Assessment of Nurses' Performance Regarding Care Of Chest Trauma Patients at Trauma Emergency Unit

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Abstract
Background: The nurse is involved with the care of the trauma patient from arrival in the emergency department to follow-up in the trauma clinic. Chest injuries can be penetrating or the blunt type, depending on the nature and severity of the causative impact**. The aim** of this study was to assess nurses' performance regarding care of Chest Trauma patients at Trauma Emergency Unit. **Design:** Descriptive research designs were utilized in this study. **Setting:** This study was carried out in the emergency trauma unit at an assuit university hospital. **A sample:** of this study were all available nurses working in the emergency trauma unit at assuit university hospital (40). (**Tools)** two main tools used in this study **Tool I: -** ⁽⁽**Nurses Knowledge Questioner**⁾⁾. **Tool II:** ⁽⁽**Nurses Practice observation checklist) Results:** the result revealed Level of nurses Knowledge regards total score that the majority of the nurses (70%) had an unsatisfactory Level total scores about chest trauma. The present study also revealed Nurses practice about chest trauma; that the majority of the nurses (95%) had an unsatisfactory. Level total scores about chest trauma. There was no a ststistical significant difference between nurses' Knowledge and practice. **The Conclusion** the majority of the nurses was having an unsatisfactory level regarding nurses' knowledge and practice. There was no a ststistical significant difference between nurses' Knowledge and practice. **Recommendations:** Regular continuous educational program plan about chest trauma Encouraging nurses to attend national and international congresses, seminars, symposia, and workshops regularly about chest trauma.

Keywords: performance, Chest Trauma, for & Trauma Emergency Unit.

Introduction

Chest trauma, the relatively sudden application of large physical forces to the chest, is a frequent cause of serious and fatal injury in present-day society. it has been estimated that 25% of fatalities due to motor vehicle accidents are due to chest trauma alone **(Crayen, 2011)** Chest injury can be either closed (blunt) or open (penetrating) injury and is further classified into primary injury and secondary injury. This classification is rather more useful while considering therapeutic and preventive strategies **(Chowdhury et al., 2014).**

Trauma nurses are involved with care of the trauma patient from arrival in the emergency department to follow-up in the trauma clinic. They respond to all Class 1 and Class 2 trauma activations and facilitate throughput of the patient from the trauma bay to diagnostic imaging and on to the intensive care unit. They perform procedures including chest tube insertion, central line insertion, arterial line insertion, and laceration repair, and act as a first assistant during trauma surgeries **(Stewart, 2014).**

The important role of the nurse in the technical administrative dimension is inherent to actions of caring and managing. Another relevant aspect is the systematization of the assistance to the patients according to the premises of advance trauma lift support (ATLS), which standardizes the health professionals' actions through the mnemonic airway, breathing, circulation, disability, exposer (ABCDE) approach. This approach makes it possible to identify and immediately treat the problems which put the patient at imminent risk of death, due to the lack of an initial diagnosis and limitation of data. Also point at the importance of the role of the nurse in articulating health professionals and in mobilizing resources for attention to the patient, this constituting a large part of their work in the ambit of management in the trauma room **(Azevedo, Scarparo, & Chaves, 2013).**

The nursing management of these injuries requires a multidisciplinary approach with 3 primary components: pain management, respiratory therapy, and mobility. and physical therapy all play significant roles in the successful management of patients with chest wall injury**(Dennis et al., 2017).**The multiple trauma patients should be treated in rapidly and depending on the biomechanics of the trauma and the anatomic region that has been reached, the severity of the event causes great damage to their vital functions and it may cause, because of delayed care, irreversible sequels and even death **(Carla, Alexandre, Silva, Oliveira, & Barros, 2018).**

Airway, breathing, and circulation should be checked in all the patients of chest trauma. Patency of the airway and the adequacy of the ventilator efforts

should be evaluated with the assessment of the integrity of the chest and the circulatory status as pericardial tampone can also cause signs and symptoms similar to tension pneumothorax. Upright positioning may be been call if there is no contraindication to it like the spinal injury. Penetrating wounds (also known as 'sucking chest wounds') require immediate coverage with an occlusive or pressure bandage made air-tight with clean plastic sheeting **(Sharma & Jindal, 2008).**

Significant

Attended cases at Trauma Unit in the assuit University Hospitals were 19,869 in 2002 and increased up to 32,699 in 2009. Out of the total cases in 8 years of study duration and According to the annual record of Assuit Hospital University 1032 of patients were admitted to the emergency trauma department during the year of 2016. And the numbers of the beds in the department are thousand forty beds Approximation (**Record of trauma emergency unit Assuit hospital)**. The nurse is involved with the care of the trauma patient from arrival in the emergency department to follow-up in the trauma clinic.so the aim of the present study is nurses' performance regarding care of Chest Trauma patients at Trauma Emergency Unit.

