"Determination of Nnurses' knowledge Toward Care Provided to Patients with Acute Myocardial Infarction in Al-Najef City"

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الخـلاصـــــة

أجريت دراسة وصفية لمعارف الممرضين لتقيم العناية التمريضية المقدمة للمرضى المصابين باحتشاء العضلة القلبية.

وهدفت الدراسة إلى تقييم معارف الممرضين حول العناية التمريضية المقدمة للمرضى المصابين باحتشاء العضلة القلبية الحاد. وإيجاد العلاقة ما بين معارف الممرضين والعوامل الديموغرافية.

لقد تم أجراء هذه الدراسة في مدينة النجف الشرف للفترة الممتدة من 25/ 12/ 2010 إلى 4/12/ 2011، وشملت عينة الدراسة (38) من الكادر التمريضي .

وكانت العينة ماخوذه بشكل عشوائي من وحدة العناية القلبية وقسم الطوارئ و الردهات الباطنية في مدينة الصدر الطبية التعليمية و مستشفى الحكيم العامّة في مدينة النجف الشرف وبواقع (19) ممرض من مستشفى الصدر التعليمي (19) ممرض في ومستشفى الحكيم التعليمي.

وتم جمع ألعينه من خلال تكوين استمارة استبيانيه متكونة من جزئيين: الجزء الأول وهو يخص المعلومات الديموغرافية ويتكون من (8) فقرات أما الجزء الثاني يتعلق معلومات الممرضين الخاصة باحتشاء القلبية.

أن البيانات التي جمعت في البحث تم تفسيرها من خلال استخدام الإحصاء الوصفي (التكرار والنسبة المئوية) ومن خلال استخدام الإحصاء ألاستنتاجي (معامل الارتباط بيرسون ووزن الإجابة ومربع كآي).

وقد بينت نتائج الدراسة على أن المستوى العرفي للمرضين ليس بالشكل الذي يطمح إليه واعتماداً على النتائج أعلاه فان هذه الدراسة توصي بضرورة الاعتماد على كادر تمريضي متخصص عند التعامل مع مثل هكذا نوع من الأمراض وذلك للحصول على مهارة كافييه لتقديم العناية للمرضى المصابين باحتشاء العضلة القلبية، ويجب وضع برامج تعليمية ودورات تدريبية لتحسين معارف الكادر التمريضي الذي قديم العناية التمريضية، ونحتاج إلى دراسة أكبر لبيان تأثيرات المتغيّرات المختلفة على معارف الممرضين.

Abstract

the researcher apply a descriptive study to determine the nurses' knowledge about the care provided to patient with myocardial infarction.

This study aims at the determinate the nurses' knowledge about care provided to Acute MI patients. **The setting of study:** The study was performed in Al-Najaf Health Directorate; between (December 2010- April 2011), in Al-Sadder Medical City - in CCU, ICU and ED and Medical Wards, AL-haqeem general hospital CCU and ED. The Sample of the study included (19 subjects) of nursing staff used to work at the above units. **The sample of the study**: A randomized (simple random sample) of the study consists of (38) nurses choose purposively who are working in Al-Saddar Medical City and AL-Haqeem General Hospital Coronary care unit & Emergency department (38 nurse). **The data were collected:** The data, which were collected in the (2) hospitals for the period from 10 December 2010 to 15 April 2011, include in sequence:-1-socio- demographic characteristic, which includes 8 variables(age, the gender, place of work, duration of employment, training session, level of education, number of employers, time of work.)2-the questionnaire about acute myocardial infarction was presented to the nurses to fill in during the period from 15 February to 2 March. **The data were analyzed** through the application of descriptive statistical analysis that include (frequency, and Percentages [%]), and the application of inferential statistical analysis that included (chi-square the person correlation coefficient, Mean of scores [MS], and Standard Deviation. [S.D]). **The results of the study**: The result of the study showed that the nursing care did not reach the desired level due to the deficiency in the level of knowledge and practice of the nursing staff and its effect on the type of nursing care. Based on the research of the study, **the study recommended:** Based on the above results, this study recommends the necessity for a specialized nursing care when dealing with such disease and the importance of the continuous development of the nursing care through a well prepared educational programs.

Introduction

The cardiovascular system is composed of the heart and a closed system of vessels including the arteries, veins and capillaries.

