# Effectiveness of Educational Program on Nurse's Knowledge Concerning Management of Cardiogenic Shock at AL-Mosul Teaching Hospitals

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فاعلية البرنامج التثقيفي على معارف الملاك التمريضي المتعلقة برعاية الصدمة القلبية في مستشفيات الموصل التعليمية

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**الخلاصة**

**خلفية البحث:** الصدمة قلبية المنشأ الناتجة عن دورة دموية غير كافية بسبب فشل أساسي للبطينين للعمل بفعالية. يؤدي هذا النوع من الفشل إلى تروية دموية غير كافي لأنسجة القلب، لتلبية كمية الأوكسجين والمواد الغذائية اللازمة والتي تحتاجها تلك الأنسجة بشكل طبيعي.وتعتبر قاتلة في كثير من الأحيان يؤدي كذلك إلى انتشار موت خلايا الأنسجة بسبب نقص كمية الأوكسجين والمواد الغذائية (مثل نقص سكر الدم). بسبب هذه الأمور من الممكن الأصابة بتوقف القلب لذلك يحتاج علاجها الى تظافر جهود كل من الممرضين والاطباء والفرق الطبية الاخرى معا ليطوروا طرق علاجية سريعة وحسنة التنظيم لهذه الحالة المدمرة.

**الهدف:** تهدف الدراسة الى تقييم اثر فاعلية البرنامج التثقيفي على المعارف التمريضية ازاء الرعاية التمريضية للصدمة القلبية.

**المنهجية:** أجريت دراسة شبه تجريبية في مستشفيات الموصل التعليمية للفترة من التاسع من آذار ٢٠١٥ إلى الأول من تموز ٢٠١٥. تم بناء وتطوير البرنامج والأداة من قبل الباحث لغرض انجاز الدراسة، عينة الدراسة عينة عشوائية تكونت من(٥٠) من الملاك التمريضي قسمت العينة إلى مجموعتين، مجموعة الدراسة وتكونت من (٢٥) ممرض وممرضة تعرضوا إلى البرنامج التعليمي ومجموعة ضابطة تكونت من (٢٥) ممرض وممرضة لم يتعرضوا إلى البرنامج التعليمي.

ولقياس فاعلية البرنامج التثقيفي على معارف الملاك التمريضي استخدم الباحث استمارة تقييم المعارف المتضمنة (٤٤) فقرة والمتعلقة بتقييم معارف الممرضين والممرضات المتعلقة برعاية المرضى الذين يعانون من الصدمة القلبية، تم تحديد ثبات أداة القياس من خلال الاختبار وإعادة الاختبار وتحديد مصداقية الأداة من خلال مجموعة الخبراء. لتحليل البيانات تم استخدام (الإحصاء الوصفي) التكرارات والنسب المئوية، الوزن المرجح والوسط الحسابي والانحراف المعياري والكفاية النسبية ( والإحصاء الاستدلالي) الكفاية النسبية اختبار فيشر اختبار مربع كاي ، اختبار ليفين .وذلك لإيجاد الاختلافات بين مجموعة الدراسة والمجموعة الضابطة.

**النتائج:** أظهرت نتائج الدراسة بان هناك تحسن جيد مع وجود اختلافات ذات دلالة معنوية في مجموعة الدراسة بين الاختبار القبلي والاختبار ألبعدي في الجوانب الرئيسية التي لها علاقة بالمعارف التمريضية.

**الاستنتاج:** استنتجت الدراسة الى ان معارف الملاك التمريضي الذين يعملون في الأقسام الباطنية ( وحدة الرعاية التاجية، الردهات الباطنية و قسم الطوارئ)غير وافية حول التدابير اللازمة لرعاية مرضى الصدمة القلبية.

