Conclusion
and
Recommandations

Conclusion and Recommendations

Conclusions:

The findings of this study show that there is lack in triage knowledge and skills of newly graduated nurses (NGNs) working in the emergency hospital of Mansoura University. Therefore it was imperative to establish triage training program based on the finding of need assessment that helped to establish and improve nurses knowledge and skills in emergency hospital.

The results of this study reflect that total knowledge score of nurses in relation to triage safety, triage process, across the room assessment, primary and secondary assessment were very good immediately post triage program implementation, and there were highly statistical significant differences between the study and control groups. On the other hand, the total mean competency score of NGNs practice in relation to primary and secondary assessment and communication process were either poor or quiet good competent pre program implementation. Where there was an increase competency level of the study group from poor competency to very good competency immediately post triage program implementation, also, there were highly statistical significant differences between the study and control groups.

Recommendations:

Recommendations regarding administration and leadership:

Based on the findings of this study, the following recommendations were suggested:

- Designing an educational handout about triage process must be provided to nurses to be used as a reference guide in their practice.
- Establishment of an accurate and available documentation system
- The ED should have a standard for facilities, equipment, and care.
- Classifying the emergency rooms according to triage categories and urgency of the patient's condition.
- Creating a triage algorithm to be applied in clinical practice.

- Increase ratio of emergency nurses working at emergency department.
- Conducting a regular staff meeting and conferences for the discussion of work problems, and difficulties

Recommendations regarding triage education

- Improve and update nurses knowledge and skills about triage in emergency department through attending national and international conferences and workshops.
- Developing system of periodical nurses evaluation to determine strategies for updating their knowledge and enhancing their practice.
- Educating and encouraging nurses to communicate effectively, in a more open manner, with patients, and patients' families' members.

Recommendations regarding clinical practice

❖ *Specific practices for triage safety*

- Assessment of environmental hazards to maintain safe practice at triage.
- Apply appropriate universal standard precautions when potential exposure to blood or body fluids.
- Assessment of emergency equipment (bag-valve mask and oxygen supply) prior to triage assessment.

❖ *Specific practices for triage process*

- Prioritizing all patients presenting to the ED according to their urgency as Resuscitation, Emergency, Urgent, semi urgent or Non urgent categories.
- Developing a formal unit based training program that will prepare the emergency triage nurse to take the triage role.
- Developing triage policy and guidelines that will be used by emergency staff as a tool to guide triage assessment and prioritizing of emergency care.
- Triaging all emergency patients presenting to the ED by a competent and skilled health care professional in a timely efficient manner.

❖ *Specific practices for critical look*

▪ Assessment airway, breathing, and circulation.

▪ Training nurses staff how to identify obvious life threatening condition.

❖ *Specific practices for primary and secondary assessment*

▪ Demonstrating the steps of performing primary and secondary assessment.

▪ Training nurses staff how to assess pain by visual analog scale (VAS) to measure pain severity.

❖ *Specific practices for communication process*

▪ Emphasizing on the importance of effective communication with the patients/family/other health staff for benefits of quality of care served to the emergency patients.

Recommendations regarding future research

▪ Develop a clear evidence based triage system and related policies and procedures to study the effect of implementing triage training program on nurses knowledge and practice.

▪ Further research should focus on evaluating patient outcomes following appropriate triage implementation.

Summary

Summary

Emergency department (ED) is an integral unit of the hospital, it is designed to provide immediate care twenty four hours every day to patients who are suffering from acute injuries as well as patients with life threatening conditions. Worldwide, the number of patients arriving at ED has increased over the past few years. This raised a concern of the need for a system that assessed and classified patients in the order of urgency. An effective triage system aims to ensure that patients seeking emergency care receive appropriate attention, in a suitable location, with the requisite degree of urgency and that emergency care is initiated in response to clinical need rather than order of arrival *(Fathoni et al., 2010 ; Qureshi, 2010; Safari, 2012, Rominski et al., 2014)*.

The aim of this study is carried out to evaluate the effect of implementing triage training competencies on NGNs working in ED at emergency hospital. The **Setting** of this study was conducted in the ED of Emergency Hospital at Mansoura University and Talkha Hospital. The **sample** composed of two groups. The first group **" study group"** consists of all NGNs who have a bachelor degree in nursing and are involved in providing direct care for emergency patients in the Emergency Hospital at Mansoura University and who are willing to participate in the study (N = 50). As for the control group, who have a bachelor degree in nursing and are involved in providing direct care for emergency patients in Talkha Hospital (N= 25).

The data were collected using the following tools:

Tool I: "Nurse's Knowledge Assessment Questionnaire"

This Questionnaire adopted from *Salem (2006)* and modified by the researcher, it was used to assess and evaluate NGNs knowledge about triage process in the ED and it used pre, immediately and post program implementation. This tool included 35 multiple- choice questions divided into triage safety, triage process, across the room assessment, primary assessment, secondary and focused assessment.

Tool II: "Nurse's Practice Observational checklist"

This tool was developed by the researcher based on reviewing the literature. It was used to assess and evaluate the competency level of NGNs performance in triage process. It cover the following competencies: triage safety competencies, triage process competencies, across the room assessment competencies, primary and secondary assessment competencies.

Tool III: "Nurse's Communication and interpersonal relationships Observational checklist"

This tool adopted from *Salem (2006), Hurme (2007)* and modified by the researcher based on the reviewing of the literature;. It was used to assess and evaluate NGNs interpersonal and communication skills when performing triage process.

The current study was conducted on four phases; assessment phase, program preparation phase, implementation phase and evaluation phase.

Phase one " Assessment phase"

During this phase, the researcher assessed NGNs knowledge, skills and communication and interpersonal relationship for the study and control groups regarding triage process. It was performed by using *tool I, tool II, tool III.*

Phase two " program preparation phase "

The researcher designed triage training program, it was composed of 10 sessions (Theoretical and practical training sessions). *Theoretical sessions* focused on: important, principles of triage, triage safety, triage process and systems, importance of communication, and role of triage nurse. *Practical sessions* focused on: triage categories, communication skills, critical look, primary assessment, and secondary assessment. Also a booklet containing the content of the program was designed and translated into a simple Arabic language by the researcher.

Phase Three " Implementation of triage training program"

This program were delivered throughout five weeks periods, every week involved two sessions, and every session took fifty to sixty minutes approximately during the working shift. Also the researcher using simple, brief and clear words.

Phase Four "Evaluation phase"

During this phase, the researcher evaluated NGNs knowledge and skills for the study and control groups regarding triage process. It was performed for both groups in pre, immediately and two month post program implementation by using *tool I, tool II, and tool III.*

The following are the main results yielded by the study:

There were highly statistical significant difference between the study and control groups in relation to NGNs knowledge regarding triage safety, triage process, across the room assessment, primary and secondary assessment between pre and immediately post program implementation, and between pre and two months post program implementation *P=0.001.* While there was no statistical significant difference between immediately and two months post program implementation.

There were highly statistical significant difference between the study and control groups in relation to NGNs competencies performance regarding triage safety, triage process, across the room assessment, primary and secondary assessment and communication interpersonal relationship between pre and immediately post program implementation, and between pre and two months post program implementation *P=0.001.*

Total triage knowledge score (total score 35) of the study and control groups in relation to NGNs knowledge regarding triage safety, triage process, across the room assessment, and primary and secondary assessment, it was found that there were very good knowledge for the study group immediately and two months post program implementation respectively **32.9±1.73** and **32.6±1.78**, while in control group there were poor knowledge pre, immediately and two months post program implementation respectively **13.44±1.78** and **13.52±2.04**.

Total competency score between the study group and control group in relation to NGNs practice regarding triage safety, triage process, across the room assessment, primary and secondary assessment, it was found that there were poor competent level for the study group in pre program implementation **71.46±6.43**. While there were increase competency level of the study group from poor competent to very good competency immediately and two months post program implementation respectively **135.5±4.26** and **134.42±2.41**.

The followings are the main recommendations yielded by the study:

▪ Continuing teaching training program on regular basis to improve the triage knowledge and skills of NGNs.

▪ Designing an educational handout about triage process and must be provided for NGNs to be used as a reference guide in their practice.

▪ Triaging all emergency patients presenting to the ED by a competent and skilled health care professional in a timely efficient manner.

▪ Continuing evaluation of the effectiveness of triage training program on the perceptions, practice and knowledge of triage nurses.

▪ Emphasizing on the importance of effective communication and interpersonal relationship with the patients/family/other health staff for benefits of quality of care served to emergency patients.

▪ Classifying the emergency rooms according to triage categories and urgency of the patient's condition.

▪ Further research should focus on evaluating patient outcomes following appropriate triage implementation.

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Appendix I
Protocol

Appendix II
Tools

Appendix II Tool one

All information of this questionnaire will be remain confidential: don't put your name on any page of the questionnaire. *Thank you*

"Demographic and clinical data"

1.	**Age by years:** • 20-30 years • ›30- 40 years • ›40- 50 years	( ) ( ) ( )
2.	**Marital status** • Single • Married • Divorce • Widow	( ) ( ) ( ) ( )
3.	**Educational level:** • Bachelor in Nursing • Master in Nursing • Doctorate in Nursing	( ) ( ) ( )
4.	**Job title** • Head nurse • Staff nurse	( ) ( )
5.	**Working department** • Medical • Recovery • Surgical emergency and trauma • Other **(please specify)** …………………..	( ) ( ) ( )
6.	**Years of working experience in emergency:** • 1 - < 4 years • 4 - < 5 years • 5 years and ›	( ) ( ) ( )
7.	**Working hours per week:** • 35 - < 40 hours • 40 - < 45 • 45 hours and ›	( ) ( ) ( )
8.	**Previous triage training in emergency:** • Previous education. • Practiced triage in an ED setting.	( ) ( )

Emergency University Hospital

Multiple choice questions:
Read the following statements carefully and circle the best answer.

1. Triage principles

A. Ensure safety of the staff and patients prior to clinical assessment and treatment

1.	Which of the following emergency action principles should you implement first at the scene of an emergency department?
	A. Do a primary assessment.
	B. Do a secondary assessment.
	C. Call for help.
	D. Survey the scene.
2.	Effective triage systems aim to promote patient safety by:
	A. Accurate initial assessment.
	B. Prioritizing of patients according to severity.
	C. Immediate intervention to patients with life threatening.
	D. All of the above.
3.	Triage nurse is responsible for the following prior to triage assessment:
	A. Patient safety.
	B. Environmental safety.
	C. Safety of the staff.
	D. None of the above.
	E. A,B,C

B. Triage process

4.	All patients presenting to the emergency department should be triaged on arrival according to their urgency as.
	A. Immediately life threatening (Resuscitation).
	B. Imminently life threatening (Emergency).
	C. Potentially life threatening (Urgent).
	D. Potentially serious (Semi urgent).
	E. Less urgent (Non urgent).
	F. A,B,C,D,E.

Emergency University Hospital

Multiple choice questions: **Read the following statements carefully and circle the best answer.**	
5.	**Which one of the following is the best definition of triage:** A. Dynamic process involving continuous assessment and reassessment. B. The check for immediate life-threatening conditions. C. Something that tells you about how he or she is feeling. D. A,B.
6.	**All patients presenting to the emergency department will be triaged on arrival by an appropriately skilled.** A. Health care professional B. Physician C. Nurse D. All of the above.
7.	**Patient with an obstructed airway and cardiac arrest should be allocated to** A. Category 1 (immediately life threatening). B. Category 2 (imminently life threatening). C. Category 3 (potentially life threatening). D. Category 4 (potentially serious).
8.	**Triage assessment should take the following time.** A. 5-10 min. B. 15-20 min. C. 2-5 min. D. 20-30 min.
9.	**Conditions are threat to life and need immediate intervention take the following colour.** A. Red colour. B. Green colour. C. Black colour. D. White colour.

Multiple choice questions:

Read the following statements carefully and circle the best answer.

2. Across the room assessment

10.	**The purpose of the across the room assessment is to.**
	A. Identify obvious life threatening condition.
	B. Monitoring changes in the victim's condition.
	C. Assess the scene for hazardous conditions.
	D. All of the above
11.	**Across the room assessment include the following.**
	A. Observation of the patient's appearance.
	B. Assess work of breathing.
	C. Assess circulation to the skin.
	D. A,B,C.

3. Primary Assessment.

12.	**Why should you do a primary assessment in every emergency department?**
	A. Because it will protect you from legal liability.
	B. To identify potentially life threatening conditions.
	C. To protect the victim from dangers at the scene.
	D. All of the above
13.	**What is your main concern during the primary assessment?**
	A. Identifying life-threatening problems.
	B. Identifying all injuries or medical problems.
	C. Monitoring changes in the victim's condition.
	D. Establishing baseline vital signs and all of the above.
14.	**All of the following are signs of airway obstruction in an unconscious patient include the following except:**
	A. Obvious trauma or blood.
	B. Noisy breathing, such as snoring, bubbling.
	C. Extremely shallow or absent breathing.
	D. Dilated, fixed pupil.

Multiple choice questions: **Read the following statements carefully and circle the best answer.**	
15.	**There are 5 components to the primary assessment, beginning with.** A. Assessing the patient's mental status. B. Assessing the patient's airway. C. Forming a general impression. D. Evaluating the patient's circulation
16.	**Primary assessment should be performed** A. After the secondary assessment. B. Within 30 minutes for each patient. C. After airlifting the patient to a tertiary centre. D. Within 2-5minutes for each patient
17.	**Primary assessment should include:** A. Airway. B. Breathing. C. Circulation. D. All of the above.
18.	**The assessment of the patient's mental status or responsiveness includes using the ....scale** A. AVPU. B. ABC. C. SAMPLE. D. BP/ DOC
19.	**Altered mental status is best defined as a patient who.** A. Is unresponsive. B. Cannot speak properly. C. Cannot tell you what days it is. D. Is not alert or responsive to surrounding.
20.	**Cervical spine stabilization is done during the assessment of.** A. Airway. B. Breathing. C. Circulation. D. Disability.

| | **Multiple choice questions:** |
	Read the following statements carefully and circle the best answer.
21.	**When checking a person's eyes, you notice larger than normal pupils. The pupils are said to be** A. Constricted. B. Dilated. C. Unequal. D. Unresponsive.
22.	**The normal breathing rate for an adult at rest is** A. 5 to 10 breaths per minute. B. 12 to 20 breaths per minute. C. 16 to 24 breaths per minute. D. 20 to 32 breaths per minute.
23.	**AVPU (Alert, Verbal stimuli, Painful stimuli, Unresponsive) is deals with.** A. Rapid neurological evaluation. B. Rapid cardiovascular evaluation. C. Triage. D. Mass disaster.
24.	**Which of the following scale used to assessment of pain at triage.** A. AVPU B. SAMPLE C. PQRST D. All of the above
25.	**When assessing circulation for a responsive adult patient, you should assess the** A. Distal pulse. B. Carotid pulse C. The redial pulse on one side of the body. D. The redial pulse on both sides of the body.

4. Secondary assessment and focused assessment

26.	The purpose of the secondary assessment is to
	A. Find injuries that are not immediately life-threatening.
	B. Determine if the victim is bleeding severely.
	C. Assess the scene for hazardous conditions.
	D. Find out if the victim has medical insurance.
27.	Which of the following steps should you include in the secondary assessment?
	A. Interviewing the victim.
	B. Doing a head-to-toe examination.
	C. Looking for hazards around the victim.
	D. All of the above.
28.	Which of the following techniques would you use in performing a head to toe examination?
	A. Visually inspect the entire body, starting with the head.
	B. Gently run your hands over each arm and leg to feel fractures.
	C. Ask the victim to take a deep breath and exhale.
	D. A, B,C
29.	Secondary triage is most similar to:
	A. Primary assessment.
	B. General assessment.
	C. Secondary assessment/focused assessment.
	D. Revised trauma score.
30.	Which of the following conditions would you discover in a secondary assessment?
	A. Cardiac arrest.
	B. Open fracture with severe bleeding.
	C. Allergies to bee stings and penicillin.
	D. All of the above

Multiple choice questions: **Read the following statements carefully and circle the best answer.**	
31.	**Which of the following is the pulse point most frequently used to determine pulse rate and quality during the secondary assessment?** A. Radial artery. B. Temporal artery. C. Carotid artery. D. Popliteal artery.
32.	**In a SAMPLE history, the letter M represents.** A. Medical signs and symptoms B. Allergies C. Medications D. Medical history
33.	**The review of systems and head to toe assessment, include:** A. Cardiovascular assessment. B. Head, ears, nose, eyes, and throat assessment. C. Neurological assessment. D. All of the above.
34.	**Which of the following scale used to obtain the history of present condition** A. AVPU B. SAMPLE C. PQRST D. PEARL
35.	**Focused assessment meaning that :** A. Identifying life-threatening problems. B. Establishing baseline vital signs. C. Detail assessment of any area or system that has an abnormality or injury. D. All of the above.