Cardiovascular disease is a major health concern in the United States according to statistics of the American Heart Association. In 1998 [6] single leading cause of death in America was coronary heart disease (CHD), which was responsible for one of every five U.S. deaths. About 220,000 people a year die of sudden death without ever reaching the hospital, usually because of ventricular fibrillation [14].

With cardiovascular disease a significant health problem in the United States, efforts to reduce it that target those especially at risk are greatly needed. High blood pressure, the silent killer, occurs in one in four adults, with approximately one third unaware that they have it.

Lifestyle plays a major role in risk factors for cardiovascular disease. Smoking contributes to approximately one in five cardiovascular diseases deaths. Dietary fat intake accounts for approximately 34 percent of the American diet, which increases cholesterol [14]

Coronary occlusion, heart attack, and MI are terms used synonymously, but the preferred term is MI. The area of infarction takes time to develop1. [14]

Immediate treatment for suspected acute myocardial infarction includes oxygen, aspirin, and sublingual glycerol trinitrate (colloquially referred to as nitroglycerin and abbreviated as NTG or GTN). Pain relief is also often given, classically morphine sulfate. [5]

Infarctions may be classified according to myocardial thickness and the location of affected tissue. Although the majority of MIs occur in the left ventricle, more right ventricular involvement is being recognized. Left ventricular infarctions are classified as inferior (diaphragmatic), anterior, and posterior. Right ventricular infarctions are usually not differentiated by a specific location. Transmural, or Q-wave, infarctions involve 50% or more of the total thickness of the ventricular wall and are characterized by abnormal Q waves and ST-T wave changes. Partial-thickness infarctions (also called subendocardial, nontransmural, and non–Q-wave infarcts) are characterized by ST-T wave changes but no abnormal Q waves. [5]

Acute myocardial infarction (MI), commonly known as a “heart attack”, results in the death of heart muscle. An AMI occurs from a partial or complete blockage of a coronary artery, which decreases the blood supply to the cells of the heart supplied by the blocked or necrotic coronary artery. The extent of the cardiac damage varies depending on the location and amount of blockage in the coronary artery. [14]

The ability of the heart to contract, relax, and propel blood throughout the body requires healthy cardiac muscle. When the patient has an MI, part of the heart muscle no longer functions as it should. Cardiac conduction, blood flow, and function can be dramatically altered by an MI

The incidence of AMI is most common with typically men over 40 with atherosclerosis development. Although MIs can occur at any age in men or women, women who smoke and use oral contraceptives are at greater risk for AMI. [14]

The nurse caring from the patient with myocardial infarction or at risk for infarction must understand the underlying mechanisms of infarction and recognize its subtle as well as more obvious signs. Rapid assessment and rapid response are essentially to recovery [8].

Myocardial infarction requiring team action by many health care providers, including nurses, physicians, laboratory technicians, pharmacists and respiratory therapy. [10].

- Acute myocardial infarction (AMI) or heart attack is one of the most common causes of death in developed nations.
- In the United States, diseases of the heart are the leading cause of death, causing a higher mortality than cancer (malignant neoplasms) [12].Coronary heart disease is responsible for 1 in 5 deaths in the U.S.. Some 7,200,000 men and 6,000,000 women are living with some form of coronary heart disease. 1,200,000 people suffer a (new or recurrent) coronary attack every year, and about 40% of them die as a result of the attack.
- In the United States, approximately 1.5 million MIs occur each year and approximately 500,000 to 700,000 people die each year from ischemic heart disease. MI is one of the most common causes of death, with a mortality rate of approximately 25%. In addition, more than 50% of sudden deaths occur within 1 hour of the onset of symptoms. [11]
- In India, cardiovascular disease (CVD) is the leading cause of death.[8] The deaths due to CVD in India were 32% of all deaths in 2007 and are expected to rise from 1.17 million in 1990 and 1.59 million in 2000 to 2.03 million in 2010. Although a relatively new epidemic in India, it has quickly become a major health issue with deaths due to CVD [9].
- The specialist nurse plays an important role in educating and counseling patients with Acute MI to prevent further myocardial damage detect complication and promote patient recovery.

Objectives of the study:

1- To determine the nurses' knowledge concerning management of patients with Acute Myocardial Infarction.

2- To determine the relationship between nurses' knowledge and the socio-demographic characteristics of the nurses such 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 (CCU) and emergency department (ED).

