

Assessment of Nurses' Knowledge Concerning Cardiogenic Shock for Patients' in Cardiac Care Unit at Baghdad Hospitals

تقييم معارف الممرضين حول الصدمة القلبية للمرضى الراقدين في وحدة العناية القلبية في مستشفيات بغداد

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الخلاصة

خلفية البحث: معدل الوفيات الناتجة عن الصدمة القلبية لا يزال مرتفعاً في وقتنا المعاصر. يمكن تحديث الصدمة القلبية من خلالها الاضطرابات القلبية وأهمها الشرايين التاجية الحادة والصمامات القلبية. اضطرابات الميكانيكية للقلب.

الهدف: تهدف الدراسة إلى تقييم المعرفة المتعلقة بالصدمة القلبية للممرضين الراقدين في وحدة العناية القلبية وإيجاد العلاقة بين الممرضين والخصائص الديموغرافية (العمر، الجنس، المستوى التعليمي، سنوات الخبرة، والدورات التدريبية).

المنهجية: دراسة وصفية أجريت في مستشفيات بغداد التعليمية والتي شملت مدينة الطب/ مستشفى بغداد التعليمي ومستشفى ابن البيطار. ولتحقيق أهداف الدراسة تم اختيار عينة غرضية (غير احتمالية) (50) ممرض الذين يقدمون الرعاية التمريضية للمرضى الراقدين في وحدات العناية القلبية وفقاً لمعايير خاصة. تم استخدام الاستبانة كأداة لجمع المعلومات لتحقيق هدف الدراسة حيث تم تحديد البيانات من خلال تطبيق الإحصاء الوصفي (التكرارات، النسبة المئوية، الوسط الحسابي المرجح والكفاية النسبية).

النتائج: أشارت نتائج الدراسة إلى أن تقويم الوسط الحسابي والكفاية النسبية فيما يتعلق بمعارف الممرضين حول الصدمة القلبية كانت خارج المقارنة وليس هناك علاقة ذات دلالة إحصائية بين الدورات التدريبية ومعارف العينة. في حين أن هناك علاقة معنوية عالية بين المعارف الممرضين حول الصدمة القلبية في وحدة العناية القلبية والتعليم.

الاستنتاجات: الممرضين الذين يعملون في وحدات العناية القلبية يمتلكون معارف عالية المستوى حول الصدمة القلبية في بعض جوانبها.

التوصيات: الدراسة على حد المؤسسات الصحية بضرورة تسهيل وإتاحة الفرصة للممرضين والممرضات في وحدات العناية القلبية استكمال تعليمهم وخاصة للممرضين المتخرجين من المعاهد التمريضية لإكمال دراسة أعلى لتعزيز معارفهم حول العناية التمريضية المقدمة للمرضى الذين يعانون من الصدمة القلبية وكذلك معلومات حول طبيعة الصدمة القلبية في وحدات العناية القلبية.

Abstract:

Background: The contemporary in hospital mortality rate for cardiogenic shock remains extremely high. Cardiogenic Shock can occur as a result of a wide variety of cardiac disorders, Including ACS, valvular disease, myocardial and pericardial disease, congenital lesions, and mechanical injuries to the heart.

Objective(s): The study objectives are to assess of nurses' knowledge concerning cardiogenic shock for patients in the Cardiac Care Unit at public teaching hospitals and to finding out the relationship between the nurse's Knowledge and the demographic characteristics that includes (age, gender, level of education, years of experience, and training session).

Methodology: A Descriptive study which was using the quantitative design. The study was conducted at the Medical City/ Baghdad Teaching Hospital; In-Alnafes Teaching Hospital, and Ibn-Albetta Teaching Hospital starting from November 15th 2012 up to the March 30th 2013. To achieve the objectives of the study, A non-probability (purposive) samples of (50) a nurse who was consisted of all nurses who provide nursing care for patients which suffering from various cardiac diseases including cardiogenic shock and according to special criteria. Data were collected by an application of direct interview as a means of data collection. Nurses were interviewed while they are working in the cardiac care unit during the day. Instrument validity was determined through content validity, by a panel of experts. Reliability of the instrument was determined through detected of Cronbach's alpha via split half technique on sample of (10) nurses, which was (0.74). Analysis of data was performed through the application of descriptive statistics (frequency, percentage, mean of score, Relative sufficiency) and inferential statistics, significance and correlation coefficient.