Tool Two

Nurse's Practice Observational Checklist" For Primary and Secondary survey Applied In Emergency Hospital

Patient assessment		Done		Not done
		Competent	Incompetent	
1. Triage principles				
A.	**Ensure safety of the staff and patients prior to clinical assessment and treatment.**			
	Patient Safety			
1.	Ensure the safety of the patient prior to triage assessment and treatment.			
2.	Apply all emergency department policy and procedures for dealing with aggressive behavior of patient at triage.			
3.	Rapid identification of deterioration of patients for example, adequate visibility of waiting area.			
4.	Ensure provision of emergency equipment (bag-valve mask and oxygen supply) is available at triage.			
	Triage Nurse safety			
5.	Ensure the safety of the staff prior to triage assessment and treatment.			
6.	Recognize and manage violent and aggressive behavior appropriately.			
	Environmental safety			
7.	Ensure safety of scene prior to triage assessment.			
8.	Recognize environmental hazards e.g. toxic substances, chemical, biological and radiological hazards and blood.			
9.	Apply appropriate universal standard precautions when potential exposure to blood or body fluids.			
10.	Identify obstacles to rapid patient movement e.g. wheelchairs, trolleys blocking doorways.			

	Patient assessment	Done		Not done
		Competent	Incompetent	
B.	**Triage process**			
1.	Perform triage process for all patients presenting to the emergency department.			
2.	A. Initiate triage system according to their urgency as immediately life threatening, imminently life threatening, potentially life threatening, potentially serious and less urgent categories. • Conditions are threat to life and immediate aggressive intervention **(take red colour)**. • The patient's condition is serious and threat to life if not treated within ten minutes of arrival in ED. **(take orange colour)**. • Conditions that could potentially progress to a serious problem requiring emergency intervention. **(take green colour)**. • The patient's condition may deteriorate if assessment and treatment is not commenced within one hour of arrival in ED. **(take blue colour)** • Conditions that may be acute but non-urgent. **(take white colour)**.			
3.	Prioritize care needs for all patients.			
4.	Assess and reassess the patients chief complain and onset of symptom, take a brief history and assessment risk factors for serious illness or injuries such as: • Age > 65 years . • Mechanism of injury such as penetrating injury, ejection from a vehicle. • Co-morbidities e.g. cardiovascular disease, renal diseases, immuno-compromised, poisoning or respiratory disease. • The presence of a rash may also alert to the possibility of serious illness such as anaphylaxis.			
5.	Perform triage process in a timely and efficient manner.			
6.	Re- triaged patients in waiting area every 30 min to ensure patients' status has not worsened.			

	Patient assessment	Done		Not done
		Competent	Incompetent	

7.	Triage documentation.
	
	  ▪ Time of arrival
	  ▪ Patient number, age
	  ▪ Date and time of triage assessment
	  ▪ Patient personal data
	  ▪ Current medications.
	  ▪ Diagnostic procedure initiated.
	  ▪ Assessment of pain.
	  ▪ Initial triage category and treatment area allocation
	  ▪ Airway, breathing, circulation, and risk factors
	  ▪ Chief presenting complain
	  ▪ Limited relevant history.
	  ▪ Re triage category and reason for change.
	  ▪ Signature of nurse.			

	2. Across the room assessment			

	Identify obvious life threatening condition through:
	
	  ▪ Observation of the patient's appearance.
	  ▪ Assess work of breathing.
	  ▪ Assess circulation to the skin.			

	3. Primary Assessment.			
A	• **Assess Airway and cervical spine stability.**			
1.	Ensure open airway through head tilt chin lift maneuver or jaw thrust if neck injury is suspected.			
2.	Assess the airway for partial or complete occlusion. (unable to speak, cyanosis, using accessory muscles, intercostals retraction).			
3.	Initiate interventions to remove any foreign object from the patient's airway.			
4.	Assess cervical spine for injury (neck pain, numbness, loss of movement and sensation).			
5.	Ensure appropriate immobilization and stabilization of the neck and spinal cord.			
B	• **Assess Breathing**			
1.	Check breathing by look, listen, and feel for 10 sec.			
2.	Expose chest and observe chest wall movement.			
3.	Assess breathing for rate and rhythm (with effort, tachypnea, bradypnea, apnea, shallow, deep breathing).			
4.	Initiate interventions to maintain spontaneous breathing.			

	Patient assessment	Done		Not done
		Competent	Incompetent	
C	• **Assessment of Circulation**			
1.	Assessment circulation for (dysrhythmia, pulse characteristics, skin condition, temperature, blood pressure, capillary refill, bleeding).			
2.	Start CPR if necessary			
3.	Initiate interventions to maintain adequate circulation.			
4.	Control life-threatening hemorrhage with direct pressure.			
5.	Check the patients for shock manifestations and treat it.			
D	• **Assessment level of Disability**			
1.	Assess the patient's disability by using **AVPU** framework ❖ **A**lert ❖ **V**erbal stimuli ❖ **P**ainful stimuli ❖ **U**nresponsive			
2.	Assess the patient's level of consciousness by using Glasgow Coma Scale **(GCS):** ❖ A GCS score of ≤ 8 may indicate severe coma. ❖ A GCS score of 9-12 is moderate coma. ❖ A GCS score of ≥ 13 is defines minor coma. ❖ A GCS score of 15 is normal			
3.	Assess the pupils for abnormal finding by using **PEARL** (**P**upils **E**qual, And **R**ound, **R**egular in size, **R**eactive properly to **L**ight)			
4.	Initiate interventions for altered neurologic status.			
E	• **Exposure &Environment control& Evaluate.**			
1.	Expose the patient's clothes to allow adequate examination.			
2.	Environmental control to prevent heat loss.			
3.	Evaluate and move onto secondary survey.			

	Patient assessment	Done		Not Done
		Competent	Incompetent	
	4. Secondary Assessment.			
F	**Full Set of Vital Signs.** 1. Obtaining a complete set of vital signs 2. Cardiac monitor, perform ECG. 3. Pulse oximeter 4. Urinary catheter if not contraindicated, urinalysis. 5. Gastric tube' 6. Obtain blood and urine for laboratory studies.			

G	**Give Comfort Measures**
	
	1. Provide verbal reassurance.
	2. Assessment of pain by using mnemonic OPQRST (onset, provocation, quality, region/ radiation, severity, timing).
	3. Administration of analgesia as ordered.
	4. Assessment patient for relief of pain by using Visual Analogue Scale (VAS):
	5. Use a 100 mm line (0- 10)
	6. Patient is asked to mark their level of pain on the line
	    0 -------------------------------- 10
	  No pain Sever pain
	
	  ❖ 0= Relaxed and comfortable
	  ❖ 1-3= Mild pain
	  ❖ 4-6= Moderate pain
	  ❖ 7-10= Severe discomfort/pain			

H A.	**History, Head to toe assessment (focused assessment)** **Obtain the history of the present conditions using (SAMPLE) scale.** **S** – Signs and symptoms **A** – Allergies **M**– Medications **P** – Past medical history relevant to chief complaint. **L** – Last meal **E** – Events leading up to the incident.			

	Patient assessment	Done		Not Done
		Competent	Incompetent	
B.	**Head to toe assessment** <mark>*(focused assessment)*</mark> **Perform** detail head to toe assessment of any area or system that has an abnormality or injury for **DCAP-BTLS** (Deformity/Contusion/ Crepitus /Abrasion Puncture Bruising/Bleeding, Tenderness Laceration Swelling.			
	• **Head and face** 1. Inspect and palpate skull (anterior and posterior), face and neck for DCAP-BTLS. 2. Check eyes for: equality and, responsiveness of pupils, movement and size of pupils, foreign bodies, discoloration, contact lenses. 3. Check nose and ears for: foreign bodies, fluid, and blood. 4. Assess oral mucus membrane for colour, hydration, inflammation and bleeding. 5. Recheck mouth for potential airway obstructions.			
	• **Chest** 1. Inspect and palpate for DCAP-BTLS, scars, implanted devices (pacemakers), medication patches, chest wall movement, asymmetry and accessory muscle use. 2. Inspect and palpate for signs of discomfort, asymmetry and air leak from any wound. 3. Auscultation breath sound and heart sound.			
	• **Abdomen** 1. Inspect and palpate for DCAP-BTLS, scars, diaphragmatic breathing and distention 2. Palpation for all four quadrants, tenderness, masses and rigidity.			
	• **Pelvic/ Genitourinary.** 1. Inspect and palpate for DCAP-BTLS, asymmetry, sacral edema. 2. Palpate and gently compress lateral pelvic for tenderness, crepitus or instability.			
	• **Shoulder and Extremities.** 1. Inspect and palpate for DCAP-BTLS, asymmetry, skin color, capillary refill, edema, and equality of distal pulses. 2. Assess sensory and motor function as indicated.			

	Patient assessment	Done		Not done
		Competent	Incompetent	
!	**Inspect posterior surface** 1. Maintain cervical spine stabilization and support injured extremities while the patient is log-rolled. 2. Inspect posterior surfaces for wounds, deformities, pain and ecchymosis. 3. Palpate posterior surfaces for tenderness and deformities.			

Tool Three: **Nurse's Communication and interpersonal relationships Observational checklist**

Communication and interpersonal relationship		Done		Not Done
		Competent	Incompetent	
1.	Create triage environment of warmth and acceptance.			
2.	Provide an introduction by addressing the patient by name and introducing self and role.			
3.	Be aware of nonverbal cues that are both sent and received (eye contact, facial expression, body language, use of **hearing** to listen for a cough, hoarseness, use of **touch** to assess skin temperature and moisture, **smell** of ketones, alcohol, or infection.			
4.	Explain purpose of interaction.			
5.	Possesses the ability to communicate clearly and effectively with nurses and other members of the hospital team.			
6.	Use question carefully and appropriately.			
7.	Ask one question at a time and allow suffient time to answer.			
8.	Adjust the amount and quality of time for communication.			
9.	Uses good listening skills to understand and assess a patient's injury and communicates in an open and responsible, professional manner.			
10.	Encourage the patient to ask for clarification at any time during the communication.			
11.	Make fast strong decision making skills when the emergency room fills up quickly.			
12.	Communicate verbally and writing all information concerning the patient care status.			
13.	Focus on understanding the patient and providing feedback.			

Nurse's Communication and interpersonal relationships
Observational checklist

Communication and interpersonal relationship		Done		Not Done
		Competent	Incompetent	
14.	Summarizes with patient what was discussed during the interaction.			
15.	Demonstrates interest, caring in dealing with the patients and relatives.			
16.	Clarifies unclear, illegible, or non-specific physician orders prior to implementation.			
17.	Utilizes resources available to communicate with hearing/sight impaired individuals.			
18.	Participates in the process of patient education, discharge instructions, and preparation of the patient/significant other for discharge or transfer.			
19.	Cooperates with staff and promote good interpersonal communication skills.			
20.	Maintain and document legibly all required reports and records.			

Appendix III

Triage Program

Appendix III

Triage Training Program for Newly Graduated Nurses Working In Emergency Hospital

General objectives

At the end of this program the newly graduated nurses will be able to triage emergency patients based on assessment findings of the patient's condition and severity of illness or injury.

Intended Learning Outcomes:-

Knowledge and understanding

- Identify the meaning of triage in emergency department.
- List the importance of triage.
- Discuss basic principles of triage.
- Describe categories of triage.
- List the qualifications of triage nurse.
- Explain how effective communication among nurses, patients, and family members can facilitate triage process.

Intellectual skills

- Classify life threatening conditions in emergency department.
- Prioritize emergency patients according to severity of illness or injury.
- Communicate effectively with the patient and families members .

<div align="center">**Appendix III**</div>

Professional and practical skills

- Assess the patients conditions and identify obvious life threatening conditions.

- Perform prompt and effective resuscitation for seriously ill or injured patients.

- Demonstrate technical skills in performing primary and secondary assessment techniques.

General and transferable skills

- Communicate effectively with patients and their families.

- Demonstrate decision-making skills in emergency situations.

- Develop leadership skills.

Content of the triage program

1. **Theoretical component:**

- Definition of triage
- Importance of triage.
- Principles of triage.
- Triage process.

Appendix III

- Triage safety.

- Triage categories.

- Importance of across the room assessment

- Component of primary assessment.

- Component of secondary and focused assessment

2. Practical and training component:

- Prioritize patients and allocate to the most appropriate treatment area.
- Steps of performing the primary assessment techniques.
- Steps of performing the secondary and focused assessment techniques.

Educational triage training program was composed of 10 sessions (theoretical and practical - training sessions) program was implemented for 5 weeks periods, 2 sessions per week, the duration of each sessions was one hours.

Appendix III

Triage Training Program for Newly Graduated Nurses Working In Emergency Hospital

Session Title	Objectives	Content	Session Duration	Teaching Method	Audiovisual Aids	Evaluation
1ˢᵗ session: Introduction about triage in emergency department.	**At the end of this session Triage Nurses will be able to:** • Identify the meaning of triage in emergency department. • List the importance of triage. • Describe different types of triage system. • Discuss basic principles of triage.	**Theoretical Content** **Overview of triage in emergency department** • Definitions of triage. • Importance of triage. • Types of triage system. • Principles of triage. **(booklet, page, 4 -6)**	60 Minutes	Interactive lecture + Group discussion + Brain storming	• Slide presentation	**Theoretical Evaluation** Oral questions
		Practical Content				**Practical Evaluation**

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Appendix III

Triage Training Program for Newly Graduated Nurses Working In Emergency Hospital

Session Title	Objectives	Content	Session Duration	Teaching Method	Audiovisual Aids	Evaluation
2nd session: Triage process	**At the end of this session Triage Nurses will be able to:** • Summarize the steps of triage process. • Describe 5 categories of triage system • Recognize the importance of environmental safety at triage.	<u>**Theoretical Content**</u> • Triage process. • Triage categories. • Triage safety. **(booklet, page, 7 -20)**	30 Minutes	Interactive lecture + Group discussion + Brain storming	• Slide presentation • Booklet • Role play	<u>**Theoretical Evaluation**</u> • Oral questions • Pretest and post test
	At the end of this session Triage Nurses will be able to: • Demonstrate the ability to prioritize patients according to severity of illness or injury. • Demonstrate the skills that should be used to maintain environmental safety.	<u>**Practical Content**</u> • Triage categories. • Triage safety.	30 Minutes	• Training	• Demonstration	<u>**Practical Evaluation**</u> • Re demonstration • Observation checklist

Appendix III

Triage Training Program for Newly Graduated Nurses Working In Emergency Hospital

Session Title	Objectives	Content	Session Duration	Teaching Method	Audiovisual Aids	Evaluation
3rd session: Communication	**At the end of this session Triage Nurses will be able to:** • Appreciate the importance of communication at triage. • Discuss strategies used to enhance the communication process. • Illustrate the ways of communication. • Discuss the barriers facing the health care provider while communication.	**Theoretical Content** • Importance of communication at triage. • Strategies used to enhance the communication process. • Ways of communication. • Health care provider communication barriers. **(booklet, page, 21)**	30 Minutes	Interactive lecture + Group discussion + Brain storming	• Slide presentation • Booklet • Role play	**Theoretical Evaluation** • Oral questions • Pretest and post test
Communication process	**At the end of this session Triage Nurses will be able to:** • Demonstrate communication skills. • Demonstrate strategies used to enhance the communication process.	**Practical Content** • Communication skills. • Strategies used to enhance the communication process.	30 Minutes	• Training • Video	• Demonstration	**Practical Evaluation** • Re demonstration • Observation checklist

Appendix III

Triage Training Program for Newly Graduated Nurses Working In Emergency Hospital

Session Title	Objectives	Content	Session Duration	Teaching Method	Audiovisual Aids	Evaluation
4th session: Triage nurse qualifications	**At the end of this session Triage Nurses will be able to:** • Describe / illustrate the roles of the Triage Nurse. • List the qualifications of triage nurse. • Identify the important of critical look	**Theoretical Content** • Role of the Triage Nurse • Triage nurse qualifications. • Across the room assessment **(critical look) (booklet, page, 21 -23)**	45 Minutes	Interactive lecture + Group discussion + Brain storming	• Slide presentation • Booklet	**Theoretical Evaluation** • Oral questions • Pretest and post test
Critical look	**At the end of this session Triage Nurses will be able to:** • Demonstrate the ability to identify obvious life threatening condition.	**Practical Content** • Critical look. ⇒ General appearance. ⇒ Assess breathing. ⇒ Assess circulation	15 Minutes	• Training	• Demonstration	**Practical Evaluation** • Re demonstration • Observation checklist

Appendix III

Triage Training Program for Newly Graduated Nurses Working In Emergency Hospital

Session Title	Objectives	Content	Session Duration	Teaching Method	Audiovisual Aids	Evaluation
5th session: **Primary assessment** ⇒ Airway ⇒ Breathing	**At the end of this session Triage Nurses will be able to:** • Discuss methods of assessing the airway. • State the signs and symptoms of a potential spine injury. • Discuss methods of assessing the breathing. • List the signs of inadequate breathing	<u>Theoretical Content</u> • Methods of airway assessment. • Signs and symptoms of spine injury. • Methods of breathing assessment. • Signs and symptoms of inadequate breathing. **(booklet, page, 24 -26)**	30 Minutes	Interactive lecture + Group discussion	• Slide presentation • Booklet • Role play • Simple pictures	<u>Theoretical Evaluation</u> • Oral questions • Pretest and post test
Airway assessment Breathing assessment	**At the end of this session Triage Nurses will be able to:** • Assess airway. • Demonstrate the steps in performing the head-tilt chin-lift and jaw thrust. • Assess breathing • Demonstrate how to insert an oropharyngeal airway. • Demonstrate the techniques of suctioning. • Demonstrate how to artificially ventilate the patient.	<u>Practical Content</u> • Airway assessment. • Opening the airway. • Breathing assessment. • Oropharyngeal airway insertion. • Suction • Oxygen administration	30 Minutes	• Training • Video	• Demonstration	<u>Practical Evaluation</u> • Re demonstration • Observation checklist

