



Assessment of nurses knowledge and practices concerning cardiogenic shock

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Abstract

The nurses have an important and effective role in the evaluation of the type of nursing care , which are providing to patient with cardiogenic shock , via their contribution in the quality of nursing care, which are provided to cardiogenic shock patients. The present study aims at assessment of knowledge and practices of nurses that they working in the coronary care unit and emergency department.

A Correlation study was performed in the coronary care unit and emergency department in Ibn Sena teaching hospital , Almousl general hospital and aljmhori teaching hospital in mousl city for the period from 8 january 2005 to 12 may 2005. The sample of the study included (50 subject) of nurses who work in he above units. The results of the study showed that there was significant difference between the knowledge and practice of nurses in regard to theoretical mean.. The level of education . and duration of employment had appositve impact on the knowledge and practices. While the gender and the training session had no significant impact on knowledge and practice .

Based on the above results , the study recommends that the nurses in these units should haven sufficient practice and the knowledge update about critical care , especially about cardiogenic shock, nursing staff who work in the coronary care unit and emergency department units should be assessing after tanning; and larger study to elaborate the effects of different variables on the knowledge and practice of nurses.

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Introduction

Cardiogenic shock is the Armageddon of heart disease. Most of these patients die within 24 hours , few live with in 24 host of these patients die with in 24 hours , few live with in 24 days.

Myocardial infarction (MI) is the most common cause of cardiogenic shock in modern times. Clinicians recognized cardiogenic shock as a low cardiac output state secondary to extensive left ventricular infarction , development of a mechanical defect (sharma Sat,etal, 2004). Cardiogenic shock is typically the result of a massive of damage to the left ventricular myocardium.(Holmes, 2003). The systemic nursing process is an essential prerequisite for providing effective care for patients in shock(Lancaster, 1990)

Critical care nursing is the specialty within nursing that deals specifically with human responses to life – threatening problems .(Hartshorn and Lambor, 1993). The adult critical care nurse is responsible for managing the care of adult and elderly patients experiencing life – threatening problems requiring complex assessment , high intensity therapies and interventions, and continuous nursing vigilance. Nursing staff in the critical care nursing are enhancing by an atmosphere of teamwork, and it will improve standards of care Patients hospitalized with acute myocardial infarction , 7-10% (AMI) develop cardiogenic shock.(Hochman, etal, 1999). The precise incidence is difficult to measure because some patients die before reaching

the hospital . Inconstant , early and intensive monitoring can increase the apparent incidence of cardiogenic shock of 7.5% ; this incidence remained stable from 1975 to 1988. In the Global utilization of streptokinase (GUSTO-1) trial , the incidence of cardiogenic shock was 7.2% , a rate similar to that found in other multicenter thrombolytic trials.(Hollenberg,et al, 1999). Shock develops in most patients of AMI within the next 48 hour . In multicenter, country – wide survey from Denmark , 59ide% of patients developed shock within 48 hours, but 30% developed shock more than 4 days after MI . As might be expected , prior MI ; older age ; diabetes mellitus ; female gender ; and a history of angina pectoris ; stroke ; or peripheral vascular disease have been associated with increased incidence of cardiogenic shock , but the predictive power of these factors in an individual patient is Limited.(Goldman,2004).

Rational

Cardiogenic shock is a critical state requires efficient care. Nurse plays an important role in the management of cardiogenic shock, the exact role of the nurse during the management of patients with cardiogenic shock is not clear, that is why the outcomes of intervention was not up the standard expected. The nurse at the bed side must have the knowledge and skill to evaluate the total picture of patients status if she is to fulfill the role of alerting physician to significant changes in the patients condition.

Objectives of the study :

To assess the nurses Knowledge and practices during the work in coronary care unit (CCU) and emergency department (ED) in Mousl city.

To determine the relationship between the characteristics of the nurse as (age, the gender, place of work, training sessions, level of education , duration of employment , number of employers , time of work) in coronary care unit and emergency department with their Knowledge and practices.

