Effectiveness of Nursing Intervention on Patients with Acute Myocardial Infarction in Cardiac Centers at Baghdad City Hospitals

فاعلية العناية التمريضية على مرضى إحتشاء العضلة القلبية الحاد في مراكز القلب في مستشفيات مدينة بغداد

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الخلاصة

الهدف : تقييم فاعلية تداخل الممرضين للمرضى المصابين بإحتشاء العضلة القلبية الحاد، ولمعرفة العلاقة بين ممارسات الملاك التمريضي والمعلومات الإجتماعية والديموغرافية من الجنس والعمر والمستوى التعليمي وسنوات الخبرة .

المنهجية : اجريت دراسة وصفية في مدينة بغداد في ثلاث مستشفيات (مستشفى إبن النفيس ومركز إبن البيطار والمركز العراقي لأمراض القلب في وحدات إنعاش القلب للفترة من الأول من تشرين الثاني ٢٠١٤ ولغاية التاسع عشر من آب ٢٠١٥. وتم إختيار عينة غرضية (غير إحتمالية) شملت (50) ممرض وممرضة ممن يعملون في وحدات العناية القلبية، وجمعت البيانات من خلال إستخدام إستبانة مصممة ومكونة من جزئين كان الجزء الاول يتضمن المعلومات الديموغرافية للملاك التمريضي ومعلومات تخص مكان العمل أما الجزء الثاني تضمن الاستبيان المكون من فقرات للتداخلات التمريضية للمرضى المصابين بإحتشاء العضلة القلبية الحاد. تم تحديد صدق الإستبانة من خلال عرضها على لجنة مكونة من (١٢) خبيراً من ذوي الاختصاص وثبات الإستبانة من خلال الإختبار القبلي والبعدي من خلال حساب معامل الارتباط لبيرسون (r = 0.89). تم تحليل النتائج بإستخدام الاحصاء الوصفي (التكرارات والنسبة المئوية ، الوسط الحسابي الموزون) والاحصاء الإستنتاجي (معامل الإرتباط لبيرسون ومربع كاي) .

النتائج : بينت نتائج الدراسة إن الأغلبية (22 ٪) هم من الفئة العمرية (24-28 سنة و 29-33 سنة) . وكان معظم عينة الدراسة (52 ٪) من الإناث . وإن (66 ٪) كانوا متزوجين. كانت نسبة عالية منهم (36 ٪) خريج إعدادية التمريض مقارنة مع (30 ٪) كانوا متخرجين من معهد التمريض . وأشارت عينة الدراسة أن نسبة عالية (58 ٪) من العينة دخلهم الشهري لم يكن كافي ، و(86 ٪) كانوا يعيشون في المناطق الحضرية ، معظمهم (62 ٪) يعمل في وحدة العناية التاجية. (72 ٪) منهم لديه من (1-2) دورة تدريبية داخل العراق وكانت النسبة أكثر من (40 ٪) من الممرضين لديه خدمة ما بين (1-5) سنوات ، (62 ٪) لديهم خبرة أقل من (5) سنوات في وحدات العناية القلبية ، وكان للعناية التمريضية الأثر الإيجابي القليل على صحة المريض لأنها لم تطبق بالشكل الصحيح من قبل الممرضين .

الاستنتاج : اظهرت نتائج الدراسة إن اغلب ممارسات الملاك التمريضي ضعيفة وليست بالمستوى المطلوب في وحدات العناية القلبية ، وإن تداخل الممرضين يكون أفضل كلما كان الممرض اكبر سنا ويمتلك مستوى تعليمي اعلى ولديه سنوات من الخبرة في وحدات العناية القلبية ، بينما لم يكن هناك فرق في تقديم العناية التمريضية من قبل الممرض سواء كان ذكر او انثى .