**التوصيات:** أوصت الدراسة بتصميم وبناء برنامج تعليمي للملاك التمريضي حيث يتم من خلال البرنامج التأكيد على توجيههم وتعريفهم بالتدابير اللازمة لرعاية المرضى المصابين بالصدمة القلبية يجب ان يشتمل على دورات تدريبية مستمرة للملاك التمريضي العاملون في الأقسام الباطنية (وحدة الرعاية التاجية، الردهات الباطنية و قسم الطوارئ).

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**Abstract**

**Background:** Cardiogenic shock resulting from an inadequate circulation of blood due to primary failure of the ventricles of the heart to function effectively. As this is a type of circulatory shock, there is insufficient perfusion of tissue to meet the demands for oxygen and nutrients. Cardiogenic shock is a largely irreversible condition and as such is more often fatal than not. The condition involves increasingly more pervasive cell death from oxygen starvation (hypoxia) and nutrient starvation (e.g. low blood sugar). Because of this, it may lead to cardiac arrest (or circulatory arrest), Nurses، physicians and others health team need to work together to develop a rapid and well-organized treatment approach to this devastating condition.

**Objective:** The present study aimed to assess the effectiveness of an educational program on nurse's knowledge concerning management of cardiogenic shock.

**Methodology:** A quasi-experimental design study was carried out at AL-Mosul teaching hospitals from March 9th 2015 to July 1st of 2015. The program and instruments constructed and developed by the researcher to measure the purpose of the study. Random sample comprised of (50) nurse was divided into two groups, study group consisted (25) nurse exposed to the nursing educational program and control group consisted (25) nurse were not exposed to the program.

The measurement of the effectiveness of nursing educational program on nurses' knowledge the researcher use knowledge test includes (44) items concerning with assessment knowledge for nurses related to management of patients with cardiogenic shock. Reliability of instrument tools was determined through the use of test and retest and the instrument validity was determined through a panel of experts. The analysis of data was performed through the application of description statistic (Frequencies, Percentages, and cumulative percents, Mean of Score, Standard

Deviation, Relative Sufficiency) and Inferential statistical (Chi-Square test, Fisher Exact Probability test to present the differences between the study and control groups).

**Results:** The results of the study showed that there is good improvement with highly significant differences  in study group between pre and post tests in overall main domains. for the nurses' knowledge.

**Conclusion:** The study Concluded that that inadequate nurses' knowledge in the medical department (coronary care unit, medical ward and emergency department) toward management of patient with Cardiogenic shock.

**Recommendation:** The study recommended that an educational program can be designed and constructed for nurses through the program ,an emphasis can be directed and oriented in management of patient with Cardiogenic shock should be included continuous training for all nursing staff who work in medical department(coronary care unit, medical ward and emergency department).

**Keyword: nurses; education; program; knowledge; management; Cardiogenic shock.**

## INTRODUCTION

Cardiogenic shock is an emergency and it needs rapid diagnosis and institution of therapy. Improved long-term outcomes require immediate diagnosis and management and if needed, transfer to a tertiary care hospital[1]. The incidence of cardiogenic shock ranges from 5% to 10% in patients with AMI. Several multicenter fibrinolytics trials in Europe report a prevalence rate of approximately 7% for cardiogenic shock following AMI. The mortality rate from cardiogenic shock is approximately 50%; recent studies have reported comparable in-hospital mortality rates in the range of 56% to 67%. With the initiation of fibrinolytics, improved interventional procedures, and better medical therapies for heart failure, the mortality rates from cardiogenic shock are expected to continue to decline[2].

Effective therapy for shock must also include a prevention strategy. This requires identification of patients at high risk for shock development and selection of patients who are candidates for aggressive intervention[3].

Based on these findings, it would, therefore, be rather difficult to the patient in cardiogenic shock requires constant monitoring and intensive care. The critical care (intensive care) nurse must carefully assess the patient, observe the cardiac rhythm, monitor hemodynamic parameters, and record fluid intake and urinary output. The patient must be closely assessed for responses to the medical interventions and for the development of complications, which must be corrected immediately[4].