Methodology:

Administrative Arrangements:

Prior to the actual collection of data, a formal administrative approval was obtained to conduct the study from the ministry of health , department of health in Nineveh health office in order to conduct the study in Ibn Sena teaching hospital , Almousl general hospital and aljmhori teaching hospital under number(15683).

Setting of the study:

The study was carried out in Ibn Sena teaching hospital- coronary care unit| (CCU)- Almousl general hospital (CCU&ED), and aljmhori teaching hospital (ED).

Design of the study:

Correlation descriptive study

Sample of the study :

The sample of the study consists of (50) nurses choose purposively who are working in ibn sena teaching hospital (CCU) (16 nurse) , aljmhori teaching hospital (ED) (15 nurse)and almousl general hospital CCU and ED (19 nurse).

Data collection :

The data , which were collected in the (3) hospitals for the period from 15 February to 12 may 2005 include in sequence :

*Socio – demographic characteristic , which include 8 variables : age, the gender , place of work , duration of employment , training session , level of education , number of employers , time of work.

*The questionnaire about cardiogenic shock was presented to the nurses to fill in during the period from 15 February to 2 march

*the practice assessment done by the investigator through indirect observation during performance of the tasks, assessment of practices was carried out began at 15 march to 12 may 2005.

Tool of the study:

Special questionnaire was prepared by the investigator according to the expert opinion , literature review about cardiogenic shock from the books , internet , and preliminary study which was carried out in Ibn Sena teahing hospital , Almousl general hospital and aljmhori teaching hospital

A- Knowledge assessment questionnaire (closed ended questions) consists of:

- 1- General concepts of cardiogenic shock(17 sub items)
- 2- Information about care of cardiogenic shock (20 sub items)
- 3- Knowledge about medications (8 sub items)
- 4- General nursing information (8 sub items)

B- Practice assessment

The tasks of blood pressure , oxygen administration . and cannula insertion are example for assessing the practice of the study , because these tasks are standard in the management of cardiogenic shock, three checklists are lists are constructed by (clinical nursing skills and technique , 2002) were used for the purpose of evaluation and statistical measurement.

Testing the validity and reliability of the tool:

Content validity :

Prior collecting the data of the study , the tools were examined to identify their validity . the investigator submitted the tools

to a panel of (12) experts in different fields of knowledge.

Reliability (pilot study):

The pilot study was carried out on (6) nurse which were selected from the schedule of nurses working in the CCU, ED (in Ibn Sena teaching hospital , Almousl general hospital and aljmhori teaching hospital) Evaluation of responses and statistical analysis between the test and retest on the same sample of nurses done by pearson,s coefficient for items in the studied group which showed that reliability estimate for knowledge (0.967) and for practice was (0.821) between test and retest.

Results

Table (4-1) demographic data of the study sample

Characteristics	Items	No.	%	Mean ±SD
Age groups (years)	21-30	23	46.0	26.22±1.37
	31-40	14	28.0	35.79±2.67
	40	13	26.0	45.31±2.90
	Total			33.86±8.28
sex	Male	44	88.0	
	female	6	12.0	
place	CCU	26	52.0	
	Emergency	24	48.0	
Duration employment (year)	5	35	70.0	
	6-10	7	14.0	
	10	8	16.0	
Training session	no	18	36.0	
	yes	32	64.0	
	Non degree training course	4	8.0	
Level of education	School of nursing	27	54.0	
	Nursing institute	10	20.0	
	Nursing college	9	18.0	
	3	12	24.0	
No.of employers	6	8	16.0	
	7	30	60.0	
	Day	37	74.0	
Time	Evening	8	16.0	
	night	5	10.0	

This table show that most of the nurses (46.0 %) are between the ages (21-30) years.

The gender the majority (88%) of nurse were males. Regarding the place of work 52% of

nurse were working in the CCU and 48 % in the ED. Regarding duration of employment , those with less than (5 years) constituted 70%, (6-10%) 14%, and above 10 years 16%. Concerning the level of education high percentage of nurses with nursing institute 54% were graduate of school , while 20% were nurses with nursing institute, the nurse

from nursing college were (9) which represent (18%), and the remaining nurses represent (8%). Concerning the number of employers 3 nurses represent (24%) , 6 nurses which represented 16%, 7 nurse which represented 60%. Regarding the time of work the day constituted 74% , evening constituted 16% , night constituted 10%.