التوصيات : اوصت الدراسة بإعتماد معايير خاصة من اجل تقديم العناية التمريضية لمرضى إحتشاء العضلة القلبية الحاد ، إجراء دورات تدريبية مكثفة للملاك التمريضي داخل وخارج العراق خصوصاً للممرضين الذين يعملون في وحدات العناية القلبية مع زيادة المستوى التعليمي للممرضين من خلال منحهم الفرصة لإكمال دراستهم و الإعتماد على ممرضين كفوئيين للعمل في وحدة الإنعاش لاجل التعامل مع الحالات الحرجة والخطرة .

مفاتيح الكلمات : فاعلية العناية التمريضية ، أحتشاء العضلة القلبية الحاد ، المريض.

Abstract:-

Study aims: to assess the effectiveness of nursing intervention for patients with acute myocardial infarction, to know the relationship between the nursing intervention with their gender, age, educational level and years of experience.

Methodology: a descriptive study conducted in the city of Baghdad in three hospitals (Ibn Al-Nafees Hospital and Ibn Al-Bitar and the Iraqi Centers for heart disease) in units of cardiac resuscitation between (first of November 2014 – 19th of August 2015). A purposive (non-probability) sample included 50 nurses who works in CCU, data collected by use of a questionnaire designed which consist of two parts which as the first part includes demographic information for staff nursing and information specific to the workplace and The second part included the questionnaire which consists of paragraphs of nursing intervention for patients with acute myocardial infarction. Limitation honesty the questionnaire through presented to a panel of 12 experts from specialists and the stability of the questionnaire through pre and post test by calculating the Pearson correlation coefficient (r = 0.89). The data analyzed by using descriptive statistics (Frequencies, Percentage, Mean of scores) and deductive statistics (Pearson correlation coefficient and Chi square).

Results: Results of the study showed that the majority (22%) at age group (24-28 years and 29-33 years). Most of the study sample was 52% female. (66%) were married. The high proportion of sample (36%) was secondary school nursing compared with (30%) were graduates of the Nursing Institute. The study sample indicated that a high percentage (58%) of the sample monthly income was not enough, and (86%) were living in urban areas, most of them (62%) working in the coronary care unit. (72%) of them has a (1-2) training course in Iraq and the proportion was more than 40% of nurses has a service between (1-5) years. , (62%) have experience less than (5) years in cardiac care units, was to the nursing care little positive impact on the patient's health because it is not applied properly by nurses.

Conclusion: The study results showed that most of the nursing staff practices were poor and unsatisfactory in cardiac care units, Although nursing intervention are best whenever the nurse was older age and has a higher level of education and has years of experience in cardiac care units, while there was no difference in the provision of nursing care by the nurse whether it is male or female.

Recommendations: The study recommended the adoption of special criteria in order to provide nursing care for patients with acute myocardial infarction, Intensive training courses for the staff nursing inside and outside Iraq, especially for nurses who work in CCU with the increase in the educational level of nurses by giving them the opportunity to complete their studies and to rely on nurses specialties to work in the CCU for dealing with critical situations and dangerous.

Key words: Effectiveness of nursing care, acute myocardial infarction, the patient.

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INTRODUCTION:

Myocardial Infarction (MI) is the most severe complication of coronary artery diseases (CAD) and one of the most common health problems worldwide. CAD has conventional considerable attention because of its severe adverse effects [1][2]. Mortality rates of cardiovascular disease (CVD) in developed and developing country are 40% and 28%, respectively [3]. In our country and Iran, CVD is in addition the first leading cause of death [4].

Acute myocardial infarction (AMI) is still seen as a leading cause of decease worldwide [5]. Myocardial infarction is a traumatic health occurrence in most patients' lives and their families. Patients' transaction with a number experiences, including side effects of medical treatment and changes in their lifestyles. Patients may demonstrate negative psychological reactions such as fear, anxiety, and depression [6].