The nurse caring from the patient with shock or at risk for shock must understand the underlying mechanisms of shock and recognize its subtle as well as more obvious signs. Rapid assessment and rapid response are essentially to recovery[5].

The objective of this study is to evaluate the effectiveness of an educational program on nurse's knowledge concerning management of cardiogenic shock at AL-Mosul teaching hospitals.

## METHODOLOGY

A quasi-experimental design study was carried out from 9th of March 2015 to 1st of July 2015. The educational program and also instrument tools were constructed and developed by the researcher for the purpose of the study, were random sample comprised of (50) nurse was divided into two groups, study group consist of (25) nurse were exposed to the nursing educational program and control group consist of (25) nurse were not exposed to the educational program. In order to obtain accurate data and a representative sample. The criteria for the selection of the study were: Nurses that should have at least one year of experience or more; Male and female nurses; Nurses who had educational level (Nursing College, Nursing Institute, Secondary Nursing School); Nurses who worked in the medical department (CCU; emergency department and  medical ward).

The educational program was designed according to the results of nurse's assessment needs, reviewing of related scientific literature, previous studies, and scientific practical experiences of the investigator to provide nurses with adequate knowledgeabout management of patients with cardiogenic shock.

To ultimate the goal and utilize from the instrument of the research a questionnaire interview was adopted to the purpose of the data collection of research project that related to cardiogenic shock, it is consist of two section:

**Section (I):** Self-Administered Questionnaire Sheet Related to Demographic Characteristics of The staff Nurse. **Section (II):** Self-Administered Questionnaire Sheet Related to Nurses' Knowledge Toward cardiogenic shock.

It was constructed to assess nurses' knowledge toward nursing management for patients with cardiogenic shock. It consisted of (44) multiple choice questions in seven domains: **one**: Anatomy and physiology of the heart; **two**: General knowledge about cardiogenic shock; **three**: Pathophysiology of cardiogenic shock; **four**: Clinical signs and symptoms of cardiogenic shock; **five**:Assessment and diagnostic features of cardiogenic shock; **six**: **A**- drug therapy for cardiogenic shock **B**- other ways and therapeutic management for cardiogenic shock and **seven**: management of patients with cardiogenic shock divided into: prevention of cardiogenic shock;hemodynamic monitoring of cardiogenic shock; intravenous fluids and medications of cardiogenic shock; provide safety and comfort for patient of cardiogenic shock.

For the purpose of this study, the number of correct responses was used to measure of the level of knowledge of each nurse and each question composed of (4) item in alternative form of a multiple choice and give the correct answer score (1) and the incorrect answer scored (0). The same knowledge test was used for baseline and a 1-month follow up test. Scores of response are categorized according to the following:High High (75-100):4; High Low(50-74):3; Low High(25-49):2;Low Low(0- 24):1.

Nurses in the control group were exposed only to the usual activities of the units. the regular methods of information provided by the nurses or physicians. This information also included brief instructions, which was provided by the physician. If the nurses in the control group asked the researcher questions, they were instructed to refer their questions to appropriate members of the health team, e.g., nurses and the physician.

**Statistical Analysis**

The data of present study were analyzed through the application of two statistical approaches .A descriptive statistical approach that includes Frequency, Percentage, $x \mp S.D.$=Arithmetic Mean (x) and Std. Dev. (S.D.), and an Inferential statistical approach that includes Chi-Square test, t.test, Fisher Exact Probability test (F.E.P.T.), McNemar test, Mann-Whitney U and Wilcoxon Signed Ranks test for testing two category nominal scale variables Results were determined as highly significant at (P<0.01), significant at (P<0.05) and non significant at (P>0.05).

