Emergency Department of a Saudi Arabia.

Knowledge of Triage

Knowledge of triage assessment for nurses is the key element of supervision in ED. Triage nurses should have knowledge regarding triage assessment, level of category, and skills for triage. The triage system is to assess and prioritize the patient with a categorized severity level. To enhance the triage skills and knowledge of nurses, continuing education and training courses related to triage assessment and advanced management of medical emergencies are key aspects in order to increase the quality of care and patient safety (Ali *et al.*, 2013).

A study to measure the level of knowledge among nurses done at Hospital Dr. Wahidin Sudirohusodo Mekasar by Ismail (2016) found (87.5%) have good knowledge of the triage system in patient care, and (12.5%) have less knowledge about the triage system in patient care. From the research result, it is indicated the age of 25-35 years old, and age above 35 years old as respondents had good knowledge. This study was done only on a small population as it was limited to ED nurses in small hospitals only. To achieve knowledgeable nurses, a training and education program with constant evaluation of a nurse's performance should be done using the appropriate assessment (Albougami, 2019).

Skills in Triage

Every nursing field requires certain skills and abilities, and ED nursing is no exception. ED nursing involves working with patients, doctors, and other nurses in an emergency environment. In order to work in the ED, the nurse must have certain skills and abilities that go above and beyond nursing. As an ED nurse, not only treat patients and complete tasks but also have the ability to communicate successfully during stressful situations. ED nurses should assess the patient with knowledge and skills for the symptoms and follow doctor instructions in an ED environment (Aghababaeian *et al.*, 2017).

The Emergency Department is the unit for people who are scared or in pain and need treatment and support. ED nurses should have the appropriate skills to attend to patients, deal with difficulty agitated family members, and speak with people who do not speak much. At the same time, ED nurses need to perform and understand the basic principles of good customer service, and sometimes the ED nurses need to stand their ground with mildly aggressive patients or family members. The ED nurse should make an immediate assessment of critical conditions and situations (Aminiahidashti, Hosseininejad, & Mohammadi, 2014).

One of the nurses' responsibilities is to conduct triage procedure. The nurses continue to administer triage assessments for all patients, including criminals. Thus, when the criminals arrive in the Emergency Department, the patients should undergo the triage procedure. The nurse's care is surely based on the triage principle without judging their status as criminals (Astari, & Yuliatun, 2020).

Assessment of the Patient

Assessment of the patients is an important matter in recognizing patient deterioration early. Studies identified that assessment of the patient is one of the important roles in empowering nurses to identify patient conditions in a timely fashion. Vital signs were used as indications to recognize timely deterioration and assist in the decision-making process. The patient who was under triage and waiting in the area should be reassessed and the patient or companion should be aware of the limited waiting time. All the triage guidelines specify the time limit for patients who should be seen first by the emergency physician, but there is no specific timeframe to be discharged from the ED (Massey, Chaboyer, & Aitken, 2014).

Accuracy in Triage

Accuracy in triage assessment can help to reduce mortality and morbidity. Patients may be categorized by the nurse in triage as not having a medical emergency. When this situation occurs, the patient may be with the right or under-triaged. Sometimes, patients are also triaged with a high score which is a triage level higher than necessary. It may cause non-emergency patients to be seen ahead of a patient with emergent medical needs. The triage score and categorization level depend on the patient's complaints, history, and vital signs. To make it run well, nurses should have education and training.

A study comparing three hospital triage systems found that a physician-led triage system resulted in improved efficiency and quality of patient care. According to Goldstein *et al.*, (2017), their study to determine how often patients were allocated to correct triage revealed that 68.3% of ED patients were correctly triaged. However, non-trauma patients have a possibility to be incorrectly triaged and the factor contributing to that could be due to incorrect or lacking discriminator use, numerical miscalculations, and other human errors (Goldstein *et al.*, 2017).

Morbidity and Mortality

Triage staff should be careful and alert while performing triage assessments. Never place the patient under triage as

this will cause a serious issue. Legal action may be against the staff and hospital administration. Wrongly categorized levels of patients may cause serious morbidity and mortality. Over-triage is overestimating the category level, acceptable rates of up to 50% in an effort to avoid under-triage, might be profitable (Siddiqui, 2012).