Table (4-2) comparison between the mean of knowledge about cardiogenic shock with the theoretical mean by using test.

knowledge	Mean ±SD	theoretical mean	t- value	p- value
General information about cardiogenic shock	9.18±2.93	8.5	1.64	>0.001 (NS)
Information about care of cardiogenic shock	12.22±3.48	10.0	4.51	<0.001
Information about medications	5.14±1.58	4.0	4.0	<0.001
General nursing information	5.38±1.32	4.0	4.0	<0.001

This table show a significant difference at p value < 0.001 by using t- test between mean of knowledge of nurses about cardiogenic shock with regard to theoretical means .

Table (4-3) comparison between the mean of practice with theoretical mean by using t- test

practice	Mean ±SD	theoretical mean	t- value	p- value
Blood pressure measurement	9.94±2.00	7.5	8.61	<0.001
Oxygen administration	6.42±1.09	4.5	12.46	<0.001
Cannula insertion	5.72±0.70	3.5	22.39	<0.001

This table show a significant difference at p value < 0.001 by using t- test between mean of practice of nurses about cardiogenic shock with regard to theoretical means .

Table (4-4) comparison of work performance during management of cardiogenic shock and ordinary time

practices	Mean ±SD		t- calculated	Level of sig.
	Ordinary time	Shock time		
Blood pressur measurement	64.44±5.44	76.00±10.04	2.58	<0.05
Oxygen administration	70.37±9.07	71.11±11.94	0.13	>0.05 (NS)
Cannula insertion	80.95±14.75	82.68±6.02	0.37	>0.05(NS)

Table (4-5) comparison of nurses knowledge according to their age by using ANOVA -test

Age/ knowledge	Age (year)	Mean ±SD	F-calculatex	Level of sig.
	21-30	51.66±14.83		

General information about cardiogenic shock	31-40	55.46±17.98	0.40	>0.05 (NS)
	>40	56.56±21.01		
Information about care of cardiogenic shock	21-30	61.30±20.29	0.01	>0.05 (NS)
	31-40	61.43±15.25		
Information about medications	>40	60.38±15.06	0.28	>0.05 (NS)
	21-30	61.96±21.81		
	31-40	66.07±15.83		
General nursing information	>40	66.35±20.66	0.46	>0.05 (NS)
	21-30	69.57±17.20		
	31-40	64.29±17.58		
	>40	66.35±14.78		

Table (4-6) comparison of nurses practices according to their age by using ANOVA -test

Age/ practices	Age (year)	Mean ±SD	F-calculated	Level of sig.
Blood pressure measurement	21-30	64.64±16.87	0.32	>0.05 (NS)
	31-40	68.10±7.92		
	>40	67.18±11.37		
Oxygen administration	21-30	68.12±13.94	1.73	>0.05 (NS)
	31-40	75.40±9.92		
	>40	72.65±9.75		
Cannula insertion	21-30	77.46±9.46	4.39	<0.05
	31-40	83.67±11.00		
	>40	68.81±7.05		

Table (4-7) comparison of nurses knowledge according to their gender by using t -test

gender/ knowledge	Mean ±SD		t-calculated	Level of sig.
	male	female		
General information about cardiogenic shock	53.88±15.84	54.90±27.51	0.14	>0.05 (NS)
Information about care of cardiogenic shock	61.59±17.18	57.50±20.19	0.54	>0.05 (NS)
Information about medications	46.49±19.98	62.50±19.37	0.23	>0.05(NS)
General nursing information	67.90±16.04	62.50±20.92	0.75	>0.05 (NS)

Table (4-8) comparison of nurses practices according to their gender by using t -test

gender/ practices	Mean ±SD		t-calculated	Level of sig.
	male	female		
Blood pressure measurement	66.67±11.94	63.33±22.61	0.57	>0.05 (NS)