Results: The results of the study indicated the evaluation of the mean of scores and relative sufficiency for nurse's knowledge regarding cardiogenic shock for patients in the cardiac care unit was out of comparison and there is no significant association between training session of sample and nurses' knowledge. While there is high significant association between ages, gender, level of education, years of experience in cardiac care unit and nurses' knowledge.

Conclusion: The study concluded most of nurses that work in cardiac care unit have high knowledge about cardiogenic shock in some questions.

Recommendations: The study emphasize that hospitals and health organizations should be applying flexible and responsible steps to facilitate passages for better level for junior nurses and those who need high graduated level to improve their skills and knowledge towards nursing care of patients with cardiogenic shock, as well as the nature of cardiogenic shock.

Keywords: Assessment, Cardiogenic Shock, Cardiac Care Unit, Nurse Knowledge.

INTRODUCTION:

Shock is a life-threatening condition [1]. The most lethal form of shock, cardiogenic shock carries an 80% to 100% mortality rate [2]. It is vital; therefore, all nurses are able to recognize its clinical presentation, and to respond promptly and appropriately. Shock can be defined as a mean arterial blood pressure (MABP) inadequate to meet the need of the tissues [1]. Woman with ST-Elevation Myocardial Infarction (STEMI) was more often complicated by cardiogenic shock when compared to men. However, the use of early reperfusion therapy did not differ between the sexes [3].

Usually cardiogenic shock occurs when the heart loss about 40% of its pumping ability. Conditions that can cause cardiogenic shock include MI, Heart failure, cardiomyopathy, acute arrhythmias, papillary muscle rupture, massive pulmonary embolism, and tension pneumothorax [4]. An impaired left ventricle affects both systolic and diastolic function. When the ventricle cannot adequately contract to eject blood, cardiac output (CO) drops along with the heart's ability to deliver oxygen to the tissues. The weakened pumping ability means that some blood remains in the ventricle after systole. This increase in end-systolic volume impairs left ventricle filling during diastolic. Block from entering the left ventricle, blood beings to back up into the lung, the right heart, and eventually the venous system [5].

Hemodynamically, cardiogenic shock causes a heart rate greater than 110 beats/minute, a blood pressure of less than 90 mm Hg systolic, a cardiac index of less than 2.01 litres/minute/m, a systematic vascular resistance (SVR) of greater than 1,800 dynes/second/cm-5, and a urine output of less than 20 ml/hour [6]. The two main goals in treating cardiogenic shock are to enhance (CO) and reverse the shock syndrome. Specific goals include maintaining Spo₂ above 90%, mean arterial pressure above 60 mm Hg, cardiac output greater than 2.2 litres/ minutes/m², urine output greater than 30 ml/hour and normal acid-base balance and body temperature [7]. Nursing considerations emphasize understanding the pathogenesis, early recognition of signs and symptoms, and appropriate prevention and intervention [8].

OBJECTIVES OF THE STUDY: The study objectives are to assess cardiac care unit (CCU) and emergency nurses' knowledge about cardiogenic shock for patients in the CCU unit and to finding out the association between the nurse's practices and the demographic characteristics that includes (age, gender, level of education, years of experience, and training session).

METHODOLOGY:

Design of the study: Quantitative design (a descriptive study) was carried out to achieve the purpose of the study.

Setting of the study: The study was conducted in CCU at three Teaching Hospitals in Baghdad city (Medical City/ Baghdad Teaching Hospital; In-Alnafes Teaching Hospital, and Ibn-Albettar Teaching Hospital). These hospitals provide emergency nursing care for patients which suffering from chest pain.