Appendix III

Triage Training Program for Newly Graduated Nurses Working In Emergency Hospital

Session Title	Objectives	Content	Session Duration	Teaching Method	Audiovisual Aids	Evaluation
6th session: **Primary assessment** Circulation	At the end of this session Triage Nurses will be able to: • Summarize the reasons for assessing pulse. • Describe normal and abnormal patient's skin color, temperature, and capillary refill. • Identify symptoms and signs of external bleeding.	<u>Theoretical Content</u> • Reasons for assessing pulse. • Normal and abnormal patient's skin color, temperature, and capillary refill. • Symptoms and signs of external bleeding. **(booklet, page, 27)**	30 Minutes	Interactive lecture + Group discussion	• Slide presentation • Booklet • Simple pictures	<u>Theoretical Evaluation</u> • Oral questions • Pretest and post test
Circulation assessment	At the end of this session Triage Nurses will be able to: • Assess pulse • Demonstrate the techniques for assessing the patient's skin color, temperature, and capillary refill. • Apply direct pressure over the bleeding site. • Perform prompt and effective resuscitation for seriously ill patient.	<u>Practical Content</u> • Pulse assessment. • Capillary refill, skin color, temperature assessment. • Bleeding control. • Cardiac compression	30 Minutes	• Training • Video	• Demonstration	<u>Practical Evaluation</u> • Re demonstration • Observation checklist

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Appendix III

Triage Training Program for Newly Graduated Nurses Working In Emergency Hospital

Session Title	Objectives	Content	Session Duration	Teaching Method	Audiovisual Aids	Evaluation
7th session: **Primary assessment** Neurological Assessment Environmental control	**At the end of this session Triage Nurses will be able to:** • Discuss methods of assessing altered mental status. • Aware of AVPU framework . • Describe the component of Glasgow Coma Scale. • Recognize the important of patient warm during physical examination.	Theoretical Content • Methods of assessing altered mental status. • AVPU framework • Glasgow Coma Scale • Environmental control. **(booklet, page, 28-29)**	30 Minutes	Interactive lecture + Group discussion	• Slide presentation • Booklet • Role play • Simple pictures	Theoretical Evaluation • Oral questions • Pretest and post test
Neurological Assessment	**At the end of this session Triage Nurses will be able to:** • Assess patient's mental status. • Assess the patient's disability by using mnemonic AVPU. • Assess body temperature.	Practical Content • Glasgow Coma Scale assessment. • AVPU assessment. • Body temperature.	30 Minutes	• Training • Video	• Demonstration	Practical Evaluation • Re demonstration • Observation checklist

Appendix III

Triage Training Program for Newly Graduated Nurses Working In Emergency Hospital

Session Title	Objectives	Content	Session Duration	Teaching Method	Audiovisual Aids	Evaluation
8th session: Secondary assessment	**At the end of this session Triage Nurses will be able to:** • Describe secondary assessment techniques. • Identify the components of vital signs. • Recognize pain severity scale. • Identify the components of the SAMPLE history.	<u>**Theoretical Content**</u> • Secondary assessment. • Vital Signs. • Pain • History (SAMPLE). **(booklet, page, 30-31)**	30 Minutes	Interactive lecture + Group discussion + Brain storming	• Slide presentation • Booklet • Role play • Simple pictures	<u>**Theoretical Evaluation**</u> • Oral questions • Pretest and post test
• Vital signs assessment • Pain Assessment • History	**At the end of this session Triage Nurses will be able to:** • Assess baseline vital signs. • Assess pain severity scale. • Assess SAMPLE history.	<u>**Practical Content**</u> • Vital signs assessment. • Pain scale assessment. • History (SAMPLE) assessment.	30 Minutes	• Training • Video	• Demonstration	<u>**Practical Evaluation**</u> • Re demonstration • Observation checklist

Appendix III

Triage Training Program for Newly Graduated Nurses Working In Emergency Hospital

Session Title	Objectives	Content	Session Duration	Teaching Method	Audiovisual Aids	Evaluation
9th session: Secondary assessment Head to toe assessment	At the end of this session Triage Nurses will be able to: • Discuss the components of head to toe assessment. • State the areas of the body that are evaluated during the detailed focused examination.	**Theoretical Content** ❖ Head to toe assessment. ▪ Head and face ▪ Chest ▪ Abdomen ▪ Pelvic/ Genitourinary. ▪ Shoulder, Extremities. ▪ Flank, buttocks ,thighs ▪ Posterior surface. **(booklet, page, 31-39)**	30 Minutes	Interactive lecture + Group discussion + Brain storming	• Slide presentation • Booklet • Simple pictures	**Theoretical Evaluation** • Oral questions • Pretest and post test
Head to toe assessment	At the end of this session Triage Nurses will be able to: Perform rapid assessment. 1. Assess the head. 2. Assess the neck. 3. Assess the chest. 4. Assess the abdomen. 5. Assess the pelvis. 6. Assess the extremities. 7. Assess the posterior aspect of the body.	**Practical Content** ❖ Head to toe assessment.	30 Minutes	• Training • Video	• Demonstration	**Practical Evaluation** • Re demonstration • Observation checklist

Appendix III

Triage Training Program for Newly Graduated Nurses Working In Emergency Hospital

Session Title	Objectives	Content	Session Duration	Teaching Method	Audiovisual Aids	Evaluation
10th session: Focused assessment	**At the end of this session Triage Nurses will be able to:** • Describe focused assessment techniques. • Discuss the reason for performing focused assessment. • State the areas of the body that are evaluated during the detailed focused examination.	**Theoretical Content** ❖ Focused assessment ▪ Head and face ▪ Chest ▪ Abdomen ▪ Pelvic/ Genitourinary. ▪ Shoulder, Extremities. ▪ Flank, buttocks ,thighs ▪ Posterior surface. **(booklet, page, 31-39)**	30 Minutes	Interactive lecture + Group discussion + Brain storming	• Slide presentation • Booklet • Simple pictures	**Theoretical Evaluation** • Oral questions • Pretest and post test
Focused assessment	**At the end of this session Triage Nurses will be able to:** • Demonstrate the skills involved in performing the detailed physical examination.	**Practical Content** ❖ Focused assessment ▪ Head and face ▪ Chest ▪ Abdomen ▪ Pelvic/ Genitourinary. ▪ Shoulder, Extremities. ▪ Flank, buttocks ,thighs ▪ Posterior surface.	30 Minutes	• Training • Video	• Demonstration	**Practical Evaluation** • Re demonstration • Observation checklist

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Appendix IV
English Booklet

Triage Training Program for Newly Graduated Nurses Working In Emergency

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Abbreviations

❖ ABCDE	Airway, Breathing, Circulation, Disability, Exposure
❖ AVPU	Alert, Verbal stimuli, Painful stimuli, Unresponsive
❖ ALS	Advanced Life Support
❖ ATS	Australasian Triage Scale
❖ CT	Computed Tomography
❖ CTAS	Canadian Triage and Acuity Scale
❖ CPR	Cardio Pulmonary Resuscitation
❖ DCAP-BTLS	Deformity, Contusion, Crepitus, Abrasion, Puncture, Bruising, Bleeding, Tenderness Laceration, Swelling
❖ ED	Emergency Department
❖ ESI	Emergency Severity Index
❖ GCS	Glasgow Coma Scale
❖ MCI	Mass Casualty Incidents
❖ MTS	Manchester Triage System
❖ NGNs	Newly Graduated Nurses
❖ OPQRST	Onset, Provocation, Quality, Region/ Radiation, Severity, Timing
❖ PEARL	Pupils Equal, And React to Light
❖ START	Simple Triage and Rapid Treatment
❖ TNCC	Trauma Nurse Core Course
❖ VAS	Visual Analogue Scale

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Introduction

Triage is one of the most important and challenging tasks of the emergency department (ED). Therefore triage needs to be applied in all ED. Triage is the screening of patients according to urgency of condition or complaint. An effective triage system aims to ensure that patients seeking emergency care receive appropriate attention, in a suitable location, with the requisite degree of urgency and that emergency care is initiated in response to clinical need rather than order of arrival. An effective triage system classifies patients into groups according to acuity of illness or injury and aims to ensure that the patients with life threatening illness or injury receive immediate intervention and greatest resource allocation. Triage is the first pathway to competency so improving competence of newly graduated nurses (NGNs) is a major challenge. There is a significant need for implementing triage training program for improving the competencies of NGNs working in emergency department as an important focus for quality improvement. Therefore, this study was carried out to determine the effect of implementing triage training competencies on NGNs working in emergency department at emergency hospital **(Ulrich and Krozek, 2010; Hammond, and Zimmermann, 2013).**

Definitions of triage

Triage is the process of categorizing ED patients according to their need for medical care, irrespective of their order of arrival or other factors including sex, age, socioeconomic status, insurance status, residential status, nationality, race, ethnicity or religion. Triage involves an assessment to prioritize ED patients in need of immediate care, in accordance with clinical severity and time urgency, compared with patients with non urgent illnesses who can wait longer to be seen or who need referral to a more appropriate health care setting **(Qureshi, 2010)**.

Importance of triage

❖ Rapidly identify patients with urgent, life threatening conditions.

❖ Determine the most appropriate treatment area for patients presenting to the ED.

❖ Decrease congestion in emergency treatment areas.

❖ Provide ongoing assessment of patients.

❖ Ensure that treatment is appropriately and timely.

❖ Increasing the efficiency and effectiveness of the ED.

❖ Enhancing patient and family satisfaction,

❖ Ensure that patients are treated in the order of their clinical urgency.

❖ Redistributing and reducing waiting times and admission rates.
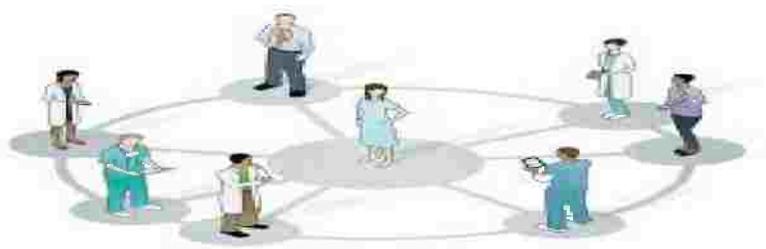
Principles of triage

Safety of persons in the waiting area

As the triage nurse is responsible for the care of patients and others in the waiting area, it is also the responsibility of the triage nurse to ensure a safe environment for those in the waiting area **(*Gerdtz and Palmer, 2009; El-Zalabany et al., 2011; Hammond, and Zimmermann, 2013*)**. This includes:

❖ Prevention of falls, for example, removal of obstacles, trolleys blocking doorways, access to wheelchairs.

❖ Rapid identification of deterioration of patients, for example, adequate visibility of waiting area.

❖ Ensure provision of emergency equipment (bag-valve mask and oxygen supply) is available at triage.

Environmental Hazards

This is the first step to safe practice at triage.

❖ Identification and appropriate interventions for the management of blood and body fluids, for example, access to gloves, hand washing facilities, protective eye wear, protective clothing, and management of body fluid spills.

❖ Identification and appropriate interventions for the management of chemical, biological and radiological hazards, for example, access to protective clothing, knowledge of decontamination procedures.

Triage process

Triage process, is the process of immediate assessment of all patients presenting to an ED and prioritization of care based on actual or potential severity of illness or injury *(Jelinek et al., 2009; El-Zalabany et al., 2011)*.

Stages of the triage process (See Figure (1) Triage Process Algorism)

Safety hazards: Is the first step to safe practice at triage. The triage nurse must ensure that emergency equipment (bag-valve mask and oxygen supply) is available at triage.

Introduce oneself and establish rapport

The process begins with initial contact between the triage nurse and patient. Triage nurse greets the patient within minutes of arrival and introduce herself by name and title. This information provides the patient with the confidence as well as establishing a rapport and developing trust. The trust gained during the initial communication encourages the patient to reveal information, making an accurate assessment which allows the nurse to make informed decisions about the patient's health.

Identification of the patient's problem

The triage nurse should listen to the information provided by the patient, or other healthcare professional. The information, including demographic data, baseline health information, current symptoms. The assessment process involves ascertaining the patient's presenting complaint while observing:

- General appearance **(quick look)**
- Airway.
- Breathing.
- Circulation.
- Disability.
- Environmental factors.
- History in relation to the presenting problem.

Gather and analyze information

Triage nurse analyze information collected in the assessment phase and decides whether the patient needs to be seen immediately or can wait safely for further assessment. Patients who require immediate care are promptly taken to the treatment area while stable patients direct to the assessment nurse.

Implement the plan of care

There are five possible triage categories that can be selected: immediate (0 minutes), very urgent (10 minutes), urgent (30 minutes), semi-urgent (60 minutes) and non-urgent (120 minutes). Nurses apply the category that is most appropriate to the urgency of the patient's condition. Once the priority is allocated the appropriate pathway of care can commence.

Monitor implementation and evaluate outcomes

Triage nurse should reassess the patient and evaluate the effectiveness of intervention and expected outcomes based on new or changing patient data. Triage documentation in emergency department should be clear, accurate, concise and include the following (*El-Zalabany et al., 2011*):

- **Time of arrival**
- **Patient number, age**
- **Date and time of triage assessment**
- **Patient personal data**
- **Current medications.**
- **Diagnostic procedure initiated.**
- **Assessment of pain.**
- **Initial triage category and treatment area allocation**
- **Airway, breathing, circulation, and risk factors**
- **Chief presenting complain**
- **Limited relevant history.**
- **Re triage category and reason for change.**
- **Signature of nurse.**

Triage process Algorithm

1. Patient presents for triage
Safety hazards are considered

2. Assess the following:
- Chief complaint
- General appearance (Critical look)
- Primary assessment
  - Airway
  - Breathing
  - Circulation
  - Disability
  - Environment
  - Limited history
  - Co- morbidities
- Secondary and focused assessment (Head to toe assessment)

Yes

2. Quick evaluation
Is the patient stable?

No

3. Differentiate predictors of poor outcome from other data collected during the triage assessment

4. Identify patients who are at high risk of physiological instability

5. Assign an appropriate ATS category in response to clinical assessment data

6. Allocate staff to patient including brief handover to allocated staff member/s

Category 1
Category 2
Category 3
Category 4
Category 5

7. ED model of care proceeds

Figure (1) Triage process Algorithm
Quated after Gerdtz and Palmer, (2009)

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Triage Documentation Tag   Figure (2)

| Part I: Patient Admission Data | Glasgow Coma Scale |

Patient No: ....   Date: .... Time of Triage.......

Patient name: ....   Age: ....

Gender   Male ....   Female ....

Chief complaint:

Diagnosis:

Past medical history:
- No past history
- COPD or lung cancer
- CVD-Stroke
- Hypertention
- Heart diseases
- Cancer
- Diabetes
- Seizures

Present history:
- Signs and symptoms................
- Allergies................
- Medication(s).................
- Past history of immunization......
- Last meal:...............
- Event prior to injury.....................

Mechanism of In
....

Front   **Back**

Injuries:
( ) Deformity ( ) Contusion ( ) Crepitus
( ) Abrasion   ( ) Bbruising ( ) Bleeding
( ) Tenderness ( ) Laceration ( ) Swelling
( ) Fracture

Glasgow Coma Scale table:

EYE RESPONSE (E)	Open Spontaneously	4
	Open to verbal command	3
	Open in response to pain	2
	No response	1
VERBAL RESPONSE (V)	Talking / Orientated	5
	Confused speech / Disorientated	4
	Inappropriate Words	3
	Incomprehensible sounds	2
	No response	1
MOTOR RESPONSE (M)	Obeys commands	6
	Localizes to pain	5
	Flexion / withdrawal	4
	Abnormal flexion	3
	Extension	2
	No response	1
	TOTAL	3-15

Time	Vital Signs				Medication	Spo2
	Temp	Pulse	Resp.	Bl. P		

Pain Assessment

0 1 2 3 4 5 6 7 8 9 10
No Symptoms   Mild Symptoms   Moderate Symptoms   Severe Symptoms

( ) No pain   ( ) Mild pain
( ) Moderate pain   ( ) Severe pain

Triage Category   ( )   ( )

( )   ( )   ( )

Signature of nurse ....