Materials and Methodology

1- Administrative Arrangement:

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 AL-Najaf Health Directorate in order to conduct the study in Al-Sadder Medical City, AL-Hakeem General Hospital.

2- Setting of the study:

The study was carried out in Al-Najaf Health Directorate; between (December 2010-April 2011).The study was established by data collected from nurses working in Al-Sadder Medical City - in CCU (coronary care unit), ICU (intensive care unit) , ED(Emergency department) and Medical Wards, AL-haqeem general hospital CCU(coronary care unit) and ED (Emergency department).

3- Design of the study:

A descriptive quantitative study was carried out to determine and verify from nurses' knowledge concerning management of patients with acute myocardial infarction to achieve objective of the present study.

4- The Sample of the study:

A randomized (simple random sample) of the study consists of (38) nurses choose purposively who are working in Al-Saddar Medical City and AL-Haqeem General Hospital Coronary care unit & Emergency department (38 nurse). The total of the sample 20 males and 18 females of age ranged between (22-51) years were included in this study.

5- Tool of the study:

In order to assess of nurses' knowledge, a special questionnaire was prepared by the investigator.

Knowledge assessment questionnaire consists of:

1- General concepts of acute myocardial infarction (10 items).
2- Information about care of acute myocardial infarction (8 items).
3- General nursing information (8 items).

6- Data collection:

The data, which were collected in the (2) hospitals for the period from 10 December 2010 to 15 April 2011, include in sequence:-

- socio- demographic characteristic, which includes 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 acute myocardial infarction was presented to the nurses to fill in during the period from 15 February to 2 March.

8- Statistical analysis:

The frequency and percentage to present the distribution of demographic characteristics and level of the knowledge about care provided to patients with myocardial infraction.

Chi-square tests: It was used to determine the significant relationship between the nurse's knowledge and their demographic characteristics at $p \leq 0.01$, which was computed as: ***[1***]

$$\chi^2 = \sum \frac{(O_i - E_i)^2}{E_i}$$

Sample correlation coefficient: It was used to measure of how much linear relationship between the nurse's knowledge and their demographic characteristics at p≤ 0.01, which was computed as:

$$Correl(X,Y) = \frac{\sum (x-\bar{x})(y-\bar{y})}{\sqrt{\sum (x-\bar{x})^2 \sum (y-\bar{y})^2}}$$

[1]

The researcher depends in his study on:

1-Percentages [%], Person's Correlation Coefficients, Frequencies [F] & cumulative Percentage, Mean of scores [MS], and Standard Deviation. [S.D]

Results

Table (1): demographic characteristics of nurses about acute myocardial infarction:

Characteristics	Groups	Frequency	Percent (%)	Cumulative Percent
Age groups (years)	22-27 years	14	36.8	36.8
	28-33 years	6	15.8	52.6
	34-39 years	4	10.5	63.2
	40-45 years	10	26.3	89.5
	46-51 years	4	10.5	100.0
Gender	Male	20	52.6	52.6
	Female	18	47.4	100.0
Setting of work	Emergence	8	21.1	21.1
	ICU	6	15.8	36.8
	CCU	4	10.5	47.4
	Others	20	52.6	100.0
Years of experience	1-9 years	22	57.9	57.9
	10-19 years	6	15.8	73.7
	20-29 years	10	26.3	100.0
Training Sessions	Yes	20	52.6	52.6
	No	18	47.4	100.0
	Total	38	100.0	100.0

Table (1) shows that most of the nurses (36.8%) are between the ages (22-27) years, this result come from the all nurses work in hospital must graduate from nursing school that is lead to the age of them swing between (22) to (27). In contrast those who were considered middle age (28-33) year represented (15.8%) of the sample, and between (40-45) years represented (26.3%), and above 45 years represented (10.5%).

Regarding their gender, the majority (52.6%) of nurses were males, and (47.4%) of nurse were female. Related to place of work (21.1%) in ED and (15.8%) in the ICU, (10.5%) of nurses were working in the CCU and (52.6%) in other places.

Regarding Years of experience, those with (1-9 years) constituted (57.9%), (10-19 years) constituted (15.8%), and between (20-29 years) constituted (26.3%), Concerning the

sessions training the majority 20 nurse constituted (52.6%) have sessions training and 9 nurse constituted (47.4%) non have sessions training, depend on this result we can conclude that approximately half of nurses have training sessions which means that the nurses have not high opportunity to develop their knowledge through the training sessions.