Sample of the study: A non-probability (purposive) samples of (50) nurses' who was consisted of all nurses provided nursing care for patients who suffering from various cardiac diseases including cardiogenic shock and according to special criteria.

Instrument construction: In order to assess nurses' knowledge, a constructed questionnaire was design and means of an interview technique with the nurses was constructed to measure the variables underlying study. A questionnaire based on comprehensive review of relevant literature and previous studies. These instruments consist of two parts namely; the demographic data of the nurse, and the nurses' knowledge about cardiogenic shock.. The questionnaire was constructed for the purpose of the study consisted of (28) items which include two parts:

Part I: Demographic Data Sheet:

This part concerned with personal information include, the nurses (gender, age, educational level, numbers of experience years and whether if they participating in continuing course training inside or outside the country).

Part II: Nurses knowledge:

This part contained two parts and included (19) items and as the following:

- 1- Nurses knowledge regarding to the nature of cardiogenic shock.
- 2- Nurses knowledge regarding to the nursing care cardiogenic shock patients.

The questionnaire were ordinal according to the three level scale which were scored as (I dont know = 1, I know = 2) for each level respectively so the cutoff point was (2).

Validity of the instrument: Constant validity determined for questionnaire through the use of panel experts who are faculty members from College of Nursing. The experts were asked to review the questionnaire for content with clarity. Such changes were employed according to their suggestions and valuable comments.

Reliability of the instrument: Pilot study was carried out between the October 10th to November 10th , 2012. On (10) nurses in CCU by the researcher and tested questionnaire was performed for determination of the instrument reliability level. The results indicated that the correlation coefficient was $r = 0.74$ at the percentage of variance (43.223) which was statistically acceptable.

Data collection: The data collected with constructed questionnaire through an application of direct interview as mean of data collection.

Statistical data analysis: Appropriate statistical approach was used that includes descriptive statistics (frequency, percentage, mean of score, Relative sufficiency) and inferential statistics significance, and correlation coefficient.

RESULTS:

Table 1. Distribution of nurses by their socio-demographic

Variables	Frequency(f)	Percentages %
Age (years)		
21-25	11	22.0
26-30	15	30.0
31-35	5	10.0
36-40	9	18.0
41-45	2	4.0
46-50	3	6.0
51-Over	5	10.0
Total	50	100.0
Gender		
Male	21	42.0
Female	29	58.0
Total	50	100.0
Educational Level		
Nursing Training Course Graduate	1	2.0
School of Nursing Graduate	3	6.0
Secondary Nursing Graduate	9	18.0
Diploma in Nursing Graduate	17	34.0
Bachelorette in Nursing Graduate	20	40.0
Total	50	100.0
Number of Experiences years		
1-5	18	36.0
6-10	8	16.0
11-15	14	28.0
16- Over	10	20.0
Total	50	100.0
Participating in continuous education and training inside or outside the country		
Always	4	8.0
Sometimes	37	74.0
Do not participating	9	18.0
Total	50	100.0

This table shows that the highest percentages (58.0%) of nurses were female and (30.0 %) and (22.0 %) at the age (26-30) and (21-25)years respectively. According to the educational level, the highest percentage (40.0 %) of the nurses were academic nurses, whereas none of the nurses (0.0 %) were with post-graduate degree like master and doctorate. 36.0 % was the significant percentage of (1-5) years of experiences for nurses who work in cardiac care unit setting. Finally, concerning the participating in training courses inside or outside the country, the results show that the highest percentages (74.0 %) were sometimes participating in training course while (8.0%) only were always participating in such courses.