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Triage Category Form Figure (3)

Level	Airway	Breathing	Circulation	Disability
Category 1 (Immediate)	( )Obstructed	( ) Absent respiration ( ) Severe respiratory distress	( ) Absent Circulation ( ) Severe Haemodynamic compromise	( ) GCS ≤ 8
Category 2 (10 minutes)	( ) Patent	( ) Moderete Respiratory distress	( ) Moderate Haemodynamic compromise	( ) GCS 9 – 12 ( ) Severe pain (VAS 7- 10) ( ) severe alteration in vital signs ( ) Severe neurovascular compromise e.g.: - pulseless, cold - nil sensation,movement - decreased capillary refill
Category 3 (30 minutes)	( ) Patent	( ) Mild Respiratory distress	( ) Mild Haemodynamic compromise	( ) GCS ≥ 13 ( ) Moderate pain (VAS 4- 6) ( ) Alteration in vital signs ( ) Moderate Neurovascular compromise e.g. - pulse present - decreased sensation, movement - decreased capillary refill
Category 4 (1 hour)	( ) Patent	( ) No respiratory distress	( ) No Haemodynamic compromise	( ) Normal GCS ( ) Mild pain (VAS 1-3) ( ) Alteration in vital signs ( ) Mild neurovascular compromise e.g - pulse present - normal sensation - normal movement - normal capillary refill
Category 5 (2 hour)	( ) Patent	( ) No respiratory distress	( ) No Haemodynamic compromise	( ) Normal GCS ( ) Mild pain (VAS 1-3) ( ) No alteration in vital signs ( ) No neurovascular compromise

Types of triage system

Triage is a central task in an emergency department. There are various types of triage scales have been developed to classify ED patients consistently and to achieve acceptable health outcomes. Triage scales usually have 3 to 5 categories. Five level triage system are the gold standard in emergency medicine worldwide. It designed to identify the most urgent cases to ensure that they receive priority treatment, followed by the less urgent. Internationally, five-tier triage scales have been shown to be a valid and reliable method for categorizing people in hospital ED when compared with either three-tier or four-tier triage systems **(Christ et al, 2010; Engebretsen et al, 2013).**

1. Five level triage system
- Australasian Triage Scale (ATS)
- Canadian Triage and Acuity Scale (CTAS)
- Manchester Triage System (MTS)
- Emergency Severity Index (ESI).

2. Four Tier Triage System

3. Three-Tier Triage System

4. Two-Tier Triage System

Australasian Triage Scale (ATS)

The most commonly used scale is the Australian Triage Scale (ATS), which has 5 categories with their corresponding level of treatment acuity. The ATS has been employed in all Australian emergency departments since 1994. The ATS is derived from the National Triage Scale for Australasian Emergency Departments (NTS). The ATS which has 5 categories with their corresponding level of treatment acuity. The five levels are: level one- immediate life threatening, level two- Imminently life-threatening , level three-urgent, level four- semi urgent and level 5-non urgent. Based on research and expert consensus, each category lists clinical descriptors or conditions that correspond to a specific severity level. *(Lahdet et al, 2009; Christ et al, 2010)*. Objective time frames for physician evaluation are set for each classification. This time to treatment is the maximum interval a patient should expect to wait for further assessment and medical intervention. The clock starts when a patient first presents to the ED. The triage nurse selects an ATS category based on his or her response to the statement. Vital signs are obtained only if they will assist in making the triage severity decision. Performance thresholds are set for each level and indicate what percent of the time the ED must comply with time to treatment goals. Research has shown the ATS to be valid and reliable *(Lahdet et al, 2009; Christ et al, 2010; Hammond, and Zimmermann, 2013).*

Level	Category	Description	Treatment	Color	Examples
Category 1	Resuscitation	Immediately life-threatening	Immediate	Red	• Obstructed or partially obstructed; • Cardiac arrest • Severe respiratory distress • Respiratory rate < 10/ min • Pre arrest state with unstable vital signs and signs of hypo perfusion • Shock with sever haemodynamic compromise • Major trauma: sever injury to one or more body system. • GCS < 9
Category 2	Emergency	Imminently life-threatening	10 minutes	Orange	• Airway risk, severe stridor. • Moderate respiratory distress. • Moderate haemodynamic compromise. • GCS 9 – 12 • Patient report sever pain (7-10) • Severe neurovascular compromise e.g. pulseless, nil sensation , nil movement , decreased capillary refill
Category 3	Urgent	Potentially life-threatening	30 minutes	Green	• Airway patent • Mild respiratory distress. • Mild haemodynamic compromise. • Normal GCS • moderate Pain (4- 6) • Moderate neurovascular compromise e.g. pulse present decreased sensation,movement
Category 4	Semi urgent	Potentially life-serious	1 hour	Blue	• Airway patent • No respiratory distress. • No haemodynamic compromise. • GCS ≥ 13 • Mild Pain (1-3) • Mild neurovascular compromise e.g. decreased / normal sensation, movement
Category 5	Non urgent	Less urgent	2 hour	White	• Airway patent • No respiratory distress. • No haemodynamic compromise. • GCS ≥ 13 • Mild Pain (1-3) • No neurovascular compromise

Figure (4) The Australasian Triage Scale

Quated after Hammond, and Zimmermann, (2013)

Canadian Triage and Acuity Scale (CTAS)

Canadian Triage and Acuity Scale (CTAS) is a 5-level system used by ED triage nurses to classify patients. CTAS was officially included in policy throughout Canada in 1997. This scale is very similar to the ATS in terms of time-to-treatment objectives, with the exception of category 2, which is <15 minutes rather <10 minutes as in the ATS. Studies have indicated that the CTAS is valid and reliable *(Bullard et al., 2008; Trip et al, 2011).*

Level I	Resuscitation	see patient immediately
Level II	Emergency	within 15 minutes
Level III	Urgency	within 30 minutes
Level IV	Less Urgency	within 60 minutes
Level V	Non Urgency	within 120 minutes

Figure (5) Canadian Triage and Acuity Scale colour
Quated after Hammond, and Zimmermann, (2013)

Manchester Triage System (MTS

The Manchester Triage Scale (MTS) was jointly developed by the Royal College of Nursing Accident and Emergency Association and the British Association for Accident and Emergency Medicine. MTS is used in emergency departments in Great Britain and, in a modified translation, in German emergency departments. The MTS differs from both the ATS and the CTAS in that it is an algorithm based approach to decision making. The MTS provides clarity about maximum allowed waiting time for the different levels of urgency: "emergent" (red) needs instantaneous evaluation, "very urgent" (orange) needs evaluation within 10 min, "urgent" (yellow) within 60 min, "standard" (green) within 120 min and "non-urgent" (blue) can wait for up to 240 min. The MTS has predominantly been implemented throughout Europe (e.g., UK, Ireland, Portugal). The MTS is a reliable system of triage in the ED**. (Roukema et al., 2006; Gerdtz and Palmer, 2009; *Christ et al, 2010*).**

Number	Name	Colour	Max time
1	Immediate resuscitation	Red	0 minutes
2	Very urgent	Orange	10 minutes
3	Urgent	Yellow	60 minutes
4	Standard	Green	120 minutes
5	Non-urgent	Blue	240 minutes

Figure (6) Manchester Triage System (MTS)
Quated after Hammond, and Zimmermann, (2013)

Emergency Severity Index (ESI)

The Emergency Severity Index (ESI) is a five-level triage algorithm that was developed in the USA in the late 1990s. The ESI was initially implemented in two university teaching hospitals in 1999, and then refined and implemented in five additional hospitals in 2000. The ESI provides a method for categorizing ED patients by both acuity and resource needs where the trained triage nurse asks specific questions. First, patients with life-threatening conditions (ESI levels 1 and 2) are identified. Unstable patients are typically assigned to ESI triage level 1, e.g., in the presence of hemodynamic or respiratory instability. Patients with potentially life threatening symptoms, e.g., thoracic pain in acute coronary syndrome or loss of consciousness, and severe pain, or states of intoxication, are assigned to triage level 2. The remaining levels (3 to 5) are defined by the expected resource needs and vital sign. Clinical studies show that ESI also has good validity and reliability in specific groups of patients such as children and the elderly **(Lahdet et al., 2009; Christ et al., 2010; Gilboy et al., 2012).**

One benefit of the ESI is the rapid identification of patients that need immediate attention. The focus of ESI triage is rapid sorting of patients into five groups. Other benefits of the ESI include determination of which patients do not need to be seen in the main ED and those who could safely and more efficiently be seen in a fast-track or urgent care area. Additionally, ESI facilitates communication of patient acuity more effectively than the three-level triage scales **(Travers et al., 2009; Gilboy et al., 2012).**
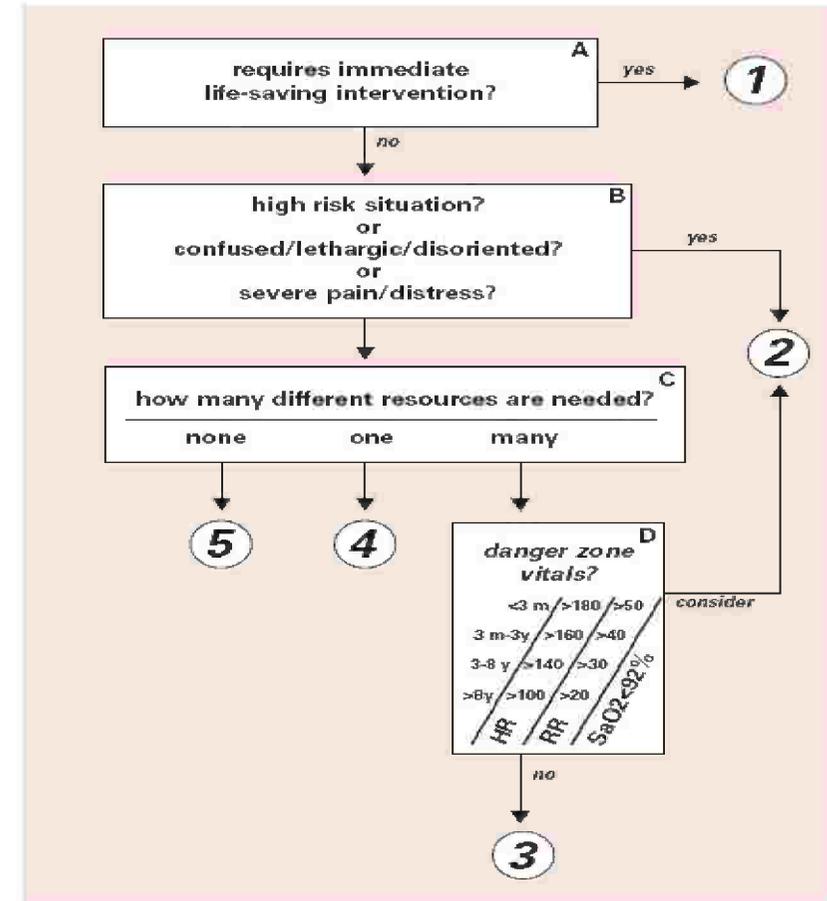
Figure (7) Triage algorithm of the Emergency Severity Index
Quated after Christ et al., (2010)

2. Four Tier Triage System

Simple triage and rapid treatment (START) has been widely used in the United States since the 1980s. START is based on the rapid assessment of patients using the following three criteria: respirations (< or > 30 per minute, perfusion (Capillary Refill > or < 2 seconds), and mental status (Follow simple commands). Patients are classified into one of four categories and are tagged and with the denoted color coded tag indicator: immediate (red), delayed (yellow), minor (green), and deceased (black) **(Christian et al, 2007; Keane and Chapman, 2009; Lee, 2011)**.
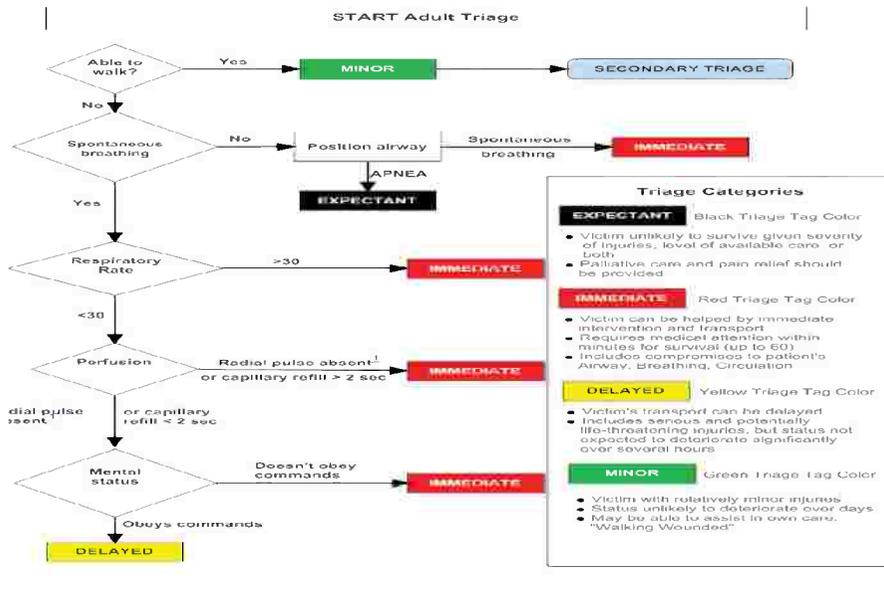
Figure (8) START algorithm
Quated after Keane and Chapman, (2009).

3. Three-Tier Triage System

It include **Emergent** category that requires treatment immediately or within 15 to 30 minutes. Examples include cardiac arrest, airway obstruction, seizure, asthma, acute bleeding or acute pain, depressed level of consciousness. **Urgent** category is utilized for serious illness or injury. Examples include a complex long bone fracture, acute psychiatric problem. **Non Urgent** category, is any condition that can wait more than 2 hours to be seen without the likelihood of deterioration. This includes problems or conditions such as simple fracture, minor laceration, rash and ear or throat pain **(Gerdtz and Palmer, 2009; Veenema, 2013).**

4. Two-Tier Triage System

With this type of system patients who require immediate care are promptly taken to treatment area. This system quickly identifies the patient who is not safe to wait. Stable patients have a patient chart initiated by the first nurse, who documents chief complaint and then directs these patients to the assessment nurse. This second nurse completes a more detailed evaluation and may initiate laboratory work and radiographic studies according to protocols. A two-tiered system has several advantages. The two-tier system's advantages include the following: A patient with a serious complaint is immediately identified. The first triage nurse will know every patient in the waiting room and can keep an eye on them .The first triage nurse can answer any questions, address changes in patient status, and perform reassessments as appropriate. The detailed assessment performed by the second triage nurse **(Hammond, and Zimmermann, 2013; Veenema, 2013).**

Qualities of a successful triage nurse include: (Salem, 2006; Hoyt, and Thomas, 2007; Hammond, and Zimmermann, 2013).

- ❖ Completion of both a cardiopulmonary resuscitation (CPR) course and Advanced Life Support (ALS) course.
- ❖ Completion of Emergency Nurse Pediatric Course (ENPC).
- ❖ Completion of Trauma Nurse Core Course (TNCC).
- ❖ Strong interpersonal skills.
- ❖ Diverse knowledge base and strong physical assessment skills
- ❖ Strong critical thinking skills and ability to make multitask
- ❖ Ability to make rapid, accurate decisions
- ❖ Ability to provide patient education throughout triage process.
- ❖ Ability to work collaboratively with interdisciplinary team members
- ❖ Ability to appropriately delegate responsibilities
- ❖ Ability to work under periods of intense stress
- ❖ Excellent communication skills.

Strategies to enhance the communication process.

- ❖ Addressing the patient by name and introducing self and role.
- ❖ Make and keep eye contact with patient at all time.
- ❖ Use language that the patient can understand.
- ❖ Be careful of what you say about the patient to others.
- ❖ Be aware of your body language.
- ❖ Speak slowly and clearly and uses good listening skills.
- ❖ Allow time for the patient to answer.
- ❖ Act and speak in a calm, confident manner.
- ❖ If the patient is hearing impaired, speak clearly.
- ❖ Focus on understanding the patient and providing feedback.

Role of the Triage Nurse

Working as a triage nurse can be mentally challenging and sometimes exhausting. A nurse performing triage must have an appropriate level of knowledge and skills to perform the triage role. It is important for staff undertaking the triage role to be aware of the potential barriers to effective communication in the triage environment and to minimize their effect on the triage process. Effective communication encourages the patient to reveal information, making an accurate assessment which allows the nurse to make informed decisions and apply the category that is most appropriate to the urgency of the patient's condition. Triage nurse should reassess the patient and evaluate the effectiveness of intervention and documentation of any treatment administered and any recommended course of action. Some patients choose to leave prior to medical assessment. If such a patient advises the triage nurse they are not waiting, the triage nurse should document this decision, as well as any advice or information given to the patient, including possible adverse outcomes. Additionally, triage nurse must maintain any information that has been provided in confidence to them. Also has a responsibility to ensure the patient's privacy is respected both during the triage assessment and while the patient waits in the waiting room (El-Zalabany et al., 2011; Ganley and Gloster, 2011; Hammond, and Zimmermann, 2013).