Table (2): Level of nurse's knowledge and education concerning Acute M.I:

Knowledge and education	Item	Frequency	Percent	Cumulative Percent
Level of education	bachelor in nursing	10	26.3	26.3
	diploma in nursing	10	26.3	52.6
	Secondary school graduated	18	47.4	100.0
Level of knowledge	Good	16	42.1	42.1
	Moderate	16	42.1	84.2
	Poor	6	15.8	100.0

This table show the Concerning the level of education, that table shows a high percentage of nurses (47.4%) were graduate of school of nursing, while (26.3%) were nurses with nursing institute, the nurses from nursing college were that (26.3%), this reflect that the most of the nurses have not good opportunity to continue their education. in addition the high percentage of nurses graduate from college and institution because the coronary care unit it is very important and need the nurse gradate from college or institution.

Concerning the level of Knowledge, show 8 nurses have a good Knowledge constituted (42.1%), moderate Knowledge 8 nurses constituted (42.1%) and poor knowledge show 3 nurses constituted (15.8%). The researcher explain this result com equal to the result in level of education for this reason we found the level of knowledge have highly percentage in good and moderate.

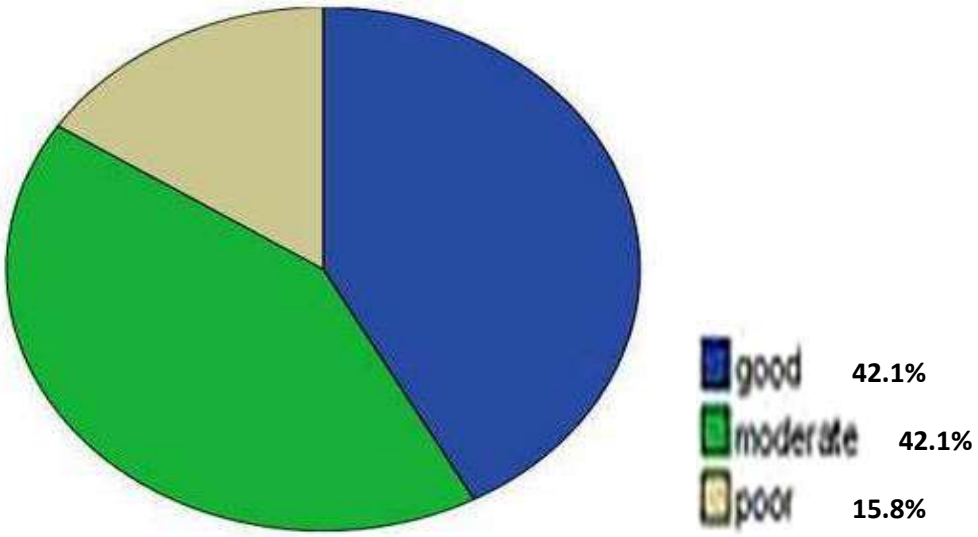

Figure (1) show the Level of nurses' knowledge and education about Acute M.I.

Table (3) Level of nurses' knowledge concerning Acute M.I for each domain of the studied:

Knowledge	Mean Of Scores	Percentage
General information about Myocardial infarction domain	1.26	34%
Information about Nursing care domain	1.31	35%
General nursing information domain	1.17	31%
Total	1.24	100%

Table (3) shows a significant difference at between the mean of knowledge of nurses about Acute M.I for each domains of the studied phenomenon according to the mean of scores with regard to means in the domain data of (information about care of Acute M.I, Information about Nursing care domain , general nursing information) in which (1.26, 1.31, 1.17) consecutive.

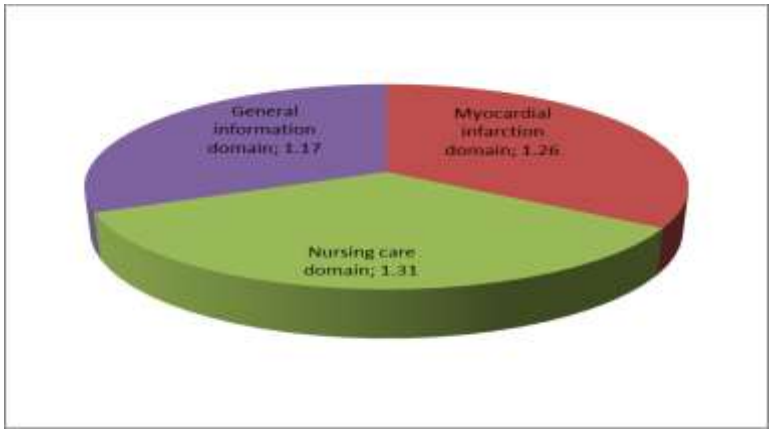

Figure (2) show the level of knowledge for each domain in the studied phenomenon.