Aims of the study

The aim of this study was to assess the nurses' performance regarding care of Chest Trauma patients at Trauma Emergency Unit.

Hypotheses

What is nurses' performance regarding care of chest trauma (nurses knowledge and practice).

Subjects & Methods

Study design

The design of this study was a Descriptive design done to evaluate Trauma Emergency Nurse's performance with the care of Chest Trauma patients.

Study Settings

This study was conducted in the emergency trauma unit at Assuit University Hospital.

Sample size

All available nurses working in the emergency trauma unit at assuit university hospital (40) having more than one-year clinical experience and who provide direct care to the trauma patient.

Study tools

Tools were utilized to collect data in this study includes:-

Tool I: nurses Knowledge Questione

It was developed by the researcher based on the review of related literature to evaluate Trauma Emergency nurses knowledge related to care of patients with chest

trauma and guided by (**(Taylor's 2008; Morton 2014; Kowalak, 2010; Smeltzer et al., 2010).**

It compromised two parts:

Part I: (demographic Data)

It included items related to nurses' personal data of studied nurses such as Code, age, sex, marital status, current occupation, the degree of qualification, years of experience, years of experience in caring of chest trauma, attendance of related training courses, date and time of courses.

Part II :(Nurses Knowledge sheet)

It included 6 items containing **52** questions, divided into two groups of questions a group of **M.C.Q statements** which included **44** questions classified as the following; anatomy & physiology of respiratory system (**21 questions)** , Information about definition of chest trauma (**4 questions)** , mechanism and classification of chest trauma (**5 questions)** and causes and diagnosis of chest trauma (**10 questions)** , management and life-threatening situation of chest trauma. (**12 questions)** and a group of **open Questions statements** which included (**8** questions) regarding the nursing team Duties in patients with chest trauma. Nurses' responses were about what he knows about chest trauma calculated as the right answer took one score and the wrong answer took zero.

Scoring system knowledge

1. As regard nurse's knowledge, each correct answer was scored one and wrong answer was scored zero

- The total nurses answered score was summed up then converted into a percentage.
- Total nurses knowledge calculated as the following:
- All values >65% were considered satisfactory.
- All value <65% were considered unsatisfactory.

Tool II: Nurses Practice observation checklist.

It was developed by the researcher based related researcher, to assess trauma emergency nurses' practice in relation to the care of the patient with chest trauma. This tool consists of initial assessment and management regarding airway, breathing, circulation, disability, and exposure. It included five parts**:**

Part one: (Airway management)

Airway assessment and management includes (**7 items containing 74 steps)** divided into; manual airway maneuver (**3 items containing 11 steps)** (chin lift (**4 steps)**, jaw thrust (**3 steps)**, recovery position, (**4 steps))**, and Insertion of oral airway (**10 steps),** tracheal suction (**20 steps),** laryngeal mask (**15 steps),** and End tracheal tube intubation (**18 steps)**.

Part two: (Breathing management)

Breathing Assessment and management includes: (**3 items containing 41 steps)** divided into; Administration of oxygen therapy (**11 steps),** bag–

valve–mask **(10 steps),** and Chest tube insertion. **(20 steps)**

Part three: (Circulation management)

Circulation Assessment and management include: **(3 items containing 41 steps)** divided into; Assessment of shock **(7 steps),** Fluid resuscitation **(23 steps),** and Cardiopulmonary resuscitation (CPR) **(11 steps)**.

Part four: (Level of conscious)

Disability assessment, to assess level conscious using (Alert - Voice - Pain - Unresponsive) (AVPU) **(containing 8 steps)**

Part five: (Injury Exposure check list)

This checklist to evolution sign injury **(containing 8 steps)**

It was a two-point licker scale of done correctly took two scores, done incorrectly took one score and not done took zero**.**

Scoring system Practice

As regard nurse's Practice, each step checked answer was scored done correctly took two scores, done incorrectly take one score and checked (not done) was scored zero.

- The total nurse's Practice score was summed up then converted to a percentage.
- Total nurses Performance s were calculated as the following:
- All values >65% considered satisfactory Practice.
- All Values <65% considered unsatisfactory Practice.

preparatory phase

An Official permission from the faculty of nursing to conduct the study was delivered to the hospital authorities (head department of emergency trauma unit) in Assuit university hospital and approval to conduct this study was obtained.