Across the room assessment

The triage assessment begins when the triage nurse first sees the patient, the nurse should observe closely, listen for abnormal sounds, and even be aware of any odors. In most cases an experienced triage nurse can take one look at a patient based on general appearance, decide whether immediate care is required. If at any time the triage nurse identifies a life threatening airway, breathing, or circulatory problems, the nurse initiates appropriate intervention immediately and the patient is transferred to a care area **(Hammond, and Zimmermann, 2013).**
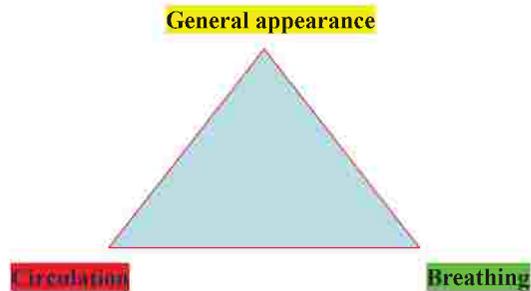
Figure (9) Critical Look
Quated after Hammond, and Zimmermann, (2013)

Primary assessment

This rapid, 1- to 2-minute evaluation is designed to identity life threatening injuries accurately, establish priorities, and provide simultaneous therapeutic interventions. It composed of "ABCDE" *A* is airway with cervical spine immobilization, *B* is breathing and ventilation, and *C* is circulation. *D* can mean assessment of neurologic disability. *E* is exposed, all areas of the body should be exposed so that injuries are not missed underneath clothing. **(Pollak et al, 2011; Vankipuram, 2012).**

Airway

- A patent airway and oxygenation are priority.
- Opening the airway through head tilt chin lift maneuver or jaw thrust if neck injury is suspected.
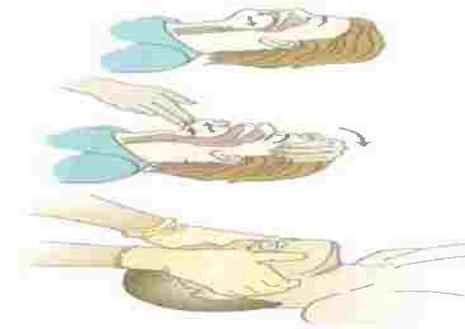
Figure (10) Head tilt chin lift maneuver and jaw thrust
Quated after Morton, and Fontaine (2013)

Primary assessment

Airway

- Ensure appropriate immobilization and stabilization of the neck and spinal cord.

- Assess cervical spine for injury (neck pain, numbness, loss of movement and sensation).

- Assess the airway for partial or complete occlusion. (unable to speak, cyanosis, using accessory muscles, intercostals retraction).

- Initiate interventions to remove any foreign object from the patient's airway such as blood, vomitus, by gentle suction.

- Nasopharyngeal and oropharyngeal airways are the simplest artificial airway adjuncts used in patients with spontaneous respirations and adequate ventilatory effort.

- Endotracheal intubation is the definitive nonsurgical airway management technique and allows for complete control of the airway.

- Mechanical ventilation with 100% oxygen is initiated immediately after intubation.

Primary assessment

Breathing

- Assess breathing for rate and rhythm (with effort, tachypnea, bradypnea, apnea, shallow, deep breathing, depth of chest movement during respiration and auscultation of breath sounds). **(Pollak et al, 2011; Vankipuram, 2012; Dewit, and Kumagai, 2013).**

- Initiate interventions to maintain spontaneous breathing e.g. application of supplemental oxygen with ventilatory assistance, effective positioning, Arterial blood gas analysis and diagnostic studies including chest x-ray and chest computed tomography (CT) imaging may be completed to assist in determining the effectiveness of specific interventions.
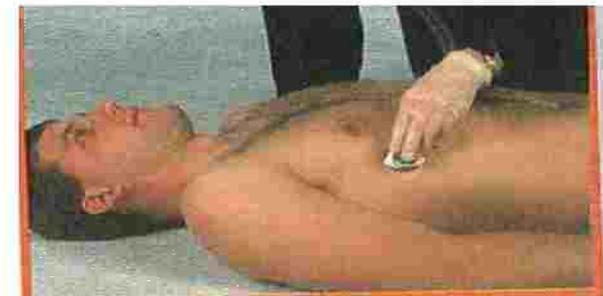
Figure (11) Auscultation of breath sounds
Quated after Pollak et al, (2011)

Primary assessment

Circulation

🔸 Assessment circulation for (dysrhythmia, pulse characteristics, skin condition, temperature, cool and clammy skin, peripheral cyanosis, blood pressure, capillary refill, bleeding) **(Carlson and Almond, 2009; Pollak et al, 2011; Vankipuram, 2012; Sole and Mosely, 2013).**

🔸 Start CPR if necessary.

Figure (12) Cardiac Compression
Quated after Morton, and Fontaine (2013)

🔸 Initiate interventions to maintain adequate circulation e.g. applying pressure to control the bleeding, replacing circulatory volume with crystalloid and blood products, and determining definitive treatment.

Primary assessment

Disability

Assess the patient's disability by using AVPU framework Alert, Verbal stimuli, Painful stimuli, Unresponsive. **(Dolan and Holt, 2008; Louis et al., 2008; Pollak et al., 2011).**

🔸 **A**lert.
🔸 **V**erbal stimuli.
🔸 **P**ainful stimuli.
🔸 **U**nresponsive.

AVPU framework

Assess the pupils for abnormal finding by using **PEARL** (**P**upils are **E**qual And **R**eact to **L**ight).

Figure (13) Assessment the pupils
Quated after Pollak et al, (2011)

Primary assessment

Disability

Assess the patient's level of consciousness by using Glasgow Coma Scale **(GCS).** The GCS uses parameters that test a patients' eye opening, best verbal response and motor response, which provide a numeric score that defines the severity of a patients' brain dysfunction and prognosis **(Dolan and Holt, 2008; Louis et al., 2008; Pollak et al., 2011; Sole, and Moseley, 2013).**

- ❖ A GCS score of ≤ 8 may indicate severe coma.
- ❖ A GCS score of 9-12 is moderate coma.
- ❖ A GCS score of ≥ 13 is defines minor coma.
- ❖ GCS score of 15 is normal.

Eye	Motor	Verbal
4 = Spontaneous	6 = Obedient	5 = Oriented
3 = To Voice	5 = Purposeful	4 = Confused
2 = To pain	4 = Withdrawal	3 = Inappropriate
1 = None	3 = Flexion	2 = Incomprehensible
	2 = Extension	1 = None
	1 = None	

Figure (14) Glasgow Coma Scale (GCS)
Quated after Gerdtz and Palmer, (2009)

Exposure

- ❖ Expose the patient's clothes to allow adequate examination.
- ❖ Environmental control to prevent heat loss.

Secondary assessment

Full set of vital signs

- ✦ Obtaining a complete set of vital signs (blood pressure BP, heart rate HR, respiratory rate RR, and temperature T) **(Louis et al, 2008; Carlson and Almond, 2009; Hammond, and Zimmermann, 2013; Sole and Mosely, 2013).**

Give Comfort Measures

- ▪ Assessment of pain by using mnemonic OPQRST (**O**nset, **P**rovocation, **Q**uality, **R**egion/ radiation, **S**everity, **T**iming).

- ▪ Assessment patient for relief of pain by using Visual Analogue Scale **(VAS).**

- ▪ Patient is asked to mark their level of pain on the line
  0 ------------------------------- 10
  No pain   Sever pain

Descriptive term	Quantitative value
Sever pain	7-10
Moderate pain	4-6
Mild pain	1-3
No pain	0

Figure (15) Numerical rating scale
Quated after Gerdtz and Palmer, (2009)

Secondary assessment

History, Head to toe assessment (focused assessment)

Obtain the history of the patient by using (SAMPLE) scale.

SAMPLE scale	
S	Signs and symptoms
A	Allergies
M	Medications
P	Past medical history
L	Last meal
E	Events leading up to the incident

Head to toe assessment (focused assessment)

- **Head, face and cervical spine**

❖ Careful examination of the head, scalp, ears, eyes, nose, and mouth for abrasions, lacerations, and contusions.
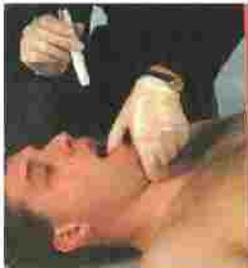
Assess the mouth, nose   **Observe, palpate head**

Figure (16)
Quated after Pollak et al, (2011)

Secondary assessment

Head to toe assessment (focused assessment)

- **Head, face and cervical spine**

❖ Examine the eyes and eyelids, checking for redness and for contact lenses.

Figure (17) Assessment the eyes
Quated after Pollak et al, (2011)

Palpate the front and back of the neck for tenderness and deformity

Figure (18) Palpate the front and back of the neck
Quated after Pollak et al, (2011)

Secondary assessment

Head to toe assessment (focused assessment)

- **Head, face and cervical spine**

❖ Look for any fluid drainage or blood, particularly around the ears and nose, otorrhoea or rhinorrhoea should be noted.

Figure (19) Assessment ear for drainage or blood
Quated after Pollak et al, (2011)

Secondary assessment

Head to toe assessment (focused assessment)

- **Head, face and cervical spine**

❖ Check for foreign objects and/or blood in the anterior chamber of the eye. Look for bruising or discoloration around the eyes (raccoon eyes) or behind the ears (Battle's sign), these signs may be associated with head trauma.

Figure (20) Assessment ears (Battle's sign)
Quated after Pollak et al, (2011)

Recheck mouth for potential airway obstructions.
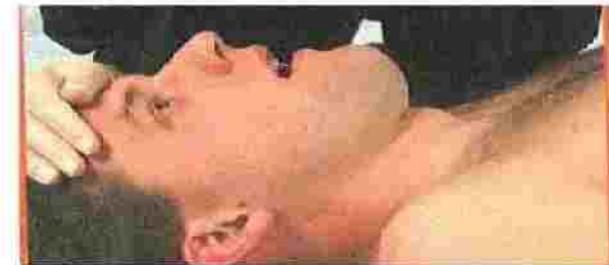
Figure (21) Assessment mouth
Quated after Pollak et al, (2011)

Secondary assessment

Head to toe assessment (focused assessment)

- **Chest**

❖ Inspect, visualize, and palpate over the chest area for injury or signs of trauma, including bruising, tenderness, or swelling. Watch for both sides of the chest to rise and fall together with normal breathing.

❖ Observe for abnormal breathing signs, including retractions (when the skin pulls in around the ribs during inspiration) or paradoxical motion (when only one section of the chest rises on inspiration while another area of the chest falls).

❖ Auscultation breath sound and heart sound.

Listen to anterior breath sound   **Listen to posterior breath sound**

Figure (22)
Quated after Pollak et al, (2011)

Head to toe assessment (focused assessment)

- **Abdomen**

❖ The abdomen should be palpate both the front and back and examined for any obvious injury, distension, rigidity, guarding, contusions, scars and bowel sounds.

❖ Palpation for all four quadrants, tenderness, masses and rigidity.

Figure (23) Palpate the abdomen
Quated after Pollak et al, (2011)

Secondary assessment

Head to toe assessment (focused assessment)

- **Pelvis and genitalia**

❖ Inspect and palpate for DCAP-BTLS (Deformity, Contusion, Crepitus, Abrasion, Puncture, Bruising, Bleeding, Tenderness Laceration, Swelling.

❖ Palpate and gently compress lateral pelvic for pain, tenderness, instability, and crepitus, all may indicate a fractured pelvis and the potential for shock.

Figure (24) Compress the pelvic from the sides
Quated after Pollak et al, (2011)

Secondary assessment

Head to toe assessment (focused assessment)

- **Extremities**

- Carefully inspect each extremities for any signs of trauma and using the DCAP-BTLS method.

- Evaluate the distal circulation, sensation, and movement. Check the distal pulses on the foot and check circulation. Evaluate the skin color in the hands or feet. For motor function, ask the patient to wiggle his her fingers or toes. An inability to move a single extremity can be the result of a bone, muscle, or nerve injury. An inability to move several extremities may be a sign of a brain abnormality or spinal cord injury. Also evaluate sensory function in the extremity by asking the patient to his or her eyes. Gently squeeze or pinch a toe, and ask the patient to identify what you are doing. The inability to feel sensation the extremity may indicate a local nerve injury. Inability to feel in several extremities may a sign of a spinal cord injury.

- Both arms and legs should be examined for contusion or deformity. Each should be assessed for pain, pallor, paraesthesia and paralysis.

Figure (25) inspect the extremity
Quated after Pollak et al, (2011)

Secondary assessment

Head to toe assessment (focused assessment)

- **Inspect posterior body**

❖ Inspect posterior surfaces for tenderness, wounds, deformities, pain and ecchymosis.

❖ Palpate posterior surfaces for tenderness, deformities and look under the patient's clothing for obvious injuries, including bruising and bleeding.

Figure (26) inspect the back
Quated after Pollak et al, (2011)

Thank you

Appendix V
Arabic Book

Appendix VI

Comparison between two groups pre, post, and two months post program regarding new graduated nurses' knowledge about triage safety.

Item		Study group N= 50						Control group N= 25						Significance test		
		Pre		Post		After 2m		Pre		Post		After 2m		P1	P2	P3
		N	%	N	%	N	%	N	%	N	%	N	%			
1.Triage principles																
A. Triage safety																
• First emergency action should you implement	Correct	22	44	49	98	48	96	15	60	15	60	14	56	0.19	<0.001**	<0.001**
	Incorrect	28	56	1	2	2	4	10	40	10	40	11	44			
• Effective triage systems aim	Correct	6	12	45	90	45	90	0	-	2	8	3	12	0.17	<0.001**	<0.001**
	Incorrect	44	88	5	10	5	10	25	100	23	92	22	88			
• Triage nurse responsible prior to triage assessment	Correct	36	72	47	94	46	92	25	100	19	76	18	72	0.003*	0.024	0.02*
	Incorrect	14	28	3	6	4	8	0	-	6	24	7	28			

** Highly statistical significant difference (P ≤ 0.001)   * Statistical significant difference (P < 0.05)
P1= Comparing study and control group pre program implementation
P2= Comparing study and control group post program implementation
P3= Comparing study and control group two month post program implementation

Comparison between two groups pre, post, and two months post program regarding new graduated nurses' knowledge about <u>triage process</u>.

Item		Study group N= 50						Control group N= 25						Significance test		
		Pre		Post		After 2m		Pre		Post		After 2m				
		N	%	N	%	N	%	N	%	N	%	N	%	P1	P2	P3
1.Triage principles																
B. Triage process																
• All patients triaged according to urgency	Correct	31	62	48	96	46	92	15	60	9	36	9	36	0.87	<0.001**	<0.001**
	Incorrect	19	38	2	4	4	8	10	40	16	64	16	64			
• Definition of triage	Correct	14	28	47	94	46	92	12	48	11	44	11	44	0.09	<0.001**	<0.001**
	Incorrect	36	72	3	6	4	8	13	52	14	56	14	56			
• All patients triaged by	Correct	37	74	49	98	49	98	25	100	23	92	23	92	0.005	0.26	0.25
	Incorrect	13	26	1	2	1	2	0	-	2	8	2	8			
• Patient with cardiac arrest allocated to	Correct	22	44	46	92	45	90	14	56	13	52	13	52	0.33	<0.001**	<0.001**
	Incorrect	28	56	4	8	5	10	11	44	12	48	12	48			
• Triage assessment time	Correct	9	18	47	94	47	94	6	24	4	16	4	16	0.54	<0.001**	<0.001**
	Incorrect	41	82	3	6	3	6	19	76	21	84	21	84			
• Conditions threat to life take colour	Correct	24	48	46	92	46	92	19	76	19	76	18	72	0.02	0.055	0.02
	Incorrect	26	52	4	8	4	8	6	24	6	24	7	28			

** Highly statistical significant difference (P ≤ 0.001)   * Statistical significant difference (P < 0.05)
P1= Comparing study and control group pre program implementation
P2= Comparing study and control group post program implementation
P3= Comparing study and control group two month post program implementation

Comparison between two groups pre, post, and two months post program regarding new graduated nurses' knowledge about <u>across the room assessment.</u>

Item		Study group N= 50						Control group N= 25						Significance test		
		Pre		Post		After 2m		Pre		Post		After 2m				
		N	%	N	%	N	%	N	%	N	%	N	%	P1	P2	P3
2. Across the room assessment																
• Purpose of the across the room assessment	Correct	9	18	46	92	44	88	0	-	1	4	1	4	0.024	<0.001**	<0.001**
	Incorrect	41	82	4	8	6	12	25	100	24	96	24	96			
• Across the room assessment include	Correct	35	70	50	100	50	100	19	76	19	76	19	76	0.58	<0.001**	<0.001**
	Incorrect	15	30	0	-	0	-	6	24	6	24	6	24			

** Highly statistical significant difference (P ≤ 0.001)   * Statistical significant difference (P < 0.05)
P1= Comparing study and control group pre program implementation
P2= Comparing study and control group post program implementation
P3= Comparing study and control group two month post program implementation

Comparison between two groups pre, post, and two months post program regarding new graduated nurses' knowledge about <u>primary assessment</u>.