The yearly rate of myocardial infarction (MI) for men aged between (30 - 69) is about 600 per 100 000 and for women about 200 per 100 000. The majority of AMI happen in people over the age of 50, although each person is at risk of developing artheroma, leading to an MI, but there are well-known risk factors which may augment susceptibility to the disease, such as high blood pressure, smoking or lack of exercise. Consequently, health providers should emphasise preventive measures [7]. Although decreases in

mortality rates due to cardiovascular diseases in most developed countries, these diseases have become the majority important health problem and cause of mortality in many developing countries worldwide, as well as the Islamic Republic of Iran [8].

Cardiovascular diseases are commonly manifested by myocardial infarction and the World Health Organization (WHO) has recommended that myocardial infarction rates can be used as a proxy for cardiovascular disease rates in epidemiological studies [9].

Comparison of rates of myocardial infarction in different geographical areas and communities within a country tell important information that can be apply in evidence-based decision- making, research, prioritization and health systems planning in order to better recognize myocardial infarction etiology and risk factors and to assess cardiovascular disease prevention approaches [10][11].

Despite improved clinical care, increased public awareness and wide use of health innovations, coronary artery disease (CAD) leftovers the leading cause of mortality worldwide and in Palestine as well. Acute myocardial infarction (AMI) is considered the major cause of death among males 15-59 year old worldwide. Mortality rate from MI is 18.7% in males and 7.7% in females in Palestine [12].

Cardiovascular disease is the main cause for mortality in men and women. Therefore, the clinical difference in myocardial infarction (MI) between men and women might affect the diagnosis and time of decision making for treatment and thus disease outcomes. Knowledge of clinical symptoms and risk factors supply to the prognosis of MI mortality in men and women differently. Documentation of this result could be helpful in the management of patients' treatment and/or outcomes. Accumulating evidence above the last several decades regarding the treatment and outcomes for coronary artery disease reveals disparities that have apparent relationship to gender and the number of people over 85 years of age is growing faster than any other age group [13][14].

Cardio vascular diseases (CVDs) are the number one reason of death globally. An estimated 17.1 million people died from CVDs in 2004, representing 29% of all worldwide deaths. Out of these deaths, a probable 7.2 million were due to coronary heart disease [15].

Balancing myocardial oxygen supply with require (as evidenced by the relief of chest pain) is the top priority in the care of the patient with an ACS. Although administering medications as earlier described is required to complete this goal, nursing interventions are also important. Collaboration among the patient, nurse, and physician is critical in assessing the patient's reply to therapy and in altering the interventions accordingly. Oxygen must be administered along with medication therapy to help with relief of symptoms. Administration of oxygen, even in low doses, raises the circulating level of oxygen to decrease pain associated with low levels of myocardial oxygen. The route of administration, generally by nasal cannula, and the oxygen flow rate are documented. A flow rate of 2 to 4 L / min is usually adequate to preserve oxygen saturation levels of 96 % to 100 % unless chronic pulmonary disease is present. Vital signs are assessed often as long as the patient is experiencing pain and other signs or symptoms of acute ischemia. Physical rest in bed with the backrest superior or in a supportive chair helps lessen chest discomfort and dyspnea [16].

Complications that can occur after acute MI may well be caused by the damage that occurs to the myocardium and to the conduction system from reduced coronary blood flow. Because these complications can be life-threatening, close monitoring for and early

identification of their signs and symptoms be critical. The nurse monitors the patient closely for changes in cardiac rate and rhythm, heart sounds, blood pressure, chest pain, respiratory status, urinary output, skin color and temperature, sensorium, ECG changes, and laboratory values. It is essential to report promptly any changes in the patient's state to the physician, and institute emergency measures when necessary [16].

OBJECTIVES:

1- To evaluate effectiveness of nursing intervention provided to patients with acute myocardial infarction in cardiac centers at Baghdad city hospitals.
2- To identify the importance of the relationship between the attribution of effectiveness of nursing intervention and the nurses' demographic data such as gender , age , level of education , years of experience in nursing , years of experience in coronary care and training sessions in cardiac centers at Baghdad city hospitals .