Ethical considerations

1- The research proposal was approved from the Ethical Committee in the faculty of nursing.
2- There is no risk for nurses during the application of research.
3- The study was followed by common ethical principles in clinical research.
4- Written consent was obtained from nurses that are participated in the study, after explaining the nature and purpose of the study.
5- Confidentiality and anonymity were assured.
6- Nurses had the right to refuse to participate and or withdraw from the study without any rational any time.
7- Nurse's privacy was considered during the collection of data.
- Content validity of the developer tools was done by 5 experts in the related fields. Three assistant professors of critical care nursing from Faculty of Nursing Assuit University. Two professors of

critical care medicine from Assuit Faculty of Medicine.

Pilot study

Carried out before starting of data collection to test the feasibility and the clarity of the study tools on of the sample, the analysis of pilot study define the modification required in the tool used, and the necessary modification was done prior to data collection total of the nurses.

- **The overall reliability** of the tools was tested using (α) Cronbach's test for the pilot study results. It was found that the reliability of the tool one equal to 0.80 and the tool three equal to 0.84, which was acceptable.

1- **Implementation phase**
- Data was collected at an emergency trauma unit at Assuit University Hospital
- Data were collected during the period from August 2017 to February 2018.
- The purpose of the study was to assess the nurses' performance regarding care of chest trauma patients at trauma emergency unit
- Permission for conducting the study was taken from the head of the nurse responsible for training after explaining the purpose, the time and the place of the study. Then she informed the head nurses of emergency trauma unit to obtain cooperation.
- Nurses were informed to participate in the study according to their need. Some nurses refused to participate throughout the study phases were not mandatory. Agreement on participation in the study was taken orally from nurses.
- Many copies of the questionnaire **(Tool I)**, the observational checklist **(Tool II)**, and evaluation of the nurses' practice related to care of patients with chest trauma.
- Interview questionnaire sheet: After taking the nursing oral agreement for voluntary participation in the study, each nursing was communicated personally by the researcher to fulfill the nursing assessment sheet.
- Filled after the purpose of the study was explained to the nurse prior to answering the question using (tool one)
- An observation checklist was carried out during nurses giving care for a patient with chest trauma the researcher observed by nursing performance in the morning and the afternoon shift (tool two)

2- **Evaluating Phase**
  Each trauma nurse evaluated once by using **Tool I** (nurses Knowledge Tool) and **Tool II** (Practice Assessment Tool)

Statistical analysis:

The raw data were coded and transformed into coding sheets. The results were checked. Then, the data were entered into SPSS system files (SPSS package version 18) using a personal computer. Output drafts were checked against the revised coded data for typing and spelling mistakes. Finally, the analysis and interpretation of data were conducted.

The following statistical measures were used:

- Mean percent score was calculated for both the knowledge and Performance of nursing care offered for patients with chest trauma among the studied nurses.

- Descriptive statistics including frequency, distribution, mean, and standard deviation were used to describe different characteristics.

- The data were tested for normality using the Anderson-Darling test and for homogeneity variances prior to further statistical analysis. Categorical variables were described by number and percent (N, %), :-

 P >0.05 non-significant

 *P<0.05 significant

 **P<0.01 moderate significant

 ***P<0.001 highly significant.

Results

Table (1):- demographic characteristics of the studied nurses (No=40):

| Items	No	%
Age:		
< 20	2	5.0
20 -25	17	42.5
25 -30	19	47.5
≥ 30	2	5.0
Mean ± SD (Range)	**24.9+3.6(19-35)**	
Gender:		
Male	9	22.5
Female	31	77.5
Marital status		
Single	29	72.5
Married	11	27.5
educational level		
- Nursing Diploma	13	32.5
- Technical Institute of Nursing	27	67.5
- B.Sc. Nurses	0	00
Years of experience at the emergency department		
- < 5 years of experience	17	42.5
5 – 10 years of experience-	13	32.5
10 + years of experience-	10	25.0
Mean ± SD(range)	**5.5+3.5(1-12)**	
attendance of previous training chest trauma		
Attended	1	2.5
Not attended	39	97.5
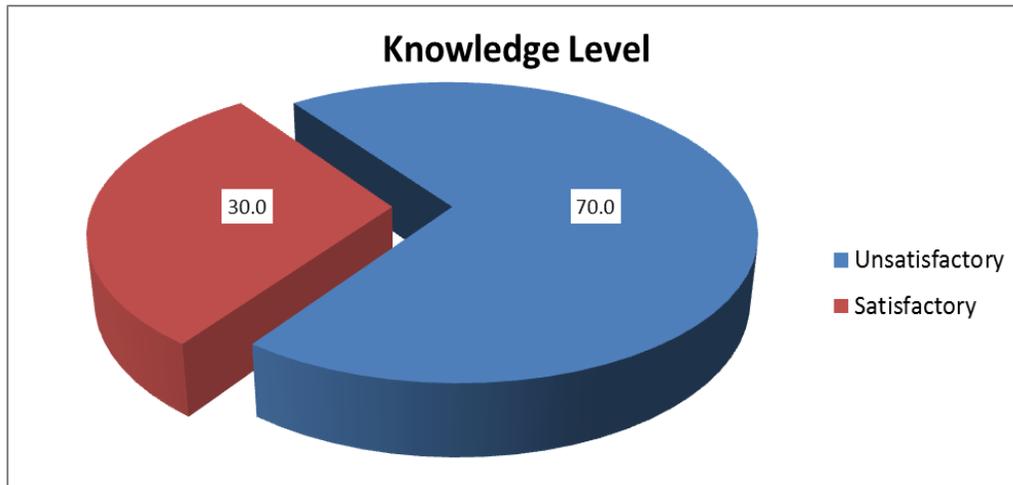
Figure (1): Level of satisfaction among Nurses' total scores of knowledge regarding chest trauma (No=40).