Oxygen administration	70.96±11.79	74.07±15.187	0.59	>0.05 (NS)
Cannula insertion	81.17±10.11	85.71±9.04	1.04	>0.05(NS)

Table (4-9) comparison of nurses knowledge according to their place of work by using t-test

Place of work/ knowledge	Mean +SD		t- calculated	Level of sig.
	CCU n=26	ED n= 24		
General information about cardiogenic shock	58.14±17.87	49.51±15.70	1.81	>0.05 (NS)
Information about care of cardiogenic shock	61.73±18.05	60.42±17.00	0.26	>0.05 (NS)
Information about medications	68.27±17.76	59.90±21.17	1.52	>0.05(NS)
General nursing information	73.08±15.29	60.94±15.77	2.76	<0.05

Table (4-10) comparison of nurses knowledge according to their place of work by using t-test

Place of work/ practices	Mean +SD		t- calculated	Level of sig.
	CCU n=26	ED n= 24		
Blood pressure measurement	69.74+10.02	62.50+15.58	1.97	>0.05 (NS)
Oxygen administration	72.65+11.43	69.91+12.89	0.80	>0.05 (NS)
Cannula insertion	82.97+9.91	80.36+10.16	0.92	>0.05(NS)

Table (4-11) comparison of nurses knowledge according to their duration of employment by using ANOVA -test

duration of employment knowledge	duration(year)	Mean ±SD	F- calculated	Level of sig.
General information about cardiogenic shock	<5	51.43±15.12	1.41	>0.05 (NS)
	6-10	57.98±20.21		
	>10	61.76±22.45		
Information about care of cardiogenic shock	<5	56.86±17.83	4.53	<0.05
	6-10	75.71±38		
	>10	66.88+13.08		
Information about medications	<5	60.36±18.56	4.02	<0.05
	6-10	82.14±17.47		
	>10	65.63±19.76		
General nursing information	<5	67.86±17.23	0.13	>0.05 (NS)
	6-10	64.29±16.81		
	>10	67.19±14.85		

Table (4-12) comparison of nurses practices according to their duration of employment by using ANOVA -test

duration of employment/ practices	duration(year)	Mean ±SD	F-calculated	Level of sig.
Blood pressure measurement	<5	63.24±13.56	3.96	<0.05
	6-10	77.14±7.56		
	>10	70.00±11.27		
Oxygen administration	<5	69.52±12.15	1.34	>0.05 (NS)
	6-10	76.19±13.50		
	>10	75.00±9.85		
Cannula insertion	<5	79.59±10.56	2.89	>0.05 (NS)
	6-10	85.71±8.25		
	>10	87.50±5.05		

Table (4-13) comparison of nurses knowledge according to their training sessions of work by using t -test

Place of work/ knowledge	Mean ±SD		t-calculated	Level o sig.
	No n=18	yes n= 32		
General information about cardiogenic shock	50.00±16.05	56.25±17.74	1.24	>0.05 (NS)
Information about care of cardiogenic shock	58.89±17.11	62.34±17.69	0.67	>0.05 (NS)
Information about medications	63.19±20.32	64.84±19.68	0.28	>0.05(NS)
General nursing information	65.97±16.50	67.97. ±19.78	0.41	>0.05(NS)

Table (4-12) comparison of nurses practices according to their training sessions of work by using t -test

Place of work/ practices	Mean ±SD		t- calculated	Level o sig.
	No n=18	yes n= 32		
Blood pressure measurement	65.93±15.15	66.46±12.50	0.13	>0.05 (NS)
Oxygen administration	70.99±12.72	71.53±11.95	0.15	>0.05 (NS)
Cannula insertion	79.73±11.20	83.04±6.21	1.25	>0.05(NS)

Table (4-14) comparison of nurses knowledge according to their level of education by using ANOVA -test

level of education / knowledge	level of education	Mean ±SD	F-calculated	Level o sig.
General information about cardiogenic shock	Non degree training course	42.65±15.47	1.14	>0.05 (NS)
	School of nursing	52.51±16.95		