Table 2. Means of score and significantly of the nurses knowledge regarding to the nature of cardiogenic shock

	Nurses' knowledge about cardiogenic shock	I know	I do not Know	M.S*	C.S**
1	Cardiogenic shock occur when heart loss its pumping ability because of conditions that directly affect heart function.	49	1	1.98	S
2	Cardiogenic shock causes are Congenital heart disease, Myocardial infarction and myocardial necrosis.	44	6	1.88	S
3	Cardiogenic shock has some early clinical manifestations; e.g.: coma, bradycardia, clammed and bluish skin, and hypotension (90mm/Hg).	45	5	1.9	S
4	The physiological nature of cardiogenic shock is reducing in cardiac output with increase heart pumping to compensate the hypotension.	41	9	1.82	S
5	The differentiation between various types of shock such as: hypovolemic shock, cardiogenic shock and septic shock.	38	12	1.76	S

*M.S= Mean of Score **C.S= Correlation of Significantly

This table shows that items related to nurses' knowledge about cardiogenic shock were highly mean of score and nurses have more knowledge at items (Cardiogenic shock occur

when heart loss its pumping ability because of conditions that directly affect heart function) and (Cardiogenic shock has some early clinical manifestations; e.g.: coma, bradycardia, clammy and bluish skin, and hypotension 90mm/Hg).

Table 3. Means of score and significantly of the nurses knowledge regarding to the nursing care cardiogenic shock patients.

N o.	Nurses' knowledge about clinical nursing care for patients with Myocardial Infarction	I know	I do not know	M.S*	C. S*
1	Monitor and measure cardiac activity through measures blood pressure, arterial blood pressure and venous blood pressure.	46	4	1.92	S
2	Monitor and measure cardiac activity through measures venous blood pressure.	46	4	1.92	S
3	Monitor and measure the balance of body fluids through the hourly measure of the fluids output and based on physician order.	47	3	1.94	S
4	Measure body temperature and respiration every hour and according to physician order.	48	2	1.96	S
5	Measure blood gases and glucose.	46	4	1.92	S
6	Initiate give the patient Atropine, oxygen, Aortic Balloon, meduritics, and warm the patient.	47	3	1.94	S
7	put the nursing care plan according to priorities of care that begin with treating respiratory problems such as dyspnea by giving oxygen therapy by mask.	48	2	1.96	S
8	Treatment of heart problems by giving intravenous fluids, monitor prothrompine time (PT) and blood chemistry.	44	6	1.88	S
9	Measure the level of consciousness and monitor the patient for unconsciousness.	41	9	1.82	S
10	Reduce patient chest pain with myocardial infarction by giving him analgesics and vasodilators drug.	39	11	1.78	S
11	Meet the personal needs of the patients via providing the appropriate care of wound caring and intravenous injection sites.	45	5	1.9	S
12	Put the patient at fowler position and limits the patient activity.	43	7	1.86	S
13	Reduce the psychological impact of this disease e.g (the fear of death) by y supporting the patient and his family psychologically through health teaching.	46	4	1.92	S
14	Keeping give the patient low cholesterol and salt diet.	49	1	1.98	S

*M.S= Mean of Score **C.S= Correlation of Significantly

This table indicates that items related to nurses' knowledge about clinical nursing care for patients with cardiogenic shock were high mean of score for all items.

Table 4. Cross-tabulation between Level of Nurses' Knowledge and the Nursing Care toward Cardiogenic Shock.

Knowledge Level		Nursing Care		Total
		Moderate	good	
Poor	Within Group	3 (60.0%)	2 (40.0%)	5
	Within Level	60.0%	4.4%	10.0%
Moderate	Within Group	1 (50.0%)	1 (50.0%)	2
	Within Level	20.0%	2.2%	4.0%
High	Within Group	1 (2.3%)	42 (97.7%)	43
	Within Level	20.0%	93.3%	86.0%
Total	Count	5 (10.0%)	45 (90.0%)	50
	% of Total	100.0%	100.0%	100.0%

The vast majority of nurses who have good quality of nursing care had have high knowledge about Cardiogenic Shock (n = 42; 93.3%) who account the vast majority of those nurses (97.7%) and there is highly association between level of nurses' knowledge about Cardiogenic Shock and the quality of nursing care (p-value = 0.000).