Item		Study group N= 50						Control group N= 25						Significance test		
		Pre		Post		After 2m		Pre		Post		After 2m		P1	P2	P3
		N	%	N	%	N	%	N	%	N	%	N	%			
Primary assessment																
• Why should you do a primary assessment	Correct	9	18	48	96	47	94	0	-	0	-	0	-	0.024	<0.001**	<0.001**
	Incorrect	41	82	2	4	3	6	25	100	25	100	25	100			
• Main concern during primary assessment	Correct	11	22	47	94	47	94	1	4	0	-	0	-	0.045	<0.001**	<0.001**
	Incorrect	39	78	3	6	3	6	24	96	25	100	25	100			
• Signs of airway obstruction	Correct	15	30	45	90	44	88	9	36	8	32	8	32	0.6	<0.001**	<0.001**
	Incorrect	35	70	5	10	6	12	16	64	17	68	17	68			
• 5 components to the primary assessment	Correct	39	78	47	94	47	94	21	84	22	88	22	88	0.54	0.39	0.39
	Incorrect	11	22	3	6	3	6	4	16	3	12	3	12			
• Primary assessment should be performed	Correct	15	30	46	92	46	92	0	-	0	-	0	-	0.002	<0.001**	<0.001**
	Incorrect	35	70	4	8	4	8	25	100	25	100	25	100			
• Primary assessment should include	Correct	44	88	47	94	47	94	22	88	22	88	22	88	1	0.39	0.39
	Incorrect	6	12	3	6	3	6	3	12	3	12	3	12			
• Assessment patient's mental status by using	Correct	16	32	45	90	44	88	0	-	0	-	0	-	0.001**	<0.001**	<0.001**
	Incorrect	34	68	5	10	6	12	25	100	25	100	25	100			

Cont . **Comparison between two groups pre, post, and two months post program regarding new graduated nurses' knowledge about <u>primary assessment</u>.**

Item		Study group N= 50						Control group N= 25						Significance test		
		Pre		Post		After 2m		Pre		Post		After 2m		P1	P2	P3
		N	%	N	%	N	%	N	%	N	%	N	%			
Primary assessment																
• Altered mental status is best defined as	Correct	8	16	45	90	45	90	7	28	6	24	6	24	0.22	<0.001**	<0.001**
	Incorrect	42	84	5	10	5	10	18	72	19	76	19	76			
• Cervical stabilization is done during	Correct	27	54	48	96	47	94	22	88	21	84	21	84	0.004	0.09	0.2
	Incorrect	23	46	2	4	3	6	3	12	4	16	4	16			
• When pupils larger than normal are said	Correct	42	84	48	96	48	96	25	100	25	100	25	100	0.034	0.55	0.5
	Incorrect	8	16	2	4	2	4	0	-	0	-	0	-			
• Normal breathing rate for an adult	Correct	12	24	45	90	44	88	0	-	0	-	0	-	0.008	<0.001**	<0.001**
	Incorrect	38	76	5	10	6	12	25	100	25	100	25	100			
• AVPU is deals with	Correct	24	48	47	94	45	90	4	16	3	12	3	12	0.007	<0.001**	<0.001**
	Incorrect	26	52	3	6	5	10	21	84	22	88	22	88			
• Scale used to assess pain	Correct	27	54	48	96	48	96	10	40	10	40	10	40	0.25	<0.001**	<0.001**
	Incorrect	23	46	2	4	2	4	15	60	15	60	15	60			
• When assess circulation you should assess	Correct	15	30	45	90	44	88	7	28	6	24	6	24	0.86	<0.001**	<0.001**
	Incorrect	35	70	5	10	6	12	18	72	19	76	19	76			

Comparison between two groups pre, post, and two months post program regarding new graduated nurses' knowledge about secondary assessment.

Item		Study group N= 50						Control group N= 25						Significance test		
		Pre		Post		After 2m		Pre		Post		After 2m				
		N	%	N	%	N	%	N	%	N	%	N	%	P1	P2	P3
Secondary assessment																
• The purpose of secondary assessment	Correct	7	14	50	100	50	100	5	20	4	16	4	16	0.5	<0.001**	<0.001**
	Incorrect	43	86	0	-	0	-	20	80	21	84	21	84			
• Secondary assessment include	Correct	9	18	47	94	47	94	0	-	1	4	1	4	0.024	<0.001**	<0.001**
	Incorrect	41	82	3	6	3	6	25	100	24	96	24	96			
• Techniques of head to toe examination	Correct	33	66	45	90	45	90	20	80	20	80	20	80	0.21	0.23	0.2
	Incorrect	17	34	5	10	5	10	5	20	5	20	5	20			
• Secondary triage is most similar to	Correct	25	50	50	100	49	98	13	52	12	48	12	48	0.87	<0.001**	<0.001**
	Incorrect	25	50	0	-	1	2	12	48	13	52	13	52			
• Conditions discover in a secondary assessment	Correct	5	10	46	92	45	90	5	20	5	20	5	20	0.23	<0.001**	<0.001**
	Incorrect	45	90	4	8	5	10	20	80	20	80	20	80			
• Pulse point used to determine pulse rate	Correct	9	18	47	94	46	92	0	-	0	-	0	-	0.024	<0.001**	<0.001**
	Incorrect	41	82	3	6	4	8	25	100	25	100	25	100			
• In a SAMPLE history, the letter M represents	Correct	30	60	47	94	46	92	11	44	10	40	10	40	0.19	<0.001**	<0.001**
	Incorrect	20	40	3	6	4	8	14	56	15	60	15	60			

Comparison between two groups pre, post, and two months post program regarding new graduated nurses' knowledge about secondary assessment.

Item		Study group N= 50						Control group N= 25						Significance test		
		Pre		Post		After 2m		Pre		Post		After 2m		P1	P2	P3
		N	%	N	%	N	%	N	%	N	%	N	%			
Secondary assessment																
• Head to toe assessment include	Correct	29	58	46	92	46	92	16	64	19	76	19	76	0.62	0.055	0.055
	Incorrect	21	42	4	8	4	8	9	36	6	24	6	24			
• Scale used to obtain history	Correct	9	18	46	92	46	92	0	-	0	-	0	-	0.024	<0.001**	<0.001**
	Incorrect	41	82	4	8	4	8	25	100	25	100	25	100			
• Focused assessment meaning	Correct	7	14	46	92	45	90	0	-	1	4	1	4	0.09	<0.001**	<0.001**
	Incorrect	43	86	4	8	5	10	25	100	24	96	24	96			

** Highly statistical significant difference (P ≤ 0.001)   * Statistical significant difference (P < 0.05)
P1= Comparing study and control group pre program implementation
P2= Comparing study and control group post program implementation
P3= Comparing study and control group two month post program implementation

Comparison between two groups pre, post, and two months post program regarding new graduated nurses' practice about triage safety.

Item		Study group N= 50						Control group N= 25						Significance test		
		Pre		Post		After 2m		Pre		Post		After 2m		P1	P2	P3
		N	%	N	%	N	%	N	%	N	%	N	%			
Triage principle																
A. Triage safety																
Patient safety																
• Ensure the safety of the patient	Competent	0	-	48	96	47	94	1	4	0	-	0	-	0.36	<0.001**	<0.001**
	In competent	43	86	2	4	3	6	21	84	21	84	22	88			
	Not done	7	14	0	-	0	-	3	12	4	16	3	12			
• Apply all ED policy and procedures	Competent	1	2	45	90	45	90	2	8	0	-	0	-	<0.001**	<0.001**	<0.001**
	In competent	49	98	5	10	5	10	15	60	13	52	15	60			
	Not done	0	-	0	-	0	-	8	32	12	48	10	40			
• Rapid identify of deterioration of patients	Competent	1	2	43	86	42	84	3	12	0	-	0	-	<0.001**	<0.001**	<0.001**
	In competent	47	94	7	14	8	16	14	56	14	56	14	56			
	Not done	2	4	0	-	0	-	8	32	11	44	11	44			
• Ensure provision of emergency equipment	Competent	9	18	49	98	48	96	3	12	1	4	1	4	0.03	<0.001**	<0.001**
	In competent	39	78	1	2	2	4	16	64	18	72	18	72			
	Not done	2	4	0	-	0	-	6	24	6	24	6	24			

Cont.:- **Comparison between two groups pre, post, and two months post program regarding new graduated nurses' <u>practice about triage safety.</u>**

Item		Study group N= 50						Control group N= 25						Significance test		
		Pre		Post		After 2m		Pre		Post		After 2m				
		N	%	N	%	N	%	N	%	N	%	N	%	P1	P2	P3
Triage nurse safety																
• Ensure the safety of the staff	Competent	1	2	45	90	42	84	6	24	0	-	0	-	0.005	<0.001**	<0.001**
	In competent	49	98	5	10	8	16	19	76	6	24	6	24			
	Not done	0	-	0	-	0		0	-	19	76	19	76			
• Recognize aggressive behavior	Competent	7	14.	43	86	43	86	4	16	1	4	1	4	0.025	<0.001**	<0.001**
	In competent	41	82	7	14	7	14	15	60	15	60	15	60			
	Not done	2	4	0	-	0	-	6	24	9	36	9	36			
Environmental safety																
• Ensure safety of scene	Competent	1	2	48	96	46	92	2	8	1	4	1	4	0.34	<0.001**	<0.001**
	In competent	47	94	2	4	4	8	21	84	21	84	21	84			
	Not done	2	4	0	-	0		2	8	3	12	3	12			
• Recognize environmental hazards	Competent	0	-	45	90	45	90	4	16	0	-	0	-	<0.001**	<0.001**	<0.001**
	In competent	49	98	5	10	5	10	12	48	12	48	13	52			
	Not done	1	2	0	-	0	-	9	36	13	52	12	48			
• Apply universal standard precautions	Competent	2	4	46	92	44	88	1	4	0	-	0	-	0.025	<0.001**	<0.001**
	In competent	47	94	4	8	6	12	19	76	20	80	20	80			
	Not done	1	2	0	-	0		5	20	5	20	5	20			
• Identify obstacles to patient movement	Competent	1	2	44	88	44	88	5	20	3	12	3	12	<0.001**	<0.001**	<0.001**
	In competent	49	98	6	12	6	12	13	52	15	60	15	60			
	Not done	0	-	0	-	0	-	7	28	7	28	7	28			

Comparison between two groups pre, post, and two months post program regarding new graduated nurses' <u>practice about triage process.</u>

Item		Study group N= 50						Control group N= 25						Significance test		
		Pre		Post		After 2m		Pre		Post		After 2m		P1	P2	P3
		N	%	N	%	N	%	N	%	N	%	N	%			
Triage process																
Perform triage process for all patients	Competent	0	-	48	96	47	94	0	-	0	-	0	-	0.036	<0.001**	<0.001**
	In competent	38	76	2	4	3	6	13	52	12	48	12	48			
	Not done	12	24	0	-	0	-	12	48	13	52	13	52			
Initiate triage according to urgency	Competent	1	2	49	98	48	96	0	-	0	-	0	-	0.009	<0.001**	<0.001**
	In competent	4	8	1	2	2	4	9	36	11	44	11	44			
	Not done	45	90	0	-	0		16	64	14	56	14	56			
Prioritize care needs for all patients	Competent	0	-	45	90	44	88	0	-	0	-	0	-	0.37	<0.001**	<0.001**
	In competent	37	74	5	10	6	12	16	64	20	80	20	80			
	Not done	13	26	0	-	0		9	36	5	20	5	20			
Assess and reassess chief complain	Competent	0	-	47	94	46	92	0	-	0	-	0	-	<0.001**	<0.001**	<0.001**
	In competent	47	94	3	6	4	8	14	56	21	84	22	88			
	Not done	3	6	0	-	0	-	11	44	4	16	3	12			
Perform triage process in a timely manner	Competent	0	-	45	90	43	86	0	-	0	-	0	-	0.011	<0.001**	<0.001**
	In competent	43	86	5	10	7	14	15	60	20	80	20	80			
	Not done	7	14	0	-	0	-	10	40	5	20	5	20			
Re- triaged patients in waiting area	Competent	0	-	40	80	40	80	0	-	0	-	0	-	<0.001**	<0.001**	<0.001**
	In competent	45	90	10	20	10	20	12	48	13	52	13	52			
	Not done	5	10	0	-	0	-	13	52	12	48	12	48			
Triage documentation	Competent	0	-	50	100	50	100	0	-	0	-	0	-	0.55	<0.001**	<0.001**
	In competent	48	96	0	-	0	-	25	100	24	96	24	96			
	Not done	2	4	0	-	0	-	0	-	1	4	1	4			

Comparison between two groups pre, post, and two months post program regarding new graduated nurses' practice about across the room assessment.

Item		Study group N= 50						Control group N= 25						Significance test		
		Pre		Post		After 2m		Pre		Post		After 2m				
		N	%	N	%	N	%	N	%	N	%	N	%	P1	P2	P3
2. Across the room assessment																
• Identify obvious life threatening condition	Competent	0	-	47	94	46	92	0	-	0	-	0	-	0.33	<0.001**	<0.001**
	In competent	48	96	3	6	4	8	22	88	23	92	23	92			
	Not done	2	4	0	-	0	-	3	12	2	8	2	8			

** Highly statistical significant difference (P ≤ 0.001)
P1= Comparing study and control group pre program implementation
P2= Comparing study and control group post program implementation
P3= Comparing study and control group two month post program implementation

Comparison between two groups pre, post, and two months post program regarding new graduated nurses' practice about primary assessment.

Item		Study group N= 50						Control group N= 25						Significance test		
		Pre		Post		After 2m		Pre		Post		After 2m		P1	P2	P3
		N	%	N	%	N	%	N	%	N	%	N	%			
3. Primary assessment																
Airway																
• Ensure open airway	Competent	9	18	46	92	43	86	2	8	2	8	2	8	0.2	<0.001**	<0.001**
	In competent	41	82	4	8	7	14	22	88	23	92	23	92			
	Not done	0	-	0	-	0	-	1	4	0	-	0	-			
• Assess the airway	Competent	2	4	45	90	45	90	7	28	1	4	1	4	<0.001**	<0.001**	<0.001**
	In competent	48	96	5	10	5	10	12	48	19	76	19	76			
	Not done	0	-	0	-	0	-	6	24	5	20	5	20			
• Initiate interventions to remove foreign object	Competent	1	2	43	86	43	86	0	-	0	-	0	-	0.012	<0.001**	<0.001**
	In competent	49	98	7	14	7	14	21	84	23	92	23	92			
	Not done	0	-	0	-	0	-	4	16	2	8	2	8			
• Assess cervical spine for injury	Competent	0	-	42	84	42	84	1	4	0	-	0	-	0.003	<0.001**	<0.001**
	In competent	49	98	8	16	8	16	18	72	18	72	19	76			
	Not done	1	2	0	-	0	-	6	24	7	28	6	24			
• Ensure stabilization of the neck and spinal cord	Competent	1	2	46	92	45	90	3	12	0	-	0	-	0.026	<0.001**	<0.001**
	In competent	46	92	4	8	5	10	17	68	20	80	20	80			
	Not done	3	6	0	-	0	-	5	20	5	20	5	20			

Cont. **comparison between two groups pre, post, and two months post program regarding new graduated nurses' practice about primary assessment.**

Item		Study group N= 50						Control group N= 25						Significance test		
		Pre		Post		After 2m		Pre		Post		After 2m		P1	P2	P3
		N	%	N	%	N	%	N	%	N	%	N	%			
3. Primary assessment																
B*reathing*																
• Check breathing	Competent	5	10	44	88	43	86	4	16	0	-	0	-	0.26	<0.001**	<0.001**
	In competent	45	90	6	12	7	14	20	80	25	100	25	100			
	Not done	0	-	0	-	0	-	1	4	0	-	0	-			
• Expose chest and observe chest wall movement	Competent	1	2	46	92	45	90	3	12	1	4	1	4	0.004	<0.001**	<0.001**
	In competent	46	92	4	8	5	10	15	60	24	96	24	96			
	Not done	3	6	0	-	0	-	7	28	0	-	0	-			
• Assess breathing for rate and rhythm	Competent	0	-	47	94	46	92	1	4	1	4	1	4	0.003	<0.001**	<0.001**
	In competent	46	92	3	6	4	8	15	60	23	92	23	92			
	Not done	4	8	0	-	0	-	9	36	1	4	1	4			
• Initiate interventions	Competent	0	-	46	92	46	92	0	-	0	-	0	-	<0.001**	<0.001**	<0.001**
	In competent	50	100	4	8	4	8	11	44	15	60	15	60			
	Not done	0	-	0	1	0	-	14	56	10	40	10	40			

Cont. comparison between two groups pre, post, and two months post program regarding new graduated nurses' practice about primary assessment.