METHODOLOGY:

Administrative Arrangement: Prior to the actual collection of data, a formal administrative approval was obtained to conduct the study from the ministry of health, A permission was granted from the directors of the cardiac care centers at three hospitals in Baghdad city. They are The Iraqi center for heart diseases, Ibn Al-Betar center for cardiac surgery and Ibn Al- Nafees hospital for cardiovascular and thoracic surgery.

Setting of the study: The study was conducted in CCU at three hospitals located in Baghdad city; between (first of November 2014 – 19th of August 2015). These hospitals perform management to patients with acute myocardial infarction; they include The Iraqi center for heart diseases, Ibn Al-Betar center for cardiac surgery and Ibn Al- Nafees hospital for cardiovascular and thoracic surgery. These hospitals are different in their capacity and there is one unit in each hospital.

Design of the study: This descriptive study was carried out to determine and verify from effectiveness of nursing intervention on patients with acute myocardial infarction to achieve objective of the present study.

The Sample of the study: A non-probability (purpose) sample of (50) nurses was chosen. The nurses who work in the cardiac care unit were selected as follows: the cardiac care unit (20 nurses) in Ibn Al-Betar center for cardiac surgery, the cardiac care unit (30 nurses) in Ibn Al- Nafees hospital for cardiovascular and thoracic surgery. The total of the sample 24 males and 26 females and aged was 19 years and over.

Tool of the study: In order to assess of nurses' practices, a special questionnaire was prepared by the researcher. Practices assessment questionnaire consists of:
Part I: Personal information for the nurses.
Part II: Information pertaining to the development of the qualification of the nurse.
Part III: Nursing intervention items to patients with acute myocardial infarction.

Data collection: The application of data collection by observation technique was performed from June 11th to July 28th 2015.

Scale of questionnaire: scored and rated on three level type like it scale (3) for always, (2) for sometimes and (1) for never, Nurses were observed while they were working during the day from morning to the end duty, and during the night.

Statistical analysis: The following statistical data analysis using Microsoft office excels 2007 and SPSS package ver. 20 was used in order to analysis the data of the study: The frequency and percentage to present the distribution of demographic characteristics. Person's Correlation Coefficients it was used to measure of how much linear relationship between the nurse's practices and their demographic characteristics.

RESULTS:

Table (1) Distribution of the sample according to personal information

Variable	Groups	Frequency	**Percentage %**
Gender	Male	24	48%
	Female	26	52%
	Total	50	100%
Age years	19 – 23	8	16 %
	24 – 28	11	22%
	29 – 33	11	22%
	34 – 38	4	8%
	39 – 43	7	14%
	44 – 48	3	6%
	49 and over	6	12%
	Total	50	100 %
Marital status	Married	33	66%
	Single	15	30%
	Divorced	1	2 %
	Widower	1	2 %
	Total	50	100%
Level of Education	Nursing school	3	6%
	Preparatory nursing	18	36%
	Nursing institute	15	30%
	Nursing college	14	28%
	Total	50	100 %
Monthly income	Enough	4	8%
	Enough to some extent	17	34%
	Not enough	29	58%
	Total	50	100%
Residential area	Urban	43	86%
	Urban parties	5	10%
	Rural	2	4%
	Total	50	100%

Table 1 show that the high percentage (22 %) of nurses aged between (24 – 28 Years and 29 – 33 Years). Most of them (52 %) were Females. The marital status (66 %) were married. Regarding the level of education, high percentage of the sample (36 %) were

those with preparatory nursing graduate compared with (30 %) who were with nursing institute graduate. The table also shows that a high percentage (58 %) of sample their monthly income were not enough, (86 %) of nurses were living in Urban, (10 %) live in urban parties, and (4 %) live in Rural.