## RESULTS:

**Table (1): Distribution of Demographic Data in The Study and Control Groups From Medical Department Nurses: No=25**

| Variables | Groups | Study | | | Control | | | C.S. |
|---|---|---|---|---|---|---|---|---|
| | | F. | % | Cum% | F. | % | Cum% | P$_{-value}$ |
| Age years | 20 - 24 | 9 | 36 | 36 | 10 | 40 | 40 | $\chi^2$-test P=0.620 NS |
| | 25 - 29 | 8 | 32 | 68 | 5 | 20 | 60 | |
| | 30 - 34 | 1 | 4.0 | 72 | 4 | 16 | 76 | |
| | 35 - 39 | 6 | 24 | 96 | 5 | 20 | 96 | |
| | 40 > | 1 | 4 | 4 | 1 | 4 | 100 | |
| | $\bar{x} \mp S.D.$ | 28.56 $\mp$ 7.64 | | | 28.28 $\mp$ 7.30 | | | |
| Gender | Male | 11 | 44 | 44 | 13 | 52 | 52 | FEPT P=0.571 NS |
| | Female | 14 | 56 | 100 | 12 | 48 | 100 | |
| Work Place | CCU Unit | 10 | 40 | 40 | 14 | 56 | 56 | $\chi^2$-test P=0.513 NS |
| | Medical ward | 14 | 56 | 96 | 10 | 40 | 96 | |
| | Emergency department | 1 | 4 | 100 | 1 | 4 | 100 | |
| Work Time | 24 hrs | 9 | 36 | 36 | 12 | 48 | 48.0 | FEPT P=0.086 NS |
| | 7 hrs. | 16 | 64 | 100 | 13 | 52 | 100 | |
| Education level (certification) | Nursing college | 12 | 48 | 48 | 12 | 48 | 48 | $\chi^2$-test P=0.345 NS |
| | Nursing Institute | 5 | 20 | 68 | 2 | 8 | 52 | |
| | Secondary Nursing School | 8 | 32 | 100 | 11 | 44 | 100 | |

**Freq.=Frequencies,%=Percentages, Cum. = cumulative percents, C.S. : Comparison Significant, FEPT: Fisher Exact Probability Test; $\bar{x} \mp S.D.$ =Arithmetic Mean ($\bar{x}$) and Std. Dev. (S.D.)., χ2-test=Chi-Square test. , P=P-value, NS : Non Significant at P >0.05, CCU: coronary care unit.**

Table (1) revealed that the majority (36%) of nurses in the study group are within the age group (20 - 24) while (40%) of nurses in the control group and (44%) of nurses in the study group were male and (52%) of nurses in the control group were male. According to the educational level, (48%) of nurse in the study group and are same percentage in the control group are nursing college.Statistically ,there is no significant difference between study and control groups related to age group ,gender, and educational level when analyzed by chi-square.

**Table (2): Distribution of Demographic Data in The Study and Control Groups in Working Place:**

| Expert years & Kind of Training | Groups | Study | | Control | | C.S. |
|---|---|---|---|---|---|---|
| | | Freq. | % | Freq. | % | P$_{-value}$ |
| Expert years | <5 yrs. | 16 | 64.0 | 15 | 60.0 | $\chi^2$-test P=0.982 NS |
| | 5 - 9 yrs. | 5 | 20.0 | 5 | 20.0 | |
| | 10 - 19 yrs. | 3 | 12.0 | 4 | 16.0 | |
| | 20 > yrs. | 1 | 4.0 | 1 | 4.0 | |
| Expert year in CCU | None | 14 | 56.0 | 10 | 40.0 | FEPT P=0.258 NS |
| | Yes | 11 | 44.0 | 15 | 60.0 | |
| Expert year in medical ward | None | 10 | 40.0 | 15 | 60.0 | FEPT P=0.157 NS |
| | Yes | 15 | 60.0 | 10 | 40.0 | |
| Expert year in emergency department | None | 22 | 88.0 | 23 | 92.0 | FEPT P=0.637 NS |
| | Yes | 3 | 12.0 | 2 | 8.0 | |
| Trainings in cardiac care | None | 21 | 84.0 | 20 | 80.0 | FEPT P=0.713 NS |
| | Yes | 4 | 16.0 | 5 | 20.0 | |
| | | | | | | |