Information about care of cardiogenic shock	Nursing institute	57.06±18.82	2.42	>0.05 (NS)
	Nursing college	60.13±16.58		
	Non degree training course	45.00±70.07		
	School of nursing	58.89±16.37		
Information about medications	Nursing institute	69.00±16.96	2.51	>0.05 (NS)
	Nursing college	66.11±16.65		
	Non degree training course	43.75±21.65		
	School of nursing	26.96±16.80		
General nursing information	Nursing institute	73.75±18.11	5.03	<0.05
	Nursing college	66.67±24.21		
	Non degree training course	43.75±12.50		
	School of nursing	66.20±12.41		
	Nursing institute	70.00±17.72		
	Nursing college	77.78±16.27		

Table (4-15) comparison of nurses practices according to their level of education by using ANOVA -test

level of education practices	level of education	Mean ±SD	F-calculated	Level of sig.
Blood pressure measurement	Non degree training course	46.67±18.86	6.49	<0.05
	School of nursing	64.44±11.09		
	Nursing institute	75.33±10.45		
	Nursing college	70.73±10.60		
Oxygen administration	Non degree training course	66.67±15.71	1.65	>0.05 (NS)
	School of nursing	71.19±10.79		
	Nursing institute	77.78±9.07		
	Nursing college	66.67±15.71		
Cannula insertion	Non degree training course	82.14±13.68	1.00	>0.05 (NS)
	School of nursing	81.48±10.34		
	Nursing institute	85.71±6.73		
	Nursing college	77.78±10.38		

Table (4-16) comparison of nurses practices according to their number of employers by using ANOVA -test

No. of employers / practices	No. of persons	Mean ±SD	F-calculated	Level of sig.
Blood pressure measurement	3	71.11±11.49	1.10	>0.05 (NS)
	6	63.33±14.69		

Oxygen administration	7	65.11±13.64	0.86	<0.05
	3	75.00±6.91		
	6	72.22±11.88		
Cannula insertion	7	69.63±13.67	0.24	<0.05
	3	80.95±11.12		
	6	83.93±9.16		
	7	81.43±10.03		

Table (4-17) comparison of nurses practices according to their time of work by using ANOVA -test

Time of work / practices	No. of persons	Mean ±SD	F-calculated	Level of sig.
Blood pressure measurement	day	64.86±13.85	1.00	>0.05 (NS)
	evening	68.33±11.13		
	night	73.33±12.47		
Oxygen administration	day	70.27±13.37	0.97	>0.05 (NS)
	evening	72.22±5.94		
	night	77.78±7.86		
Cannula insertion	day	82.24±9.76	1.44	>0.05(NS)
	evening	76.79±13.09		
	night	85.71±0.00		

Discussion :

***Socio – demographic characteristics of the sample :**

The nurse plays an effective and great role in different types of care for the patients . there is no doubt that the nurse who works in the CCU and ED must be intelligent enough and qualified for these tasks in addition to his general duties, therefore , he must have a good scientific back ground about the profession and details related to coronary artery disease and critical care in order to identify the problems from which the patients and which make the proper decision for intervention . it is clear that the mean age of nurses was (33.86) , regarding the gender reveals that distribution of nursing staff according to sex (88%) male, 12 % female , regarding the place of work , the nurses working in CCU constituted (52%) while in emergency units (48%) . the problems in emergency department overcrowding. Regarding the duration of experience , less than 5 years constituted 70% , as they are recently employed . regarding the training sessions no= 36% , yes = 64% , these results reveals most of nurses have trained and have advancement in CCU and ED, regarding the level of ducation , non degree training course 8%,

school of nursing 54% , nursing institute 20%. Nursing college 18% the duration of employment in nursing practice and the level of education affect the performance of nurse, the staff should have sufficient information , high training . in dealing with such disease,

***knowledge and practices of nurses about cardiogenic shock**

Table (2,3) show significant difference regarding the knowledge and practices of nurse about cardiogenic shock, with theoretical mean by using t- test , in area of information about car of cardiogenic shock , information about medication, general nursing information and the practices area of blood pressure measurement , oxygen administration and cannula insertion. These results indicate the nurses ability to perform efficiently , safely , and multi- disciplinary collaboration in the care of patients during the work in the critical care units(hennery, 1991)

Table 4 show significant difference during care cardiogenic shock and other cases of diseases in the blood pressure measurement . this result reveals nurses who have high level of accountability for decisions that affect clinical practice , and appropriate

treatments as demanded by the physician in an accurate and timely manner (Hennery, 1991).