Item		Study group N= 50						Control group N= 25						Significance test		
		Pre		Post		After 2m		Pre		Post		After 2m				
		N	%	N	%	N	%	N	%	N	%	N	%	P1	P2	P3
3. Primary assessment																
Circulation																
• Assessment circulation	Competent	0	-	48	96	48	96	0	-	0	-	0	-	0.06	<0.001**	<0.001**
	In competent	47	94	2	4	2	4	20	80	24	96	24	96			
	Not done	3	6	0	-	0	-	5	20	1	4	1	4			
• Start CPR	Competent	6	12	45	90	44	88	1	4	0	-	0	-	<0.001**	<0.001**	<0.001**
	In competent	44	88	5	10	6	12	15	60	18	72	18	72			
	Not done	0	-	0	-	0	-	9	36	7	28	7	28			
• Initiate interventions	Competent	0	-	46	92	46	92	0	-	0	-	0	-	0.001**	<0.001**	<0.001**
	In competent	49	98	4	8	4	8	18	72	21	84	21	84			
	Not done	1	2	0	-	0	-	7	28	4	16	4	16			
• Control hemorrhage	Competent	0	-	45	90	45	90	0	-	0	-	0	-	<0.001**	<0.001**	<0.001**
	In competent	49	98	5	10	5	10	17	68	21	84	21	84			
	Not done	1	2	0	-	0	-	8	32	4	16	4	16			
• Check patients for shock manifestations	Competent	16	32	44	88	44	88	1	4	0	-	0	-	0.001**	<0.001**	<0.001**
	In competent	33	66	6	12	6	12	18	72	20	80	20	80			
	Not done	1	2	0	-	0	-	6	24	5	20	5	20			

Cont. comparison between two groups pre, post, and two months post program regarding new graduated nurses' practice about primary assessment.

Item		Study group N= 50						Control group N= 25						Significance test		
		Pre		Post		After 2m		Pre		Post		After 2m				
		N	%	N	%	N	%	N	%	N	%	N	%	P1	P2	P3
3. Primary assessment																
***D**isability*																
• Assess the patient's disability	Competent	0	-	50	100	50	100	3	12	3	12	3	12	0.04	<0.001**	<0.001**
	In competent	48	96	0	-	0	-	21	84	22	88	22	88			
	Not done	2	4	0	-	0	-	1	4	0	-	0	-			
• Assess the patient's level of consciousness	Competent	20	40	48	96	47	94	5	20	3	12	3	12	0.13	<0.001**	<0.001**
	In competent	27	54	2	4	3	6	16	64	17	68	17	68			
	Not done	3	6	0	-	0	-	4	16	5	20	5	20			
• Assess the pupils for abnormal finding	Competent	2	4	47	94	47	94	1	4	1	4	1	4	<0.001**	<0.001**	<0.001**
	In competent	15	30	3	6	3	6	22	88	22	88	22	88			
	Not done	33	66	0	-	0	-	2	8	2	8	2	8			
• Initiate interventions	Competent	1	2	49	98	49	98	1	4	1	4	1	4	0.57	<0.001**	<0.001**
	In competent	46	92	1	2	1	2	21	84	22	88	22	88			
	Not done	3	6	0	-	0	-	3	12	2	8	2	8			

** Highly statistical significant difference (P ≤ 0.001)   * Statistical significant difference (P < 0.05)
P1= Comparing study and control group pre program implementation
P2= Comparing study and control group post program implementation
P3= Comparing study and control group two month post program implementation

Cont. comparison between two groups pre, post, and two months post program regarding new graduated <u>nurses' practice</u> about primary assessment.

Item		Study group N= 50						Control group N= 25						Significance test		
		Pre		Post		After 2m		Pre		Post		After 2m				
		N	%	N	%	N	%	N	%	N	%	N	%	P1	P2	P3
3. Primary assessment																
Exposure																
• Expose the patient's clothes	Competent	1	2	41	82	40	80	0	-	0	-	0	-	<0.001**	<0.001**	<0.001**
	In competent	48	96	9	18	10	20	12	48	20	80	20	80			
	Not done	1	2	0	-	0	-	13	52	5	20	5	20			
• Environment control	Competent	2	4	32	64	32	64	0	-	0	-	0	-	<0.001**	<0.001**	<0.001**
	In competent	47	94	18	36	18	36	13	52	20	80	20	80			
	Not done	1	2	0	-	0	-	12	48	5	20	5	20			
• Evaluate the patient	Competent	1	2	42	84	42	84	0	-	0	-	0	-	<0.001**	<0.001**	<0.001**
	In competent	48	96	8	16	8	16	16	64	20	80	20	80			
	Not done	1	2	0	-	0	-	9	36	5	20	5	20			

** Highly statistical significant difference (P ≤ 0.001)   * Statistical significant difference (P < 0.05)
P1= Comparing study and control group pre program implementation
P2= Comparing study and control group post program implementation
P3= Comparing study and control group two month post program implementation

Comparison between two groups pre, post, and two months post program regarding new graduated nurses' practice about secondary assessment.

Item		Study group N= 50						Control group N= 25						Significance test		
		Pre		Post		After 2m		Pre		Post		After 2m				
		N	%	N	%	N	%	N	%	N	%	N	%	P1	P2	P3
4. secondary assessment																
Full set of vital signs																
• Obtaining a complete set of vital signs.	Competent	29	58	45	90	45	90	21	84	3	12	3	12	0.024	<0.001**	<0.001**
	In competent	21	42	5	10	5	10	4	16	22	88	22	88			
	Not done	0	-	0	-	0	-	0	-	0	-	0	-			
• Cardiac monitor, perform ECG	Competent	37	74	45	90	45	90	15	60	4	16	4	16	0.2	<0.001**	<0.001**
	In competent	13	26	5	10	5	10	10	40	21	84	21	84			
	Not done	0	-	0	-	0	-	0	-	0	-	0	-			
• Pulse oximeter	Competent	36	72	46	92	46	92	15	60	1	4	1	4	0.5	<0.001**	<0.001**
	In competent	12	24	4	8	4	8	9	36	24	96	24	96			
	Not done	2	4	0	-	0	-	1	4	0	-	0	-			
• Urinary catheter	Competent	50	100	46	92	46	92	20	80	0	-	0	-	0.005	<0.001**	<0.001**
	In competent	0	-	4	8	4	8	4	16	25	100	25	100			
	Not done	0	-	0	-	0	-	1	4	0	-	0	-			
• Gastric tube'	Competent	49	98	48	96	48	96	21	84	0	-	0	-	0.04	<0.001**	<0.001**
	In competent	1	2	2	4	0	-	4	16	25	100	25	100			
	Not done	0	-	0	-	2	4	0	-	0	-	0	-			
• Obtain blood for laboratory studies	Competent	46	92	46	92	46	92	20	80	0	-	0	-	0.15	<0.001**	<0.001**
	In competent	3	6	4	8	4	8	5	20	25	100	25	100			
	Not done	1	2	0	-	0	-	0	-	0	-	0	-			

Cont. comparison between two groups pre, post, and two months post program regarding new graduated nurses' practice about secondary assessment.

Item			Study group N= 50						Control group N= 25						Significance test		
			Pre		Post		After 2m		Pre		Post		After 2m				
			N	%	N	%	N	%	N	%	N	%	N	%	P1	P2	P3
4. secondary assessment																	
Give comfort measures																	
• Provide verbal reassurance	Competent		3	6	49	98	49	98	7	28	2	8	2	8	0.025	<0.001**	<0.001**
	In competent		44	88	1	2	1	2	16	64	20	80	20	80			
	Not done		3	6	0	-	0	-	2	8	3	12	3	12			
• Assessment of pain	Competent		1	2	45	90	44	88	5	20	2	8	2	8	0.015	<0.001**	<0.001**
	In competent		42	84	5	10	6	12	15	60	22	88	22	88			
	Not done		7	14	0	-	0		5	20	1	4	1	4			
• Administration of analgesia	Competent		25	50	48	96	48	96	2	8	0	-	0	-	<0.001	<0.001**	<0.001**
	In competent		23	46	2	4	2	4	17	68	25	100	25	100			
	Not done		2	4	0	-	0		6	24	0	-	0	-			
• Assessment patient for relief of pain	Competent		3	6	47	94	47	94	6	24	0	-	0	-	0.06	<0.001**	<0.001**
	In competent		27	54	3	6	3	6	9	36	23	92	23	92			
	Not done		20	40	0	-	0	-	10	40	2	8	2	8			
• Use a 100 mm line	Competent		1	2	44	88	44	88	3	12	0	-	0	-	0.18	<0.001**	<0.001**
	In competent		29	58	6	12	6	12	14	56	21	84	21	84			
	Not done		20	40	0	-	0	-	8	32	4	16	4	16			
• Ask patient to mark their level of pain	Competent		2	4	47	94	47	94	2	8	0	-	0	-	0.6	<0.001**	<0.001**
	In competent		27	54	3	6	3	6	11	44	18	72	18	72			
	Not done		21	42	0	-	0	-	12	48	7	28	7	28			

Cont. comparison between two groups pre, post, and two months post program regarding new graduated nurses' practice about secondary assessment.

Item		Study group N= 50						Control group N= 25						Significance test		
		Pre		Post		After 2m		Pre		Post		After 2m		P1	P2	P3
		N	%	N	%	N	%	N	%	N	%	N	%			
4. secondary assessment																
History, Head to toe assessment																
A. Obtain the history using (SAMPLE) scale	Competent	0	-	50	100	46	92	0	-	0	-	0	-	<0.001**	<0.001**	<0.001**
	In competent	46	92	0	-	4	8	14	56	22	88	22	88			
	Not done	4	8	0	-	0		11	44	3	12	3	12			
B. Perform detail head to toe assessment	Competent	0	-	50	100	50	100	1	4	0	-	0	-	0.018	<0.001**	<0.001**
	In competent	45	90	0	-	0	-	16	64	15	60	15	60			
	Not done	5	10	0	-	0	-	8	32	10	40	10	40			

** Highly statistical significant difference (P ≤ 0.001)   * Statistical significant difference (P < 0.05)
P1= Comparing study and control group pre program implementation
P2= Comparing study and control group post program implementation
P3= Comparing study and control group two month post program implementation

Cont. comparison between two groups pre, post, and two months post program regarding new graduated nurses' practice about secondary assessment.

Item		Study group N= 50						Control group N= 25						Significance test		
		Pre		Post		After 2m		Pre		Post		After 2m				
		N	%	N	%	N	%	N	%	N	%	N	%	P1	P2	P3
4. secondary assessment (head to toe assessment)																
Head and face																
• Inspect and palpate skull	Competent	0	-	45	90	44	88	2	8	1	4	1	4	0.002**	<0.001**	<0.001**
	In competent	44	88	5	10	6	12	13	52	16	64	16	64			
	Not done	6	12	0	-	0	-	10	40	8	32	8	32			
• Check eyes	Competent	0	-	43	86	43	86	0	-	1	4	1	4	0.004**	<0.001**	<0.001**
	In competent	43	86	7	14	7	14	14	56	16	64	16	64			
	Not done	7	14	0	-	0	-	11	44	8	32	8	32			
• Check nose and ears	Competent	0	-	42	84	42	84	0	-	1	4	1	4	<0.001**	<0.001**	<0.001**
	In competent	45	90	8	16	8	16	12	48	16	64	16	64			
	Not done	5	10	0	-	0	-	13	52	8	32	8	32			
• Assess oral mucus membrane	Competent	0	-	46	92	46	92	2	8	1	4	1	4	0.001**	<0.001**	<0.001**
	In competent	42	84	4	8	4	8	11	44	16	64	16	64			
	Not done	8	16	0	-	0	-	12	48	8	32	8	32			
• Recheck mouth for airway obstructions	Competent	0	-	45	90	45	90	1	4	1	4	1	4	0.006**	<0.001**	<0.001**
	In competent	41	82	5	10	5	10	12	48	16	64	16	64			
	Not done	9	18	0	-	0	-	12	48	8	32	8	32			

Cont. comparison between two groups pre, post, and two months post program regarding new graduated nurses' practice about secondary assessment.

Item		Study group N= 50						Control group N= 25						Significance test		
		Pre		Post		After 2m		Pre		Post		After 2m				
		N	%	N	%	N	%	N	%	N	%	N	%	P1	P2	P3
4. secondary assessment (head to toe assessment)																
Chest																
• Inspect and palpate for DCAP-BTLS	Competent	0	-	44	88	42	84	1	4	1	4	1	4	0.12	<0.001**	<0.001**
	In competent	47	94	6	12	8	16	20	80	20	80	20	80			
	Not done	3	6	0	-	0	-	4	16	4	8	4	8			
• Inspect and palpate for signs of discomfort	Competent	0	-	41	82	41	82	2	8	1	4	1	4	<0.001**	<0.001**	<0.001**
	In competent	45	90	9	18	9	18	10	40	11	44	11	44			
	Not done	5	10	0	-	0	-	13	52	13	52	13	52			
• Auscultation breath sound	Competent	1	2	37	74	37	74	1	4	1	4	1	4	<0.001**	<0.001**	<0.001**
	In competent	41	82	13	26	13	26	7	28	10	40	10	40			
	Not done	8	16	0	-	0	-	17	68	14	56	14	56			
Abdomen																
• Inspect and palpate for DCAP-BTLS	Competent	0	-	47	94	47	94	0	-	0	-	0	-	<0.001**	<0.001**	<0.001**
	In competent	48	96	3	6	3	6	15	60	16	64	16	64			
	Not done	2	4	0	-	0	-	10	40	9	36	9	36			
• Palpation for all four quadrant	Competent	0	-	45	90	45	90	1	4	0	-	0	-	<0.001**	<0.001**	<0.001**
	In competent	43	86	5	10	5	10	8	32	16	64	16	64			
	Not done	7	14	0	-	0	-	16	64	9	36	9	36			

Cont. comparison between two groups pre, post, and two months post program regarding new graduated nurses' practice about secondary assessment.

Item		Study group N= 50						Control group N= 25						Significance test		
		Pre		Post		After 2m		Pre		Post		After 2m		P1	P2	P3
		N	%	N	%	N	%	N	%	N	%	N	%			
4. secondary assessment (head to toe assessment)																
Pelvic/ Genitourinary																
• Inspect and palpate for DCAP-BTLS	Competent	0	-	46	92	46	92	0	-	0	-	0	-	0.037	<0.001**	<0.001**
	In competent	48	96	4	8	4	8	20	80	20	80	20	80			
	Not done	2	4	0	-	0	-	5	20	5	20	5	20			
• Palpate pelvic for tenderness, crepitus	Competent	0	-	42	84	42	84	1	4	1	4	1	4	0.001**	<0.001**	<0.001**
	In competent	43	86	8	16	8	16	11	44	19	76	19	76			
	Not done	7	14	0	-	0	-	13	52	5	20	5	20			
Shoulder and Extremities																
• Inspect and palpate for DCAP-BTLS	Competent	0	-	45	90	45	90	0	-	0	-	0	-	<0.001**	<0.001**	<0.001**
	In competent	49	98	5	10	5	10	13	52	18	72	19	76			
	Not done	1	2	0	-	0	-	12	48	7	28	6	24			
• Assess sensory and motor function	Competent	0	-	42	84	42	84	0	-	0	-	0	-	0.005**	<0.001**	<0.001**
	In competent	44	88	8	16	8	16	15	60	18	72	19	76			
	Not done	6	12	0	-	0	-	10	40	7	28	6	24			

Cont. comparison between two groups pre, post, and two months post program regarding new graduated nurses' practice about secondary assessment.

Item		Study group N= 50						Control group N= 25						Significance test		
		Pre		Post		After 2m		Pre		Post		After 2m		P1	P2	P3
		N	%	N	%	N	%	N	%	N	%	N	%			
4. secondary assessment (head to toe assessment)																
Inspect posterior surface																
• Maintain cervical spine stabilization	Competent	0	-	42	84	41	82	0	-	0	-	0	-	<0.001**	<0.001**	<0.001**
	In competent	46	92	8	16	9	18	12	48	13	52	13	52			
	Not done	4	8	0	-	0	-	13	52	12	48	12	48			
• Inspect posterior surfaces	Competent	0	-	44	88	44	88	0	-	0	-	0	-	0.001**	<0.001**	<0.001**
	In competent	40	80	6	12	6	12	10	40	16	64	16	64			
	Not done	10	20	0	-	0	-	15	60	9	36	9	36			
• Palpate posterior surfaces	Competent	0	-	43	86	43	86	1	4	0	-	0	-	<0.001**	<0.001**	<0.001**
	In competent	43	86	7	14	7	14	10	40	11	44	11	44			
	Not done	7	14	0	-	0	-	14	56	14	56	14	56			

** Highly statistical significant difference (P ≤ 0.001)

Comparison between two groups pre, post, and two months post program regarding new graduated nurses' practice about communication and interpersonal relationship.