**Freq.=Frequencies,%=Percentages, Cum. = cumulative percents, C.S. : Compsarison Significant P=P-value,$\chi^2$-test=Chi-Square test. , NS: Non Significant at P >0.05 , CCU: coronary care unit.**

Table (2) indicated that the majority( 64%)of nurses in the study group and (60%) in the control group had expert year less than 5years. Concerning trainings in cardiac care, (84%) of nurses in the study group and (80%) of nurses in the control group hadn't training in the cardiac care.

**Table (3): Comparison Significant of Pre-Test Knowledge Scores Between the Study and Control Groups.**

| Main Domains | Main Domains of Knowledge | No. | Pre– Study | | | Ass. | Pre– Control | | | Ass. | P. value | C.S. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | M.S. | S.D. | R.S.% | | M.S. | S.D. | R.S.% | | | |
| Main Domains According To Nurses Knowledge | First/ Heart Anatomy | 25 | 0.44 | 0.506 | 44 | F | 0.44 | 0.506 | 44 | F | 1.000 | NS |
| | Second/ General knowledge about CS | 25 | 0.24 | 0.435 | 24 | F | 0.48 | 0.509 | 48 | F | 0.005 | HS |
| | Third/ pathophysiology of CS | 25 | 0.44 | 0.506 | 44 | F | 0.40 | 0.500 | 40 | F | 0.578 | NS |
| | Four/ clinical signs and symptoms of CS | 25 | 0.04 | 0.200 | 4 | F | 0.20 | 0.408 | 20 | F | 0.000 | HS |
| | Five/ assessment and diagnostic features of CS | 25 | 0.48 | 0.509 | 48 | F | 0.32 | 0.476 | 32 | F | 0.070 | NS |
| | Six/ part 1/ drug therapy | 25 | 0.20 | 0.408 | 20 | F | 0.12 | 0.332 | 12 | F | 0.128 | NS |
| | Six/ part 2/ other ways | 25 | 0.36 | 0.489 | 36 | F | 0.52 | 0.509 | 52 | S | 0.173 | NS |
| | Seven/nursing management/ part1/ prevention | 25 | 0.76 | 0.435 | 76 | S | 0.92 | 0.276 | 92 | S | 0.002 | HS |
| | Seven/ part2/ hemodynamic  monitoring | 25 | 0.44 | 0.506 | 44 | F | 0.40 | 0.500 | 40 | F | 0.587 | NS |
| | Seven/ part3/ Give fluid and medication | 25 | 0.60 | 0.500 | 60 | S | 0.52 | 0.509 | 52 | S | 0.321 | NS |
| | Seven/ part4/ safety and comfortable | 25 | 0.80 | 0.408 | 80 | S | 0.72 | 0.458 | 72 | S | 0.196 | NS |
| Domains | Overall Questions According To Nurses Knowledge | 25 | 0.32 | 0.476 | 32 | S | 0.36 | 0.489 | 36 | F | 0.563 | NS |

**M.S. =Mean of score  , SD = Standard Deviation  ,R.S%=Relative Sufficiency , Ass.= assessment. ,C.S. : Comparison Significant , CS: Cardiogenic Shock,  No.= Number , NS : Non Significant at P >0.05  , Hs : Highly Significant at P< 0.01, F : Failure ; S : Success.**

Table (3) shows that there is no significant differences between  study and control groups in all  main domain at pre-test for both study and control groups except (Second/ General knowledge about CS), (Four/ clinical signs and symptoms of CS), (Seven/nursing management/ part1/ prevention)shows that there is high significant difference for nurses knowledge when analyzed by Mann-Whitney U.