DISCUSSION:

Part I: Discussion of cardiac care unit nurses demographical and clinical data.

Nurses, who are in continuous attendance with the cardiogenic shock patient, are in a prime position to ensure that the outcomes for the patient is optimizing. This not only requires accurate assessment and management skills, but also the integration of these with a good understanding of the underlying physiology associated with shock and its different aetiologies [9].

Throughout the course of the present study, it has been noted that the majority of study sample (58.0%) were female. Concerning the nurses age, the highest proportion of nurses (52.0%) at the age of (21-26) and (26-30) respectively. Related to the educational level, the highest percentages (40.0%) of the sample were an academic nurses who graduated from Colleges of Nursing. On the other hands, the highest percentages (36.0%) of nurses were with (1-5) years of experiences while the lowest percentages (16.0%) of them were have (6-10) years of experiences. Concerning the participating in training courses inside or outside the country, the results show that the highest percentages (74.0 %) were sometimes participating in training course while (8.0%) only were always participating in such courses.

Part II: Discussion of cardiac care unit nurses knowledges about cardiogenic shock

The data analysis was conducted on 5 items of the questionnaire that's assessed cardiac care unit nurses knowledge regarding to the nature of cardiogenic shock based on significantly of close response, which had been reported and manifested out of the mean of scores of these items. The results indicated that there was a high nurses knowledge grade about these items, cardiogenic shock occur when heart loss its pumping ability because of conditions that directly affect heart function and cardiogenic shock has some early clinical manifestations; e.g.: coma, bradycardia, clammy and bluish skin, and hypotension (90mm/Hg) respectively (table 2).

Intuition is a valuable source of knowledge that should be recognized in the provision of nursing care. Also, at times nurses knowledge has been perceived as a knowing, 'magic' knowing, and an amalgam of experiences and knowledge [9]. Nurses should be remains diligent in the care of cardiogenic shock regardless to the clinical complexity and potential devastating consequences of shock [10]. Some studies concluded that nurses have to value empirical knowledge above all other forms of knowledge, Examining and exploring the knowledge ergo intuition of nurses is a necessary undertaking. [11].

Part III: Discussion of cardiac care unit nurses knowledge regarding the nursing care of cardiogenic shock patients

The data analysis was conducted on 14 items of the questionnaire that assessed nurses' knowledge regarding the nursing care of cardiogenic shock patients based on significant of close responses, which had been reported and manifested out of the mean of scores of these items. The results indicated that there was a high highly mean of score and more nurses knowledge at all items except item 10 (table 3). The results indicated that there was a moderate mean of score and more nurses knowledge in items 8,9,12.

Concerning the nurses' knowledge about how to reduce patient chest pain with myocardial infarction by giving him analgesics and vasodilators drug, they are having low knowledge about this item (table 3).

On the other hand, the results indicates that there was highly means of score and more nurses' knowledge about nurses knowing how to put the nursing care plan according to priorities of care that begin with treating respiratory problems such as dyspnea by giving

oxygen therapy by mask, and how to keep giving the patient low cholesterol and salt diet[12]. In addition, the results indicate that there was moderate means of score and more nurses' knowledge about nurses knowing how to treatment of heart problems by giving intravenous fluids, monitor prothromp time (PT) and blood chemistry, measure the level of consciousness and monitor the patient for unconsciousness, and put the patient at fowler position and limits the patient activity [5].

CONCLUSION:

Nurses have an overall high level of knowledge related to the nursing care of cardiogenic shock patients. It also reveals that nurses have a high level of knowledge related to the nature of cardiogenic shock.

RECOMMENDATIONS:

Hospital and health organisations should be applying flexible and responsible steps to facilitate passages for better educational level for junior nurses and those who need high graduated level to improve their practice and knowledge related to nursing care of patients with cardiogenic shock, as well as the nature of cardiogenic shock.

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