Stratifying and categorizing patients according to their clinical conditions may improve the critical situation and decrease the risk of patients deteriorating in the waiting area. The goal of triage assessment is to provide every patient with the right resources, at the right place, and in the right total time (Siddiqui, 2012).

A stroke is one of the emergency conditions that are considered critical. A stroke is caused by a decrease in nerve function that is affected by injuries to the central nervous system. The initial assessment in triage by nurses will provide the right treatment quickly (Meilyana, Andarini, & Hayati, 2021). The earlier the rehabilitation process begins, the less likely the patient will experience an ability deficit. Therefore, assessing active and passive ROM exercises can increase joint mobility to prevent the occurrence of various complications (Netti, & Suryarinilsih 2022).

METHODOLOGY

Study Type

The researcher used a Quantitative approach as the study type. The researcher chose this study type as it is easy to study for more numbers of sample sizes. Using a quantitative study type helps the researcher get a trustworthy result (Sutton, & Austin 2015).

Study Design

For the Study design, the researcher used a descriptive study which is using Cross-sectional questionnaires. This design of the study has been used as it is easy to conduct, and data can be collected by using questionnaires. It can be analyzed and evaluated quickly (Choy, 2014).

Data Collection/Tools

Data was collected using a designed questionnaire. Prior to the distribution of questionnaires, the researcher discussed and obtained permission from the Nurse Manager and hospital Institutional Review Board (IRB) for the study’s purpose. In the ED setting, with a different team on duty daily, the researcher assigned one of the non-nursing staff members to help distribute and collect the questionnaires in a fully confidential way. The questionnaire was kept in a sealed envelope and kept in a locked drawer once the participants returned the answers. The consent is attached, along with questionnaires for respondents to fill out as part of their agreement to participate in the study. The researcher also provided a pen for respondents to be used for answering the questionnaires and it was given to them as an appreciation. Due to some limitations, the data was fully collected in a week.

Calculation Formula

For this research study, the researcher used the Raosoft sample size calculator to calculate the recommended sample size. Figure 1 below shows the Raosoft calculation formula for sample size.

What margin of error is acceptable? 5% is a common choice	5%
What confidence level is needed? Typical choices are 90%, 95%, or 99%	95%
What is the population size?	45
What is the response distribution? Leave this as 50%	50%
Recommended sample size is	41

Figure 1: Raosoft Calculation Formula

Reliability and Validity

The researcher developed the questionnaire and instrument based on a previous literature review on a similar topic. As the researcher made some alterations to the questions, conducted a face-to-face pilot study to evaluate the questionnaire with 10% of the total population.

Cronbach’s alpha has been used to measure the reliability and validity of the questions. Knowledge on Triage Assessment contains ten questionnaires with Yes or No as the answers. The result is 0.8. The same goes for the Skill on Triage assessment, which contains ten questions with answers of Yes or No. As the result indicates 0.91, the researcher used the questions with full confidence.

RESULTS

Description of Samples

Descriptive statistical analysis was used to identify the frequency and percentage of the responses in the questionnaires. Data were analyzed using the software program SPSS version 21. The findings of the study were interpreted, discussed, and presented in the tables and figures.

Research Findings

Research questionnaires for this study were distributed to 41 selected staff nurses in the Emergency Department and 100 percent of them were returned with complete answers. The tables below show the Demographic data, which includes age, gender, marital status, educational level, experience in the nursing field, and experience working in Emergency Department. The table shows the level of knowledge on triage assessment which includes training in triage courses, waiting time, and reassessing patients in the waiting area. The table shows the level of skills in triage assessment which contains the rapid assessment of patients, patient categorization, and patient allocation level. The analysis was done in terms of frequency and percentage.