Table (2):- mean distribution of the Nurses' Knowledge chest trauma (No=40).

| items	Max Score	Range	Mean±SD
anatomy and physiologic of the respiratory system	18	4-16	10.95±2.88
Definition Chest Injuries	4	0-4	1.7±1.04
mechanisms and classification of chest injuries	6	1-5	3.53±1.18
causes and methods of diagnosis, signs, and symptoms of chest injuries	9	2-8	4.85±1.63
Information on methods and treatment of chest injuries	20	5-14	9.88±2.44
Total Knowledge	**57**	**18-41**	**30.9±6.14**
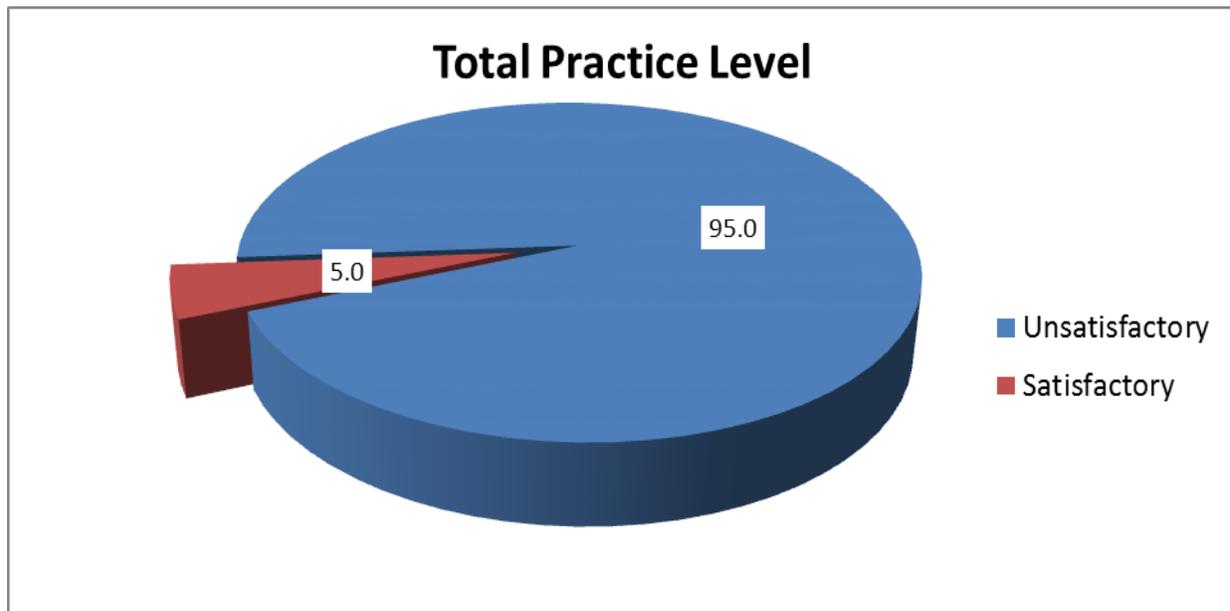
FIGURE (2): **Frequency distribution of the Nurses' in relation to the assessment of Nurses' level of practical (No=40).**

Table (3): Mean distribution of the Nurses' practice related chest trauma (No=40)