**Table (4): Comparison Significant of Post-Test Knowledge Scores Between the Study and Control Groups**.

| Main Domains | Main Domains of Knowledge | No. | Post – Study | | | Ass. | Post – Control | | | Ass. | P. value | C.S. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | M.S. | S.D. | R.S.% | | M.S. | S.D. | R.S.% | | | |
| Domains According To Nurses Knowledge | First/ Heart Anatomy | 25 | 1.00 | 0.00 | 100 | S | 0.52 | 0.50 | 52 | S | 0.000 | HS |
| | Second/ General knowledge about CS | 25 | 1.00 | 0.00 | 100 | S | 0.44 | 0.50 | 44 | F | 0.000 | HS |

| | | No. | M.S. | SD | R.S% | C.S. | M.S. | SD | R.S% | F/S | P | C.S. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Third/ pathophysiology of CS | 25 | 0.95 | 0.20 | 95 | S | 0.36 | 0.48 | 36 | F | 0.000 | HS |
| | Four/ clinical signs and symptoms of CS | 25 | 1.00 | 0.00 | 100 | S | 0.36 | 0.48 | 36 | F | 0.000 | HS |
| | Five/ assessment and diagnostic features of CS | 25 | 0.95 | 0.20 | 95 | S | 0.40 | 0.50 | 40 | F | 0.000 | HS |
| | Six/ part 1/ drug therapy | 25 | 0.91 | 0.28 | 91 | S | 0.32 | 0.47 | 32 | F | 0.000 | HS |
| | Six/ part 2/ other ways | 25 | 1.00 | 0.00 | 100 | S | 0.64 | 0.48 | 64 | S | 0.000 | HS |
| | Seven/nursing management/ part1/ prevention | 25 | 1.00 | 0.00 | 100 | S | 0.76 | 0.43 | 76 | S | 0.000 | HS |
| | Seven/ part2/ hemodynamic monitoring | 25 | 1.00 | 0.00 | 100 | S | 0.44 | 0.50 | 44 | F | 0.000 | HS |
| | Seven/ part3/ Give fluid and medication | 25 | 1.00 | 0.00 | 100 | S | 0.72 | 0.45 | 72 | S | 0.000 | HS |
| | Seven/ part4/ safety and comfortable | 25 | 1.00 | 0.00 | 100 | S | 0.76 | 0.43 | 76 | S | 0.000 | HS |
| Domains | Overall Questions According To Nurses Knowledge | 25 | 1.00 | 0.00 | 100 | S | 0.44 | 0.50 | 44 | F | 0.000 | HS |

**M.S. =Mean of score, SD = Standard Deviation, R.S%=Relative Sufficiency, Ass.= assessment., C.S. : Comparison Significant, CS: Cardiogenic Shock, No.= Number,Hs : Highly Significant at P< 0.01, F : Failure; S : Success.**

Table (4) shows that there is highly significant differences between study and control groups at post-test in overall main domains for nurses knowledge when analyzed by Mann-Whitney U.

**Table (5): Suggested Score of Assessment Through the "Percentile Transformed "Between The Study and Control Groups at two period (Pre and Post-Test) for Nurse's Knowledge.**

| Period | S.G.O.A. | Study | | Control | |
|--------|----------|-------|-------|---------|-------|
| | | Frequency | Percent | Frequency | Percent |
| Pre | ( 0 - 24 ) : 1 | 2 | 8.0 | 1 | 4.0 |
| | ( 25 – 49 ) : 2 | 20 | 80.0 | 23 | 92.0 |
| | ( 50 – 74 ) : 3 | 3 | 12.0 | 1 | 4.0 |
| | (75 – 100) : 4 | 0 | 0.0 | 0 | 0.0 |
| $\bar{x} \mp S.D.$ | | 36.45 $\mp$ 8.84 | | 36.45 $\mp$ 8.10 | |
| Post | ( 0 - 24 ) : 1 | 0 | 0.0 | 1 | 4.0 |
| | ( 25 – 49 ) : 2 | 0 | 0.0 | 17 | 68.0 |
| | ( 50 – 74 ) : 3 | 3 | 12.0 | 7 | 28.0 |
| | (75 – 100) : 4 | 22 | 88.0 | 0 | 0.0 |
| $\bar{x} \mp S.D.$ | | 87.78 $\mp$ 9.71 | | 44.91 $\mp$ 10.97 | |

S.G.O.A. : Suggested Groups of Assessments, Freq.=Frequencies, %=Percentages,
$\bar{x} \mp S.D.$=Arithmetic Mean ($\bar{x}$)and Std. Dev. (S.D.).