Table 1: Demographic Data of Respondents of the Study

Demographic Factor		Frequency (f)	Percentage (%)
Age	20-30 years old	6	14.6
	31-40 years old	19	46.3
	41-50 years old	16	39.0
	50 years and above	0	0.0
	Total	41	100
Gender	Male	1	2.4
	Female	40	97.6
	Total	41	100
Marital status	Single	11	26.8
	Married	30	73.2
	Total	41	100
Highest educational level	Diploma in Nursing	2	4.9
	Bachelor in Nursing	38	92.7
	Master’s Degree in Nursing	1	2.4
	Total	41	100
Experience in the Nursing field	Less than 5 years	2	4.9
	6-10 years	14	34.1
	11-20 years	17	41.5
	21 years and above	8	19.5
	Total	41	100

The above table is about demographic data which contains respondents' age, gender, marital status, highest educational level, experience in the nursing field, and experience in the Emergency Department. A total of 6 (14.6%) are between the ages of 20-30 years old. 19(46.3%) of the respondent in the age of 31-40 years old and 16(39.0%) is at age of 41-50years old. There is no respondent older than 50 years old.

A total of 6(14.6%) are between the ages of 20-30 years old. 19(46.3% of the respondent in the age of 31-40 years old and 16(39.0%) is at age of 41-50years old. There is no respondent at an age more than 50 years old. 40(97.6%) are female respondents and only 1 (2.4%) is a male respondent. 11(26.8%) are still single and another 30(73.2%) are married. Only 2(4.9%) of respondents have a Diploma in nursing. 38(92.7%) have already obtained Bachelor in Nursing. However, 1(2.4%) of them is already having Master in Nursing. For experience in the nursing field, 2(4.9%) of the participants is less than 5 years. 14(34.1%) are 6-10 years, 17(41.5%) have experience in the nursing field for 11-20 years and 8(19.5%) have experience in nursing for 21 years and above. However, 10(24.4%) have experience in the emergency department. 12(29.3%) are experienced in ED for 6-10 years. 18 (43.9%) have an experience in Emergency Department for 11- 20 years and 1(2.4%) of them is having experience in ED for 21 years and above.

Table 2: Knowledge of Triage Assessment Among Nurses in the Emergency Department Hospital Saudi Arabia

Variable	Yes		No	
	n	(%)	n	(%)
I attended the Triage course before being assigned as a Triage nurse	40	97.6	1	2.4
I am familiar with the CTAS triage primary assessment form in Emergency Department	41	100.0	0	0.0
I have an experience in Triage from a previous hospital.	34	82.9	7	17.1
Vital signs are one of the important elements while triaging patients unless the patient is brought directly to Resus bed.	41	100.0	0	0.0
I am confident to decide the category level for the patient and well known about the CTAS Guidelines	40	97.6	1	2.4
I always use a suitable pain scale for screening the pain score of patients.	39	95.1	2	4.9
After allocating patients as CTAS- 4 and 5 in the waiting area, was the patient and companion informed regarding the estimated waiting time?	36	87.8	5	12.2
Was the patient reassessed in the waiting area according to their CTAS?	38	92.7	3	7.3
When the patients were reassessed in the waiting area , the patient's condition deteriorated. Was the CTAS level changed	41	100.0	0	0.0
Was the medication such as Paracetamol initiated for fever with a body temperature of 38 degree and above?	41	100.0	0	0.0

The above table shows the responses of respondents to the knowledge questions on triage assessment questionnaires. It contains ten questions for the level of knowledge test regarding the training of the triage course, the waiting time limit, and reassessing patients in the waiting area.

40 (97.6%) of the respondents answered that have attended the Triage course before being assigned as a Triage nurse and only 1(2.4%) is not attending the course. About 41 people (100%) are familiar with the CTAS triage primary assessment. 34 (82.9%) have experience in Triage from a previous hospital. However, 7 (17.1%) of respondents have no triage experience from another hospital. 41(100%) answered yes for vital signs are one of the important elements while triaging a patient unless the patient is brought directly to Resus bed. About 40(97.6%) were confident to decide the category level for the patient and were well-informed about the CTAS Guidelines. 1 (2.4%) still not confident to do so. 39 (95.1%) always used the suitable pain scale for screening the pain score of patients and 2 (4.9%) answered No. 36 (87.8%)

informed the patient and companion of the estimated waiting time when allocating patients to the waiting area. However, 5(12.2%) answered “No” for their answer. 38(92.7%) did reassess the patient in the waiting area according to their CTAS and 3(7.3%) did not reassess the patient in the waiting area. 41(100%) respondents will change the CTAS level when the patient deteriorates while waiting to be seen 100% agreed to give paracetamol to a patient with a body temperature of more than 38 degrees.