Items	Score	Range	M± SD
1- airway	148	61-85	66.3±4
1- Manual airway	22	10-14	10.1±0.63
chin lift	8	3-4	3.03±0.16
Jaw thrust	6	3-5	3.05±0.32
recovery position	8	4-5	4.03±0.16
2- oral airway insertion	20	10-14	10.75±0.71
3- tracheal suction	40	14-26	17.9±1.91
4- Intubating Laryngeal Mask Airway	30	14-15	14.05±0.22
5- Care Of Tracheal Tube Intubation	36	11-16	13.5±2.53
2- Breathing	92	35-66	48.8±7.4
Oxygen therapy	32	13-22	16.48±2.74
Suction	20	5-16	10.15±3.08
Chest tube	40	10-36	22.18±5.83
3- Circulation	112	63-82	73.33±4.03
Shock	18	10-13	10.78±0.66
Fluid	72	47-59	53.68±2.42
CPR	22	3-14	8.88±2.17
4- Technique exposer	26	14-18	14.2±0.88
5- Level of conscious(A_V_P_U)	8	3-3	3±0
total Performance	**386**	**186-242**	**205.63±11.77**

Table (4): Relationship between Nurses' Total Knowledge Level According to their demographic data (n=40).

Variable	Total Knowledge Level				P. value
	Unsatisfactory		Satisfactory		
	No	%	No	%	
Age:					
< 20	2	7.1	0	0.0	
20 -25	8	28.6	9	75.0	
25 -30	16	57.1	3	25.0	0.050*
≥ 30	2	7.1	0	0.0	
Gender:					
Male	8	28.6	1	8.3	
Female	20	71.4	11	91.7	0.160
Marital status					
Single	22	78.6	7	58.3	
Married	6	21.4	5	41.7	0.189
Nurses' qualification					
Nursing Diploma	7	25.0	6	50.0	

Variable	Total Knowledge Level				P. value
	Unsatisfactory		Satisfactory		
	No	%	No	%	
Technical Institute of Nursing	21	75.0	6	50.0	0.203
B.Sc. Nurses	-	-	-	-	
Years of experience at the emergency department					
- < 5 years of experience	9	32.1	8	66.7	
- 5 – 10 years of experience-	12	42.9	1	8.3	
- 10 + years of experience-	7	25.0	3	25.0	0.066
attendance of previous training course chest trauma					0.122
Attended	0	0.0	1	8.3	
Not attended	28	100.0	11	91.7	

*- Chi-square test, * Significant difference*
(N.B):- N.s (p>0.05) no significance
* p<0.05significance
**p<0.001moderate significance ***p<0.0001 high significance

Table (5): Relationship between Nurses' practice According to their demographic data (n=40).

Items	Practice Level				P. value
	Unsatisfactory		Satisfactory		
	No	%	No	%	
Age					
Less than 20	2	5.3	0	0.0	
20 -25	15	39.5	2	100.0	
25 -30	19	50.0	0	0.0	0.416
More than 30	2	5.3	0	0.0	
Gender:					
Male	9	23.7	0	0.0	0.434
Female	29	76.3	2	100.0	
Marital status					
Single	28	73.7	1	50.0	0.465
Married	10	26.3	1	50.0	
Nurses' qualification					
Nursing Diploma	12	31.6	1	50.0	
Technical Institute of Nursing	26	68.4	1	50.0	0.822
B.Sc. Nurses	-	-	-	-	
Years of experience at the emergency department					
< 5 years of experience	16	42.1	1	50.0	
5 -10 years of experience	12	31.6	1	50.0	
10 + years of experience-	10	26.3	0	0.0	0.686

Items	Practice Level				P. value
	Unsatisfactory		Satisfactory		
	No	%	No	%	
attendance of previous training course chest trauma					0.816
Attended	1	2.6	0	0.0	
Not attended	37	97.4	2	100.0	