Table (5) shows high percentile transformed (80%) of suggested group of assessment between (25-49):2 for pre-test of study group with mean score and standard division (36.45 $\mp$ 8.84 ) , while (92%) percentile transformed of the same suggested group of assessment between(25-49):2 for pre-test of control group with mean score and standard division(36.45 $\mp$ 8.10).this table Also, shows high percentile transformed (88%) of suggested group of assessment between (75- 100):4 for post –test of study group, with mean score and standard division (87.78 $\mp$ 9.71), while (68%) percentile transformed for post –test of control group remain in the same (25-49):2 suggested group of assessment of pre-test of control group, with mean score and standard division (44.91 $\mp$ 10.97). for nurses knowledge between the study and control groups at pre and post-test.

## DISCUSSION:

Cardiogenic shock is the most common cause of death inpatients hospitalized with acute myocardial infarction and is associated with a poor prognosis. More than 75% of cases are due to extensive left ventricular infarction and ventricular failure. To improve outcomes, cardiogenic shock needs to be recognized early in its course and its cause needs to be diagnosed rapidly[6]. Analysis of nurses demographic characteristics ensure equivalence in both groups and there are no significant difference between study and control group. This result of the study is accepted in the quesi- experimental study. This study reveals that the majority of nurses in the study group (50) who were randomly allocated to either a control group (n= 25) or study group (n=25). This study revealed that the majority of the study sample with age ranged from 20-53 years with the mean age of the nurses was (28.56± 7.64) years for the study group and (28.28± 7.30) years for the control group. Supported of this study[7]. reported that the subjects comprised of 111 nurses working at Tanta Cancer Institute, with age ranged from 20-44 years and[8]. was in contrast with the present study and stated that A high percentage (84.29%; n=59) of them belonged to the age group of 20-25 years and the mean ± SD age of the respondents was 22.07 ± 2.30 years (Table 1).

The present study confirm that the majority of the study sample was younger than 20 years was range from 20- 53 years. In this study, the majority of nurses in the study group (56%) are female and in the control group (48%) are female, ( Table 1). Supported of this study[9]. stated that the majority of the nurses were female and [7].reported that majority of nurses were females (87.4%). The present study confirm that the most nurses at the medical

department were female. Relative to their educational status, most of the nurses in the study group (48%) and the same percentage for the control group are nursing college related to educational level for nurses.(Table 1). Results in accordance with[10]. who mentioned that university students showed poor theoretical knowledge and demonstrated willingness and motivation for courses on basic life support. Whereas[7]. was in contrast with the present study and stated that the majority of the nurses are had general diploma in nursing. The present study confirm that the majority of the nurses in the medical department are nursing college and also they have inadequate theoretical knowledge about nursing management for patients with cardiogenic shock. This study demonstrated that the most common of expert years in medical department less than 5 years (64%) in the study group and (60%) in the control group. ( Table 2).[7]. stated that less than one third of nurses who working in the medical department had from 11-15 years of experience (31.5%).[8]. was in contrast with the present study and stated that the majority of the nurses (168 ;53% )with average years of experience of less than10 years [11] .stated that the mean age of respondents was 22.07 years and the mean of years of experience was11.45. The present study confirm that the nurses at the medical department are recently employed withlimited experiences and training in medical department.