Table 3: Skills in Triage Assessment Among Nurses in Emergency Department Hospital Saudi Arabia

Variable	Yes		No	
	n	%	n	%
Able to assess patient general condition, appearance, and chief complaint and take vital signs within 3-5 minutes.	41	100.0	0	0.0
Rapidly assess and identify patients having respiratory distress	41	100.0	0	0.0
Immediate apply oxygen for patients having difficulty in breathing. (Oxygen saturation less than 90% for non-COPD patients).	38	92.7	3	7.3
Immediate response for patients who arrived semi - conscious or unconscious.	41	100.0	0	0.0
I will Apply a pressure dressing for the active bleeding wound before transferring the patient to the room.	41	100.0	0	0.0
I will categorize patients with the right level according to the guidelines of the triage system applied (CTAS)	41	100.0	0	0.0
Is CTAS -3 the correct level for a patient having severe pain using an appropriate pain scale? (Pain score 8/10 via Adult Numeric scale)	35	85.4	6	14.6
Immediately identified patient with life or limb- threatening and shifted patient directly to Resus bed. (CTAS 1 and 2).	41	100.0	0	0.0
Transfer and endorsed the patient problem detail to the primary nurse when allocating the patient to level 3.	41	100.0	0	0.0
I will allocate patients with CTAS 4 and 5 in the waiting area as provided.	40	97.6	1	2.4

The above table shows the responses of respondents to the skills on triage assessment questionnaires. The ten questions for the testing level of skill triage assessment included rapid assessment, patient categorization, and patient allocation.

From the total of ten skills questionnaires, there are seven questions completed with 100% of the correct answer. This has shown that participants have good skills by being able to assess patients’ general condition, appearance, and chief complaint and take vital signs within 3-5 minutes, Rapidly assess and identify patients having respiratory distress, and Immediate response to patients who arrived in a semi-conscious or unconscious, apply pressure dressing for the active bleeding wound before transfer the patient to the room, categorized patient with the right level according to guidelines of triage system applied (CTAS), immediately identified patient with life or limb-threatening and shifted patient directly to Resus bed (CTAS 1 and 2), transfer and endorsed the patient problem detail to the primary nurse when allocate patient to level 3.

About 38(92.7%) Immediate apply oxygen for the patient having difficulty in breathing (Oxygen saturation less than 90% for the non-COPD patient) and 3(7.3%) chooses No. 35(85.4%) says Yes to CTAS-3 correct level for a patient having severe pain using appropriate pain scale? (Pain score 8/10 via the Adult Numeric Scale) but 6 (14.6%) answered No. However, 40 (97.6%) will allocate patients with CTAS 4 and 5 in the waiting area as provided but 1 (2.4%) answered No to allocating patients with CTAS 4 and 5 in the waiting area as provided.

Table 4: Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)	Point Probability
Pearson Chi-Square	0.555a	1	0.456	1.000	0.614	0.614
Continuity Correction	0.000	1	1.000			
Likelihood Ratio	0.989	1	0.320	0.665	0.614	
Fisher's Exact Test				1.000	0.614	
Linear-by-Linear Association	0.541c	1	0.462	1.000	0.614	
N of Valid Cases	41					

a. 2 cells (50.0%) have an expected count of less than 5. The minimum expected count is 0.44.

Computed only for a 2x2 table.

The standardized statistic is -0.736.

Chi-square tests were applied via SPSS to examine the relationship between the level of knowledge and skill in triage assessment in the Emergency Department Hospital Saudi Arabia. The result shows there is no significant relationship between the two variables. 2 Cells resulted in 50.0%. So, the researcher chose Fisher's Exact Test. The *p*-value is 0.614 which is >0.05.