Variables of nurse with knowledge and practices:

- 1- Age of nurse: one of the important variables that directly effect patient care in CCU and ED is the age of nurse; using ANOVA test it appear that there no significant difference in knowledge with cardiogenic shock . information about cardiogenic shock treatment, information about medications and general nursing information. Despite the fact the older nurse has more experience and the nurses a ware of different practical measures in minimizing the problems that might happen and provide the best nursing care for patients stricken by cardiogenic shock, in addition , there were no significant difference of practices regarding blood pressure measurement and oxygen administration , these results may be explained by the fact that the nurses were exposed to limited practical tasks, while for cannula insertion , there was significant difference , as this task is gained by prolonged experience.
- 2-The gender: table 7, 8 show that there are no significant difference in knowledge and practices with regard to sex of nurse, the fact that information included in the study sample , sufficient , and appropriate to the cognition abilities of both the sexes.
- 3-place of work: regarding the impact of place of work on the knowledge and practices of nurses in table (9,10) which reveled no statistical difference in knowledge and no statistical difference in practices , due to the number of nurses in CCU more than nurse in ED. But is significant regarding general nursing information . one of the most important nursing responsibilities in The CCU is monitoring and ensuring the quality of care , with in this responsibilities are all activities associated with professional practice such as self monitoring the effect of medical intervention and supervising . the emergency nurse practitioners expanding scope of practice has moved beyond managing the care of

patients with minor injuries, to include those with minor illnesses and indeed beyond that to the management and care of those with increasingly complex, acute and chronic condition (brook, 2004).

- 4-duration of employment :the investigator divided the sample into three group according to the yearsof employment in the CCUand ED. Table 11, 12 shows significant statistical difference between the 3 groups and practices . this results is due to he fact that nurses through their presence in the hospital and experience which are gained by continuous care for patients , as well as joining some of the training and development courses which lead to development of their skills and their scientific and practical experiences, maintain high level from expertise in nursing a cross CCU and ED.
- 5-training sessions: table 13, 14 show no significant difference between knowledge , practical and training sessions . the training sessions is important in developing he work of nurse , the nursing staff should have an advanced level of skills to provide safe and excellent patient care. Where explained the studies that the tension and discomfit in nurses during the work resulted from decrease in the traning
- 6-level of education: in order to know standards of nurses education , the researcher divided the sample into four groups according to nurses graduation. The purpose of level of education is to provide nurses with he knowledge and skills necessary to diagnose and mange medical emergencies , to provide nurses with an understanding of the social impact of critical illness and the contribution of patient behavior to these problems and to teach the nurse basic diagnostic and interventional procedures (collines.2000). several studies show that the nurses with more education deliver more cost effective care and it is not always easy for nurse with higher education to remain in clinical and public health nurses and there are often no senior position available with in the system, so that nurses with higher education do not reach a position where

they can implant change and are not reward for there additional education by appropriate remuneration or promotion (kockrow.1999).

Conclusion and Recommendations:

There was significant difference between the knowledge and practices of nurses with regard to theoretical mean. The level of education had a positive impact on the knowledge and practices of nurses who are involved of the study . the gender and the place of work have no significant on knowledge and practices

Recommendation :

The nurse in these units should have sufficient practices and updated knowledge about critical care especially about cardiogenic shock, nursing staff working in the care unit CCU and ED should be assessing after tanning, patients with ischemic heart disease must be educated about their illness to avoid complication of heart attacks, the nursing staff can do this , it is better to provide each patient , larger study is needed to elaborate he effects of different variables on the knowledge and practices of nurses.

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