*- Chi-square test, * Significant difference at p. value<0.05*
*(N.B):- N.s (p>0.05) no significance * p<0.05significance*
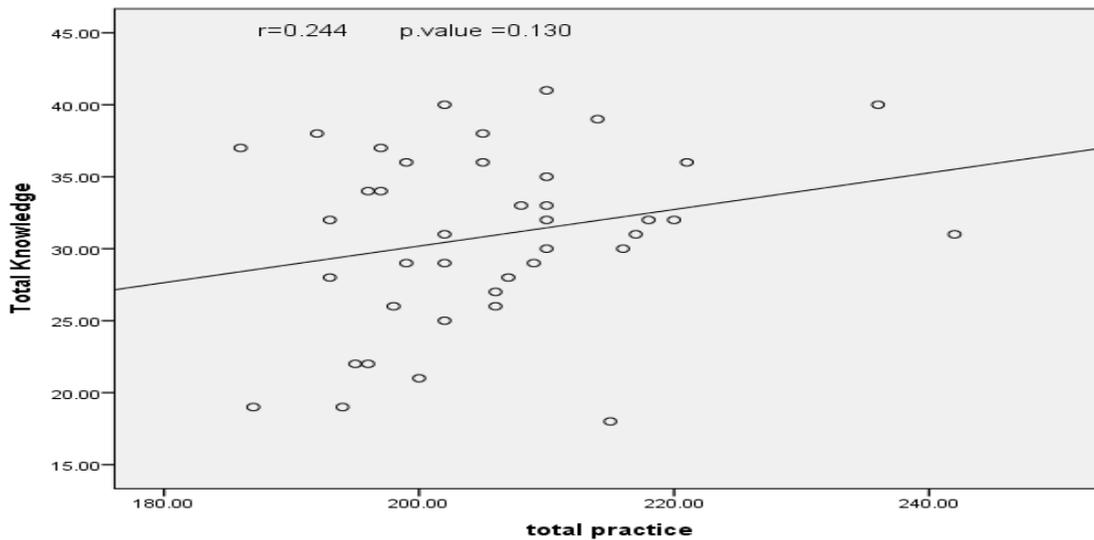***p<0.001moderate significance ***p<0.0001 high significance*

Figure (3): correlation between nurses' knowledge and practice regarding care patients of Chest Trauma (No=40).

Table (1): Shows the Socio-demographic data of studied nurses. It was found that 62% of them were in the age group from 25 to 30 years, 77,5 % were female and 72,5 % were single. About their educational level 67, 5% of the Technical Institute of Nursing, 32.5% of the nurses held a Nursing Diploma. More than that, 42,5 % nurses had work experience in nursing less than 5 years, 32% of them had from 5-10 years' experience and 25% of them had working experience more than 10.anther 42,5 % nurses had work experience in nursing less than 5 years, 32% of them had from 5-10 years' experience and 25% of them had working experience more than 10. In relation to their previous training on course chest trauma, the table reveals that 97, 5 % of them were not receiving any previous course chest trauma training.

Figure (1): This figure shows that the majority of the nurses (70%) had unsatisfactory. Level of nurses Knowledge regards total score, while (30%) satisfactory Level total scores about chest trauma.

Table (2): This table show Frequency distribution of the Nurses' Knowledge emergency department trauma: - it was apparent from this table M± SD mean score of the items Nurses' Knowledge (anatomy and physiologic, Definition Chest trauma, mechanisms and classification, causes and signs and symptoms, and treatment of chest injuries) were (10.95±2.88, 1.7±1.04, 3.53±1.18, 4.85±1.639.88±2.44) respectively It was found also from this table that total M± SD of Nurses' Knowledge was (**30.9±6.14**)

Figure (2): This figure shows that the majority of the Nurses' (95%) had unsatisfactory. Level of nurse's practice regards total score, while (5.0%) satisfactory Level total scores about chest trauma.

Table (3): This table show Frequency distribution of the Nurses' practice emergency trauma: - it was

apparent from this table M± SD mean score of the items Nurses' practical (**airway**, Manual airway, a chin lift, b. Jaw thrust, c. recovery position. Oral airway insertion, tracheal suction, Intubating Laryngeal Mask Airway, Care Of Tracheal Tube Intubation) were (10.1±0.63, 3.03±0.16, 3.05±0.32, 4.03±0.16, 10.75±0.71, 17.9±1.91, 14.05±0.22, 13.5±2.53) (**Breathing.** Oxygen therapy, Suction, Chest tube) were (48.8±7.4, 16.48±2.74, 10.15±3.08, 22.18±5.83) (**Circulation**, shock, fluid, CPR) were (73.33±4.03, 10.78±0.66, 53.68±2.42, 8.88±2.17) (**Technique, Level of conscious**) were (14.2±0.88, 3±0) respectively It was found also from this table that total M± SD of Nurses' practice was (**205.63±11.77**)

Table (4): Presents the relationship between total score of nurses' knowledge and demographic variables. The table revealed that, the highest mean scores of nurses' knowledge in relation to age group 25-30 years were 57.1% Unsatisfactory compared with 75.0% satisfactory to age group20-25 years old present statistical significant difference between age and nurses' knowledge(p<0.050*) , while there was no relationship between the total score of nurses' knowledge and the other socio-demographic variables .