Communication and interpersonal relationship		Study group N= 50						Control group N= 25						Significance test		
		Pre		Post		After 2m		Pre		Post		After 2m				
		N	%	N	%	N	%	N	%	N	%	N	%	P1	P2	P3
Create environment of acceptance	Competent	0	-	47	94	46	92	92	-	0	-	0	-	0.039**	<0.001**	<0.001**
	In competent	41	82	3	6	4	8	8	60	16	64	17	68			
	Not done	9	18	0	-	0	-	-	40	9	36	8	32			
Introducing self and role	Competent	0	-	47	94	46	92	92	-	0	-	0	-	0.5	<0.001**	<0.001**
	In competent	30	60	3	6	4	8	8	68	18	72	18	72			
	Not done	20	40	0	-	0	-	-	32	7	28	7	28			
Be aware of nonverbal cues	Competent	0	-	47	94	44	88	88	-	0	-	0	-	1	<0.001**	<0.001**
	In competent	40	80	3	6	6	12	12	80	20	80	20	80			
	Not done	10	20	0	-	0	-	-	20	5	20	5	20			
Explain purpose of interaction	Competent	0	-	50	100	48	96	96	-	0	-	0	-	0.02	<0.001**	<0.001**
	In competent	18	36	0	-	2	4	4	64	16	64	17	68			
	Not done	32	64	0	-	0	-	-	36	9	36	8	32			
Possesses the ability to communicate clearly	Competent	0	-	49	98	48	96	96	-	0	-	0	-	0.02	<0.001**	<0.001**
	In competent	46	92	1	2	2	4	4	72	18	72	18	72			
	Not done	4	8	0	-	0	-	-	28	7	28	7	28			
Use question carefully	Competent	0	-	47	94	45	90	90	-	0	-	0	-	0.006**	<0.001**	<0.001**
	In competent	45	90	3	6	5	10	10	64	17	68	17	68			
	Not done	5	10	0	-	0	-	-	36	8	32	8	32			
Allow suffient time to answer	Competent	0	-	49	98	49	98	98	-	0	-	0	-	0.86	<0.001**	<0.001**
	In competent	35	70	1	2	1	2	2	68	17	68	17	68			
	Not done	15	30	0	-	0	-	-	32	8	32	8	32			

Cont. comparison between two groups pre, post, and two months post program regarding new graduated nurses' practice about communication and interpersonal relationship.

Communication and interpersonal relationship		Study group N= 50						Control group N= 25						Significance test		
		Pre		Post		After 2m		Pre		Post		After 2m				
		N	%	N	%	N	%	N	%	N	%	N	%	P1	P2	P3
Adjust the amount of time .	Competent	0	-	48	96	47	94	0	-	0	-	0	-	0.06	<0.001**	<0.001**
	In competent	47	94	2	4	3	6	20	80	22	88	22	88			
	Not done	3	6	0	-	0	-	5	20	3	12	3	12			
Uses good listening skills	Competent	0	-	47	94	47	94	0	-	0	-	0	-	0.35	<0.001**	<0.001**
	In competent	44	88	3	6	3	6	20	80	23	92	23	92			
	Not done	6	12	0	-	0	-	5	20	2	8	2	8			
Encourage patient to ask at any time	Competent	0	-	48	96	46	92	0	-	0	-	0	-	0.17	<0.001**	<0.001**
	In competent	30	60	2	4	4	8	19	76	18	72	18	72			
	Not done	20	40	0	-	0	-	6	24	7	28	7	28			
Make fast strong decision making skills	Competent	0	-	48	96	48	96	0	-	0	-	0	-	0.14	<0.001**	<0.001**
	In competent	43	86	2	4	2	4	18	72	18	72	18	72			
	Not done	7	14	0	-	0	-	7	28	7	28	7	28			
Communicate verbally and writing all information	Competent	0	-	47	94	46	92	0	-	0	-	0	-	0.005	<0.001**	<0.001**
	In competent	49	98	3	6	4	8	19	76	15	60	15	60			
	Not done	1	2	0	-	0	-	6	24	10	40	10	40			
Providing feedback	Competent	0	-	48	96	46	92	0	-	0	-	0	-	0.7	<0.001**	<0.001**
	In competent	34	68	2	4	4	8	16	64	16	64	16	64			
	Not done	16	32	0	-	0	-	9	36	9	36	9	36			
Summarizes what was discussed during the interaction	Competent	0	-	49	98	48	96	0	-	0	-	0	-	0.7	<0.001**	<0.001**
	In competent	34	68	1	2	2	4	18	72	18	72	18	72			
	Not done	16	32	0	-	0	-	7	28	7	28	7	28			

Cont. comparison between two groups pre, post, and two months post program regarding new graduated nurses' practice about communication and interpersonal relationship.

Communication and interpersonal relationship		Study group N= 50						Control group N= 25						Significance test		
		Pre		Post		After 2m		Pre		Post		After 2m				
		N	%	N	%	N	%	N	%	N	%	N	%	P1	P2	P3
• Demonstrates interest with the patients	Competent	0	-	48	96	47	94	0	-	0	-	0	-	0.2	<0.001**	<0.001**
	In competent	42	84	2	4	3	6	18	72	18	72	18	72			
	Not done	8	16	0	-	0	-	7	28	7	28	7	28			
• Clarifies unclear physician orders	Competent	0	-	47	94	47	94	0	-	0	-	0	-	0.06	<0.001**	<0.001**
	In competent	46	92	3	6	3	6	19	76	18	72	18	72			
	Not done	4	8	0	-	0	-	6	24	7	28	7	28			
• Utilizes resources available with hearing impaired individuals	Competent	0	-	49	98	49	98	0	-	0	-	0	-	0.001**	<0.001**	<0.001**
	In competent	5	10	1	2	1	2	11	44	11	44	11	44			
	Not done	45	90	0	-	0	-	14	56	14	56	14	56			
• Participates in the process of patient education	Competent	0	-	47	94	47	94	0	-	0	-	0	-	0.06	<0.001**	<0.001**
	In competent	47	94	3	6	3	6	20	80	20	80	20	80			
	Not done	3	6	0	-	0	-	5	20	5	20	5	20			
• Promote good communication skills	Competent	0	-	46	92	45	90	0	-	0	-	0	-	0.014	<0.001**	<0.001**
	In competent	49	98	4	8	5	10	20	80	20	80	20	80			
	Not done	1	2	0	-	0	-	5	20	5	20	5	20			
• Document all reports and records	Competent	0	-	47	94	46	92	0	-	0	-	0	-	0.09	<0.001**	<0.001**
	In competent	48	96	3	6	4	8	21	84	20	80	20	80			
	Not done	2	4	0	-	0	-	4	16	5	20	5	20			

Correlation between total knowledge score and year of experience.

Knowledge	Study group						Control group					
	Pre		Post		After 2m		Pre		Post		After 2m	
	No	%	No	%	No	%	No	%	No	%	No	%
Year of experience												
Poor												
• 1-<4years	50	100.0	.....	.....	.....	.....	24	96.0	24	96.0	24	96.0
• 4-<5years	.....	.....	.....	.....	.....	.....	1	4.0	1	4.0	1	4.0
Very Good				.....	.....	.....						
• 1-<4years	.....	.....	50	100.0	50	100.0	.....	.....	.....	.....	.....	.....
• 4-<5years	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

Correlation between total knowledge score and triage training.

Knowledge	Study group						Control group					
	Pre		Post		After 2m		Pre		Post		After 2m	
	No	%	No	%	No	%	No	%	No	%	No	%
Previous triage training in emergency department												
Poor												
Previous education	45	90.0	.....	.....	.....	.....	20	80.0	20	80.0	20	80.0
Practiced triage in ED	5	10.0	.....	.....	.....	.....	5	20.0	5	20.0	5	20.0
Very Good												
Previous education	.....	.....	45	90.0	45	90.0	.....	.....	...	.....	....	.....
Practiced triage in an ED	.....	.....	5	10.0	5	10.0	.....	.....	...	.....	....	.....

الملخص العربى

Arabic Summary

الملخص العربى

المقدمة:

يعتبر قسم الطوارئ من أهم وحدات المستشفيات، تم تصميمه لتقديم الرعاية الفورية على مدار أربع وعشرون ساعة فى اليوم للمرضى الذين يعانون من إصابات حادة وكذلك المرضى ذوى المشكلات التى تهدد الحياة. قد زاد عدد المرضى الذين يصلون إلى قسم الطوارئ خلال السنوات القليلة الماضية في جميع أنحاء العالم. وقد ادى ذلك الى الاحتياج لنظام تقييم وتصنيف المرضى وفقا لخطورة حالاتهم وهو ما يعرف بفرز أو تصنيف المرضى. ويهدف نظام الفرز الفعال أن المرضى الذين يبحثون عن الرعاية في حالات الطوارئ يتلقوا الاهتمام المناسب في المكان المناسب مع تدخل علاجي سريع وإعطائهم الأولوية في العلاج بغض النظر عن ترتيب وصولهم إلى المستشفى.

هدف الدراسة:

وقد أجريت هذه الدراسة لتحديد تأثير تطبيق كفاءات التدريب على الممرضات المتخرجات حديثا على تصنيف المرضى في مستشفى الطوارئ.

مكان الدراسة

وقد أجريت هذه الدراسة بقسم الاستقبال بمستشفى الطوارئ –جامعة المنصورة وكذلك قسم الطوارئ بمستشفى طلخا المركزى .

عينة الدراسة

مجموعة الدراسة : احتوت هذه المجموعة على كل الممرضات المتخرجات حديثا اللاتي يقدمن الرعاية المباشرة للمريض بمستشفى الطوارئ –جامعة المنصورة وكان عددهم (٥٠).

المجموعة الحاكمة : احتوت هذه المجموعة على كل الممرضات المتخرجات حديثا اللاتي يقدمن الرعاية المباشرة للمريض فى قسم الطوارئ بمستشفى طلخا المركزى وكان عددهم (٢٥).

أدوات البحث : استخدم ثلاثة أدوات لجمع المعلومات الخاصة بالدراسة

1. **الأداة الأولى: "استبيان لمعرفة طريقة تصنيف المرضى "** : تم تطويرها بواسطة الباحث واستخدمت لتقييم ممرضات الطوارئ حول تصنيف المرضى بقسم الاستقبال ، و تشتمل على أسئلة اختيار من متعدد وعددها ٣٥ سؤال وقد استخدمت هذه الأداة ثلاث مرات (قبل تنفيذ البرنامج ، ثم مباشرة لتنفيذ البرنامج ، بعد شهرين من تنفيذ البرنامج) .هذه الأداة تغطي خمسة مجالات رئيسية لطريقة تصنيف المرضى في قسم الاستقبال (تأمين المريض والبيئة المحيطة بة ، النظرة الحرجة ، طريقة التصنيف ،التقييم الاولى والثانوى).

2. **الأداة الثانية : "استمارة تقييم الممارسات التمريضية الفعلية لتصنيف المرضى"** تم انشاء هذه الأداة لقياس كفاءات ممرضات الطوارئ حول طريقة فرز المرضى في قسم الاستقبال ، وقد استخدمت هذه الأداة ثلاث مرات (قبل تنفيذ البرنامج ، ثم مباشرة لتنفيذ البرنامج ، بعد شهرين من تنفيذ البرنامج) . هذه الأداة تغطي خمسة مجالات رئيسية (تأمين المريض والبيئة المحيطة بة ، النظرة الحرجة ، طريقة التصنيف ،التقييم الاولى والثانوى).

3. **الأداة الثالثة: استمارة تقييم ممارسات التواصل الفعال** أثناء عملية الفرز وقد استخدمت هذه الأداة ثلاث مرات (قبل تنفيذ البرنامج ، ثم مباشرة لتنفيذ البرنامج ، بعد شهرين من تنفيذ البرنامج)

طريقة الدراسة

تم إجراء هذه الدراسة على أربع مراحل:

المرحلة الأولى "مرحلة التقييم" : والتي من خلالها قام الباحث بتقييم معلومات ممرضات الاستقبال عن طريقة الفرز باستخدام الأداة الأولى. وكذلك تم تقييم ممارسات وكفاءات الممرضات حول طريقة التصنيف باستخدام الأداة الثانية وأخيرا تقييم الباحث لطريقة التواصل الفعال بين المرضى وعائلاتهم والتي أجريت باستخدام الأداة الثالثة.

المرحلة الثانية : مرحلة الإعداد : خلال هذه المرحلة قام الباحث بإعداد برنامج مصمم عن طريقة الفرز لمرضى الطوارئ وعمل كتيب للفريق التمريضي وتم ترجمة الكتيب إلى اللغة العربية. وتم شرح الغرض من الدراسة لإدارة المستشفى ثم هيئة التمريض . وركز هذا البرنامج على معلومات خاصة بالفرز مثل تعريف الفرز ، أهمية الفرز ،مراحل عملية الفرز ، أنظمة الفرز ، مؤهلات

ممرضـة الفرز. بينمـا ركزت الجلسـات العمليـة علـى طريقـة التقيـيم الأولـى والثانوى لمرضـى الطوارئ ومهارات الاتصال فى قسم الاستقبال بمستشفى الطوارئ.

المرحلة الثالثة : مرحلة التنفيذ: تم تنفيذ هذا البرنامج في خمسة أسابيع بمعدل جلستين كل أسبوع وكل جلسة تستغرق من ٥٠ إلى ٦٠ دقيقة على مدار الاسبوع . وخلال كل جلسة استخدم الباحث كلمات بسيطة ، موجزة وواضحة، وتم اجراء الجزء العملي وتدريبهم عليه.

المرحلة الرابعة : مرحلة التقييم: وقد تم التقييم قبل تطبيق البرنامج ومباشرة بعد تنفيذ البرنامج وبعد مرور شهرين من التنفيذ باستخدام الأداة الأولى لتقييم معلومات ممرضات الاستقبال . واستخدام الأداة الثانية والثالثة لتقييم مهارات وممارسات ممرضات الاستقبال لتطبيق نظام الفرز للمرضى. وبمقارنة النتائج الخاصة بالممرضات قبل تنفيذ البرنامج ببعد التنفيذ مباشرة ، ومقارنته ببعد التنفيذ بشهرين لتقييم تأثير تطبيق كفاءات التدريب على الممرضات المتخرجات حديثا على تصنيف المرضى في مستشفى الطوارئ.

١. وقد أسفرت النتائج على ما يلي:

- وقد أوضحت الدراسة أن هناك فروق ذات دلالة إحصائية عالية بين المجموعتين، فيما يتعلق بمعلومات ممرضات الاستقبال حول تأمين المريض والبيئة المحيطة بة ، النظرة الحرجة ، طريقة التصنيف، التقييم الاولى والثانوى ما قبل تنفيذ البرنامج وبعد تطبيق البرنامج مباشرة وبين ما قبل تنفيذ البرنامج وبعد تطبيقه بشهرين.

- وأيضا قد تبين أن هناك فروق ذات دلالة إحصائية عالية بين المجموعتين فيما يتعلق بممارسات ممرضات الاستقبال حول تأمين المريض والبيئة المحيطة بة ، النظرة الحرجة، طريقة التصنيف ،التقييم الاولى والثانوى ما قبل تنفيذ البرنامج وبعد تطبيق البرنامج مباشرة وبين ما قبل تنفيذ البرنامج وبعد تطبيقه بشهرين.

- أوضحت الدراسة أن هناك فروق ذات دلالة إحصائية عالية بين المجموعتين فيما يتعلق بالدرجة الكلية لمعلومات ممرضات الاستقبال **(الدرجة الكلية ٣٥)**. قد وجد ان هناك تحسن فى مستوى المعرفة بالنسبة لمجموعة الدراسة في الفترة ما بعد تطبيق البرنامج مباشرة وبعد تطبيقه بشهرين على التوالى ٣٢,٩±١,٧٣ و٣٢,٦±١,٧٨. بالنسبة للمجموعة الحاكمة قد وجد ان هناك قلة فى مستوى المعرفة في الفترة ما بعد تطبيق البرنامج مباشرة وبعد تطبيقه بشهرين على التوالى ١٣,٤٤±١,٧٨ . و١٣,٥٢±٢,٠٤.

- أوضحت الدراسة أن هناك فروق ذات دلالة إحصائية عالية بين المجموعتين فيما يتعلق بالدرجة الكلية الخاصة بتقييم مهارات وكفاءات ممرضات الاستقبال **(الدرجة الكلية ١٤٠)**. قد وجد ان هناك قلة فى كفاءة التدريب بالنسبة لمجموعة الدراسة ما قبل تنفيذ البرنامج ٧١,٤٦±٦,٤٣. بينما زادت درجة الكفاءة بالنسبة لمجموعة الدراسة بعد تطبيق البرنامج مباشرة وبعد التطبيق بشهرين على التوالى ١٣٥,٥±٤,٢٦ و ١٣٤,٤٢±٢,٤١ .

التوصيات:

وفيما يلى التوصيات الرئيسية التى توصى بها الدراسة:

- تدريب ممرضات الاستقبال على كيفية تصنيف المرضى وذلك لتحسين مهارات وكفاءات الممرضات فى قسم الاستقبال باعتبارها محورا مهما لتحسين الجودة
- استخدام الكتيب الارشادى حول عملية الفرز ليتم أستخدامة كدليل أرشادى لممرضات الاستقبال.
- تصنيف جميع مرضى الاستقبال بطريقة فعالة لزيادة كفاءة وفعالية قسم الطوارئ.
- مواصلة تقييم فاعلية البرنامج التدريبى على معلومات وممارسات ممرضات الاستقبال.
- التأكيد على أهمية التواصل الفعال بين أعضاء الفريق الطبى والمرضى وعائلتهم.
- تصنيف غرف المرضى وفقا لخطورة حالاتهم .
- يجب أن نركز مزيد من البحوث على تقييم نتائج المرضى بعد تنفيذ الفرز المناسب.