The result shows there is no significant relationship between the level of knowledge and skill in triage assessment among nurses in the ED at the Hospital Saudi Arabia. So, the researcher accepts the Hypothesis.

DISCUSSION

Demographic Data

Most of the respondents are aged 31-40 years old, which is 19 (46.3%) of the total sample size. The findings showed that around 38 (92.7%) of the respondents had Bachelor's Degrees in Nursing. This result shows different from a study result from Indonesia by Fathoni, Sangchan, & Songwathana, (2013) which found that most of the respondents (94.4%) had graduated with a diploma in nursing only.

Almost half 18 (43.9%) of the respondents had work experience in the emergency department between 11-20 years old. This is high when compared to a study conducted in Indonesia by Fathoni, Sangchan, & Songwathana, (2013) which showed only 2.1% of them had work experience in an emergency department greater than five years.

Knowledge of Triage Assessment

Most of the respondents answered the knowledge questionnaires 100% which showed that they had good knowledge of triage assessment. However, some of the respondents answered not some questions. 34 (82.9%) of respondents have triage experience from another hospital regardless of any hospital or triage scale guidelines, while compared to a study done at Addis Ababa Hospital, Tilahun, (2016), the respondents had some Triage knowledge from another hospital which was about 68.8% only.

For about 5(12.2%) of the respondents did not inform the patient and companion about the estimated waiting time in the waiting area. However, compared to a similar study done in Australia, Hammad, Pich, Kable, & Hazelton, (2017), 50% of the respondents did not inform the estimated time to the patients. Even using the different triage guidelines, the estimated time for each category is still the same.

Skills in Triage Assessment

Skill on triage assessment showed of 32(84.2%) respondents have good skills compared to the study done in Addis Ababa Ethiopia, Tilahun, (2016) with only having moderate skill level of about 52.9% . However, there are respondents 6(14.6%), who were wrong to the question that CTAS-3 is the correct level for a patient having severe pain using the appropriate pain scale (Pain score 8/10 via Adult Numeric scale). This is still a low percentage compared to a similar study done in Brown, Clarke, & Spence (2015), where nearly 20% of the participants assigned the same criteria as CTAS Level

3 (Bullard *et al.*, 2017).

Relationship Between Knowledge and Skills in Triage Assessment

From the research study, the result analyzed by SPSS 21, shows there is no significant relationship between knowledge and skill in triage assessment among nurses in ED Hospitals in Saudi Arabia. However, in a similar study done in East Java, Indonesia Fathoni, Sangchan, & Songwathana, (2013) found a significant relationship between knowledge and skill in triage assessment. The study was done in Addis Ababa, Ethiopia, by Tilahun, (2016) also found there is a significant relationship between knowledge and skill in triage assessment.

CONCLUSION

Overall, the researcher concludes that this research study achieved its purpose and aim. Triage capacity can be summarized by knowing the guidelines of the scale that is used in the organization. Triage assessment training for staff should be continuous. The accuracy of accurate triage can be maintained by continuous training, and ongoing assessment needs. It is to maintain a safe work environment, patients' safety, and satisfaction, establish and maintain a positive client-patient focus relationship, and minimize the risk of escalation of aggression through practical knowledge gained through experiences and training.

Recommendation

The researcher suggested that the emergency nurses maintain and keep updating the appropriate courses for knowledge and skill to improve their triage assessment and skills. It is for improving the quality of care always applied for patient safety. Nurses in ED should be offered continuing nursing education and training related to triage such as annual competency, in-service among the team in ED, and sharing knowledge while working like teaching their respective colleagues who had deficits.

The hospital should avoid rotation of workplace among nurses as this did not allow nurses to stay longer in the department to gain more knowledge and skill experience so that they have good work experience in the emergency department. Further study should be conducted through participatory observation to assess skills as this study is limited to assessing perceived triage skills.

Conflict of Interest

The authors declare that they have no conflict of interests.

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