Table (5): Presents the relationship between total score of nurses' knowledge and demographic variables**.** The table revealed that, the highest mean scores of nurses' knowledge in while there was no relationship between the total score of nurses' knowledge and the other socio-demographic variables

Figure (3): Correlation between nurses' knowledge and practice regarding chest trauma this figure illustrates that**:** there was no a ststistical significant difference between nurses' Knowledge and practice.(**r=0.244   p= 0.130**)

Discussion

Thoracic trauma is one of the major heavy loads in poly-traumatized patients. Traumatic injury is even the most common cause of death. Thoracic injuries are responsible for twenty five percent of deaths (**Milisavljević et al., 2016**) Currently, injury in India is a big cause of years of productive life lost and the leading cause of death for those under Thirty-five years old. This national injury heavy loads is growing and the ongoing rise in the trauma burden is mostly in the form of road traffic crashes(**Mitra et al., 2017**)(**Chowdhry & Rathinam, 2017**).

The current study was aimed to assess the nurses' performance regarding care of Chest Trauma patients at Trauma Emergency Unit

The results of the present study showed that more than half of the nurses were in the age group from twenty five to thirty years, Female, and Single, more than half of the nurses were in the qualification of Technical Institute of Nursing This result may be due to the old belief that nursing is profession to female so most of nurses in Egypt are females. This results is in agreement with (**Diab & Mabrouk, 2015).** Most of the nurses their age ranged from twenty five to Twenty-nine years, and working as staff nurses at specialty hospital setting, as regard the educational level; Most of the nurses had diploma of nursing, their experiences below five years, and difficult chance to attend training courses about the disasters, and obtained information on disasters through different mass media**.**   Also, this finding is in accordance with (**Ibrahim, 2016**) Slightly more than half of them were aged less than thirteen years. Also, more than half of the studied nurses had a technical education. And half of them their years of experience at the emergency department low fifth.   also agree with a study done by (**Elfaki et al., 2016**) More than that, about half of them had less than teen years' experience. And the agreement with a study done by(**Ibrahim, 2016**) According to their years of experience it was found that less than two-thirds of them had experienced less than five years.

The presant study was disagree with a study done by (**Elfaki et al., 2016**) The study was included fifty nurses, their age range from twenty one to Forty five years. The present study the findings revealed that all nurses had not attended any previous training courses about the chest trauma. This went in the line with (**Bedier, et al., 2016**) the findings of the present study indicated that the majority of studied nurses did not have any undergraduate training courses about chest trauma care as they graduated from secondary nursing school and about half of them had less than teen years' experience. Also, they did not attend any postgraduate training program related to chest trauma.

Also agreement with (**Ibrahim, 2016**) majority of nurses had not attended educational lectures or workshops concerning chest trauma management. also agreement with (**Bedier, et al., 2016**) they did not attend any postgraduate training program related to chest trauma or chest tube. While only one third of them attended training program related to infection control.

As well, the great majority in the current study had unsatisfactory knowledge level about chest trauma in all items. This is an expected finding. Due to lack of preparation during the basic education, lack of desire of nurses to acquire new knowledge, overload in the working situation and lack of continuing education

courses related to the care of the patient with chest trauma. All nurses with a diploma degree and Technical Institute of Nursing, with the not specific qualification about chest trauma.

This result is congruent with**(Yousef, Mohamed, Ali, & Ali, 2018)** In Egypt, nursing is a female occupation, and this gives a reason why the entire study sample was female. The unsatisfactory level of nurses knowledge in the initial assessment might be due to the inadequate educational preparation level and lack of in-service training, This result is congruent with **(Carla, et al., 2018)** A Brazilian study, with One hundred and forty-four nurses, emphasizes that nurses recognize that continuous education is an important tool that has a positive influence in the nursing care in a way that they could enhance their knowledge.

The present study agreement with **(Rasouli, et al., 2016)**Within limitation of his study the results show that majority of participants had low level of knowledge about trauma and taking care of traumatic patients in both male and female staff and in both the results of the study represented that there was no significant difference in their level of knowledge in regard to their demographic characteristics. According to the epidemiology of trauma, Also, these results are in agreement with **(Hatata et al., 2018)** **(Hatata et al., 2013)** The total knowledge score and the score of all its items increased significantly immediate post-intervention. This reflects the lack of knowledge among nursing about the chest trauma and falls.

This study Agreement with **(Curtis, Lien, Chan, Grove, & Morris, 2002)** their analysis of the impact of the trauma nurse practitioner on the quality of care for trauma patients in a large US institution found that the introduction of a trauma nurse practitioner reduced the time of surgical house-staff activities such as teaching patients and completing discharge. Also, this study agreement by**(Goldstein et al., 2017)** This may be due to nurses' lack of confidence in their ability to differentiate between mild, moderate and severe pain, the pain severity discriminator not actually changing the triage category, or, sadly, staff becoming immune to patients' complaints of pain (pain is one of the most common reasons for presentation.