Table (4): The association between level of knowledge and demographic characteristics of

Age	**Level of knowledge**					
	Items	**Good**	**Moderate**	**Poor**	**Total**	**p-value**
	22-27 years	6	7	4	17	0.4631
	28-33 years	5	5	0	10	
	34-39 years	2	3	0	5	
	40-45 years	2	1	2	5	
	46-51 years	1	0	0	1	
Gender	**level of knowledge**					
	Items	**Good**	**Moderate**	**Poor**	**Total**	**p-value**
	Male	8	6	6	20	0.0315
	Female	8	10	0	18	
Setting Of Work	**level of knowledge**					
	Items	**Good**	**Moderate**	**Poor**	**Total**	**p-value**
	Emergence	2	2	4	8	0.01856
	ICU	2	4	0	6	
	CCU	4	0	0	4	
	Others	8	10	2	20	
Years Of Experience	**Level of knowledge**					
	Items	**Good**	**Moderate**	**Poor**	**Total**	**p-value**
	1-9 years	8	10	4	22	0.0003
	10-19 years	4	2	0	6	
	20-29 years	4	4	2	10	
Training Sessions	**Level of knowledge**					
	Items	**Good**	**Moderate**	**Poor**	**Total**	**p-value**
	Yes	12	4	4	20	0.0136
	No	4	12	2	18	
	Total	16	16	6	38	

nurses:

This table includes the correlation between the different demographic characteristics and the level of knowledge related to Acute Myocardial Infraction in three levels (good, moderate, and poor)

The results show that there is non-significant related ship between the age and level of knowledge. Also there is non-significant relationship between the gender and level of knowledge.

In addition to that the result shows that there is a non-significant relationship between the level of knowledge and setting of work.

The above table shows that there is a significant relationship between level of knowledge and years of experience, this result means that the experience has a great effect on the nurses level of knowledge and the nurses can be develop their knowledge through the experience.

In regarding to the training sessions, the results show that there is a non-significant relationship with level of knowledge.

Table (5): Cross Tabulation Correlation between level of knowledge and the level of education:

Level of knowledge						
level of education	Item	good	moderate	Poor	Total	p-value
	bachelor in nursing	10	2	0	12	0.00588
	Diploma in nursing	4	4	2	10	
	Secondary school graduated	2	10	4	16	
	Total	18	16	6	18	

Table (5) shows that the correlation between the different of the level of knowledge and level of education, the results show that there is a significant relationship between the nurses level of knowledge and level of education.

Discussion

1- the distribution of demographic characteristics of nurses about acute myocardial infarction.

The majority of nurses (36.8%) are between the ages (22-27) years, from this result we can concludes that the majority of the nurses whom work in the hospitals are junior because hospitals needed more activity and concentration that the primary health care, the researcher pointed to this result come from the all nurses work in hospital must graduate from nursing school that is lead to the age of them swing between (22) to (27). In contrast those who were considered middle age (28-33) year represented (15.8%) of the sample, and between (40-45) years represented (26.3%), and above 45 years represented (10.5%). This result insurance through research done by Al-ftlawy (2001) indicated that the age of nurse work in hospital nearly to this founding. [1]

Regarding their gender, the majority (52.6%) of nurses were males, and (47.4%) of nurse were female, this result mean that males have more attitude for nursing occupation than females. The researcher suggest this result normally in east country because as general the male in the east country more than female nursing job.

In other side the place of work (21.1%) in ED and (15.8%) in the ICU, (10.5%) of nurses were working in the CCU and (52.6%) in other places. this result appeared because the researcher take the sample in randomization methods and in limited time.

The years of experience, those with (1-9 years) years constituted (57.9%), (10-19 years) constituted (15.8%), and between (20-29 years) constituted (26.3%), this result reflect that more nurses whom work in hospital are junior which support the first result .