This study showed that there is no significant differences at pre-test of items (heart anatomy; pathophysiology of CS; assessment and diagnostic features of CS; drug therapy; other ways for management; hemodynamic monitoring; Give fluid and medication; safety and comfortable) between study and control groups(Table 3). The present study confirm that educational program that keeps nurses actively employed and informed about a cardiogenic shock and specific medical field. This study revealed that there is no significant differences of pre test on knowledge between study and control groups but there is highly significant of post test on knowledge between study and control groups.(Table 4). The present study confirm that the program is designed to meet the needs of nurses currently employed in medical department who wish to improve their knowledge and skills, or nurses who are currently working in other settings and wish to prepare themselves to function effectively in medical department.

This study showed that the knowledge score was divided into low low (0-24):1; low high (25-49):2; high low (50-74):3; high high (75-100): 4. The response after the program for the study group had been record differences between high low (3;12%) and high high (22;88%) (Table 5).[10] mentioned that the study revealed adisappointing level of knowledge of the fundamentalsof basic life support in both study groups. The finding of the present study proved that nurse's knowledge scores were poor in all knowledge items pre test which has been strongly increased immediately post the program. which may be explained that the nurses lacked the motivation to review the handout which has been given to them in the implementation phase, and that the retention of knowledge quickly deteriorates if not used or updated regularly.

## CONCLUSION:
The finding of the present study proved that nurse's knowledge scores were poor in all knowledge items pre test which has been strongly increased immediately post the program.

## RECOMMENDATION:
1. Hospitals and health organisations should be applying flexible and responsible steps to facilitate passages for better educational level for nurses who working in medical departement to improve their knowledge related to nursing management of patients with cardiogenic shock.
2. The nurses in these units should have sufficient updated knowledge about critical care, especially about cardiogenic shock.

## REFERENCES:

1. Khalid L, and Dhakam S.H., A Review of Cardiogenic Shock in Acute Myocardial Infarction, *Current Cardiology Reviews*, 2008; 4: p.p., 35.
2. Sharma S., Zevitz M. Cardiogenic shock. eMedicine 2005. Available at: http://www. emedicine.com/med/topic285.htm. Accessed June 1, 2007.
3. Cove M, MacLaren G., Clinical review: mechanical circulatory support for cardiogenic shock complicating acute myocardial infarction, *Critical Care* 2010, 14: P. 235.
4. Brunner &Suddarth's Textbook of Medical-Surgical Nursing, 10th ed, SC Smeltzer and B. Bare (eds). Lippincott Williams & Wilkins, 2006 Lippincott Williams & Wilkins.
5. Smltzer, S.C., and Bare, B.G., Textbook of medical – surgical nursing 10th edition, Philadelphia, Lippincott Williams, 2004, pp. 246,256, 673,674.
6. Topalian S, Ginsberg F, Parrillo JE. Cardiogenic shock. *Crit Care Med* 2008; 36(suppl): S66-74.
7. Hend M. E; Amany L. A and Omibrahem A. E: Effect of Cardiopulmonary Resuscitation Training Program on *Nurses Knowledge and Practice Life Science Journal* 2012;9**(4).**
8. Sita ,P and Valarmathi S: Knowledge of Nurses Towards Cardio-pulmonary Resuscitation in a Tertiary Care Teaching Hospital in *Nepal Journal of Clinical and Diagnostic Research*. 2011 .Vol-5**(8):** 1585-1588.
9. Hussain M, Lyneham J. Cardio-pulmonary resuscitation knowledge among nurses who work in Bahrain. *International Journal of Nursing Practice*,2009; 15 **(4):** 294-302.
10. Damjan L, Bojan L, Jerneja G, : Impact of additional module training on the level of basic life support knowledge of first year student at the university of Maribor. *International Journal of Emergency Medicine*, 2011; 4:16.
11. Parajulee S, Selvaraj V. Knowledge f nurses towards cardiopulmonary resuscitation in a tertiary care teaching hospital in Nepal. *Journal of Clinical and Diagnostic Research,* 2011; 5**(8):** 1585- 1588.