Also, these results are in agreement with **(Feizi Nazarloo et al., 2017)** In the present study, most subjects had a poor awareness status, regarding the field of protection of forensic evidence. In a study conducted in emergency wards of the city of Durban, South Africa, most nurses had problems with the protection of forensic evidence and had not experienced any training in the protection chain,

moreover, disagreement by **(Elfaki et al., 2016)** Nurses had good knowledge about indications and time for chest tube removal and average knowledge about the basic principles of chest derange system function, complications, action when trauma leakage and dislodge and had poor knowledge to do action when the traumas displacement.

Moreover agreement with **(Curtis, et al., 2002)** These injury statistics could have significant impact on medico legal issues, representation, longer admissions and patient satisfaction. They raise the possibility that patients may have been going home with undetected injuries and taking longer to get back to work and return to their previous functional status. Furthermore, unrecognized injuries may not only have an adverse impact on patient outcomes, but they can also compromise the credibility of both the clinicians and the institution.

As revealed from the current study, the majority of the nurses were having unsatisfactory level regarding show level Nurses' practical about chest trauma. Outcomes are dependent this is may be attributed to interpreting the reasons for nurses' inadequate practice to an absence of incorporation chest trauma course in a nursing curriculum of the taught nursing program. Other relevant factors included lack of in-service training program, lack of the availability of qualified nurses, and guidelines in nurses' work areas. Moreover, another possible explanation for that phenomenon is the lack of funding aimed at organizing nurses' regular workshops. Another factor for lack of nurses' practice in the current study was nurses' workload which made the delay of nurses' abilities and motives to acquire and update their knowledge and practice. However, nurses' understanding of practice chest trauma could even save the patient's life in time. This result is congruent with **(Garvey et al., 2016)** A review of literature revealed a lack of research on nursing-focused trauma education courses.

Agreement by **(Rasouli et al., 2016)** that methods of nursing education can be useful in improving practice skills and relationships of nurses in an emergency unit. The generic approach (the ABC approach) should be taught at an excellent level to be applicable in supporting injured patients. this study disagreement with **(Curtis et al., 2012)** Errors in trauma management contribute significantly to preventable or potentially preventable morbidity and mortality. Implementing and maintaining principles of standardizing trauma care is vital to optimizing patient recovery and emergency nurses are to this process.

Concerning correlation between Nurses', knowledge and practice and their demographic characteristics

revealed that there present statistical significant difference only age. This study agreement by**(Abd Alsemia Elewa & Abd Elshahed Ahmed Elkattan, 2017)** in the present study, nearly half of them their age ranged between 30 - < 40 years, this result may be due to that this age group is the common age of nurses who give care for the patient's chest trauma**.**

This study agreement by **(El-hay, Ahmed, & Sharshor, 2018)** Also the study result revealed that there was statistical significant positive correlation among nurses' knowledge and practice and their socio-demographic characteristic included; age, gender, level of education, and years of experience

Also, agreement with**(Al-mawsheki, Ibrahim, & Taha, 2016)** The present study showed a significant difference between nurse's knowledge scores and their age. This may be due to the studied nurses were spent much time for caring for these patients. Disagreement by **(El-hay et al., 2018)** Also the study result revealed that there was statistical significant positive correlation among nurses' knowledge and practice and their socio-demographic characteristic included; age, gender, level of education, and years of experience

Concerning the relationship between knowledge and practice, the present study revealed that there was no a ststistical significant difference between nurses Knowledge and practice. **(r=0.244   p= 0.130)** This is interpreted that reasons for lack of knowledge and practice about chest trauma due to an absence of pre-employment orientation programs and in-service training courses. These results were supported by **(Abd Alsemia Elewa & Abd Elshahed Ahmed Elkattan, 2017)** The present study finding revealed that, there was a statistically significant correlation between the total score of nurses' knowledge and practice, which indicates the positive relation between knowledge and practice. This result refers to the level of practice influenced by the level of knowledge. our finding contradicted with **(Khalil, 2018)** who stated that many nurses were aware of their inadequate knowledge and related it to inadequate care practices.

Conclusion the majority of the nurses was having an unsatisfactory level regarding nurses' knowledge and practice. There was no a ststistical significant difference between nurses' Knowledge and practice.

The study recommended that

1- Upgrading nurses' knowledge and Performance about caring for patients with chest trauma through:
2- Encouraging nurses to attend national and international congresses, seminars, symposia, and workshops regularly about chest trauma & care of patients with the chest trauma.

3- Regular continuous educational program plan about chest trauma& its management should designed for nurses working in the emergency at least every six months for enhancing nurses' knowledge and practice to achieve the high quality of care.
4- Nurses involved in patient care should have a valid the Advanced Trauma Life Support (ATLS) program care certification and renew it regularly at least every two years.

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