Concerning the sessions training the majority 20 nurse constituted (52.6%) have sessions training and 9 nurse constituted (47.4%) non have sessions training, depended on this result we can conclude that approximately half of nurses have training sessions which means that the nurses have not high opportunity to develop their knowledge through the training sessions. The researcher explain this result come because the development accrue in our country in this time.

This result agreement with the finding obtained from Al-Mansory (2005) study that mentioned that the nurses should be enrolled in training sessions. [4]

2- The knowledge of nurses about acute myocardial infarction:

The level of education, the result shows a high percentage of nurses (47.4%) were graduate of school of nursing, while (26.3%) were nurses with nursing institute, the nurses from nursing college were that (26.3%) table (2), this reflect that the most of the nurses have not good opportunity to continue their education. in addition the high percentage of nurses graduate from college and institution because the coronary care unit it is very important and need the nurse gradate from college or institution. In other side the researcher believe the nurses work in the impertinent unites in hospital need to developing their knowledge to have accompaniment to work in these units. Table (2)

Concerning the level of Knowledge, show 8 nurses have a good Knowledge constituted (42.1%), moderate Knowledge 8 nurses constituted (42.1%) and poor knowledge show 3 nurses constituted (15.8%). The researcher explain this result cam equal to the result in level of education for this reason we found the level of knowledge have highly percentage in good and moderate. Figure (1).

3- The nurses' Knowledge about myocardial infarction:

the result indicated a significant difference at between the mean of knowledge of nurses about acute M.I for each domains of the studied phenomenon according to the mean of scores with regard to means in the domain data of (information about care of Acute M.I (35%), Information about Nursing care domain(31%)) this result appear in figure (2) and table (3)**.**

4- the association between demographical characteristics Variables of nurses with nurses' knowledge and management about myocardial infarction.

Table (4) includes the correlation between the different demographic characteristics and the level of knowledge related to Acute Myocardial Infraction in three levels (good, moderate, and poor)

The results show that there is non-significant related ship between the age and level of knowledge. Also there is non-significant relationship between the gender and level of knowledge.

In addition to that the result shows that there is a significant relationship between the level of knowledge and setting of work.

Table (4) shows that there is a significant relationship between level of knowledge and years of experience, this result means that the experience has a great effect on the nurses level of knowledge and the nurses can be develop their knowledge through the experience.

In regarding to the training sessions, the results show that there is a significant relationship with level of knowledge. this finding agreed with Enreque (2000) studies who demonstrated that the training course was effective for every level of an education status and the training course was very important to enhance a new information for the nurse.

Table (5) shows that the correlation between the different of the level of knowledge and level of education, the results show that there is a significant relationship between the nurses level of knowledge and level of education, regarding to the previous result we can concludes that the education especially in the college has a high effect on the nurses level of knowledge, and the nurses must continuous their study in nursing to increase the level of education and to apply good nursing care and practices.

This result is agreed with the finding of the information listed by Yazigi and Zahr (1989) [15] who noted a strong association between level of education and knowledge. And agree with study the study done by Al-Hakkak (2004)[3]vealed that there was a significant association between the nurses' knowledge and level of education. Another study done by Al-Mansory (2005) in Baghdad hospitals which demonstrated that there is a significant association between level of education and the nurses' knowledge. [4]

Conclusions:

According to the objectives of the present study and the results of the data analysis, the following conclusions have been inferred:

The level of education had a positive impact on the knowledge of nurses who are involved in the study, The gender of nurses has non-significant impact on knowledge, The place of work of nurses has significant impact on knowledge, The training sessions have non-significant impact on knowledge, The duration of employment has significant impact on knowledge, and the years of experience have significant impact on knowledge of nurses about myocardial infarction.

Recommendations:

According to the results of the study, the researcher puts the following recommendations:

1- The nurse in these units should have sufficient updated knowledge about critical care, especially about Acute MI.
2- Nursing staff working in the coronary care unit (CCU) and Emergency department (ED) units should be assessing after training.
3- Education programs are necessary to improve the nurse's ability dealing with management with such diseases.
4- Larger study is needed to elaborate the effects of different variables on the knowledge of nursing.
5- The nurse have good level of education give opportunity to work in cardiac units.
6- Increaser the number of training session to nurse as general and special training session to nurse work in cardiac unit .

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