Table (2) Distribution of the sample according to nursing experiences

Variables	Groups	Frequency	Percentage %
Years of work the nurse at the hospital	1 – 5	20	40 %
	6 – 10	10	20%
	11 – 15	7	14%
	16 – 20	5	10%
	21 and more	8	16%
Years of work the nurse at a coronary care unit	1 – 5	31	62%
	6 – 10	11	22%
	11 – 15	4	8%
	16 – 20	2	4%
	21 and more	2	4%
Training sessions on nursing care patients myocardial infarction by the hospital	Yes	36	72%
	No	14	28%
Training sessions on nursing care patients myocardial infarction by the other hospitals	Yes	23	46 %
	No	27	54%
Training sessions on nursing care patients myocardial infarction carried out by other institutions	Inside Iraq	10	20%
	Out of Iraq	6	12%
	No found	34	68%
Number of training sessions	0 Course	11	22%
	1 – 2 Course	18	36%
	3 – 4 Course	8	16%
	5 – 6 Course	4	8%
	7 Course and more	9	18%
The length of time of the course if you participant	0 Course	11	22%
	Less than a week	27	54%
	More than a week	12	24 %
	Total	50	100%

Table 2 reveals the years of experience in nursing, most of them (40%) and had experience between (1–5) years. The years of experience in coronary care unit, most of them (62%) had experience less than (5) years. Finally most of nurses had (72%) of (1–2) Training sessions on nursing care patients myocardial infarction.

Table (3) the mean of score of nurses according to nurses' practices concerning the nursing care to patients with acute myocardial infarction (N: 50)

#	Items	Always		Sometime		Never		MS	S
		F	%	F	%	F	%		
1	Work on the patient in just a few minutes of the arrival of the patient to transfer to the bed to	8	16%	12	24%	30	60%	1.56	M

	connect devices to the work of all nursing procedures								
2	Work a rapid assessment of the patient includes (Is the patient conscious or not? Is the patient moves when you move it to the second bed or not? Patient's response to pain How to be? Is the patient breathing properly or not?	9	18%	12	24%	29	58%	1.60	M
3	Preliminary reading of vital signs (temperature and blood pressure and pulse & breathing) because it is very important	10	20%	12	24%	28	56%	1.64	M
4	Action Overview of the patient, such as skin color, skin temperature, skin moisture	7	14%	13	26%	30	60%	1.54	M
5	Reassure the patient and work to remove tension and raise the morale of the patient and comfort psychologically & physically	11	22%	12	24%	27	54%	1.68	M
6	Reduce anxiety family the patient and reassure them and calm them down	5	10%	12	24%	33	66%	1.44	L
7	Action ECG of the patient if the patient arrives for the unit and presented to a specialist doctor	9	18%	13	26%	28	56%	1.62	M
8	Installation cannula number two and has a large volume in veins the patient if the patient did not have it	4	8%	14	28%	32	64%	1.44	L
9	Give oxygen to the patient and control the concentration of oxygen in the blood through the monitor	9	18%	13	26%	28	56%	1.62	M

F= Frequency MS= Mean of Score S= Severity {L= Low (0-1.5), M=Moderate (1.5-2.5), and H=High (2.5-3)}

The finding indicates that the mean of scores are low on items (6- Reduce anxiety family the patient and reassure them and calm them down, 8- Installation cannula number two and has a large volume in veins the patient if the patient did not have it.) and moderate on all remaining items.

Table (4) Correlation coefficient between Education level of nurses and Items of nursing intervention:

Items	Scale	Educate				Total	Sig.
		School	Preparatory	Institute	College		
		No.	No.	No.	No.		
Preparation CCU before the arrival of the patient	Always	3	18	15	14	50	
	Sometimes	0	0	0	0	0	**χ^2= . a**
	Never	0	0	0	0	0	**sig= NS**
	Total	3	18	15	14	50	
Upon the arrival of the patient to the CCU does the nurse the following matters	Always	1	1	1	3	6	
	Sometimes	1	0	10	4	15	**χ^2=22.427**
	Never	1	17	4	7	29	**sig=0.001**
	Total	3	18	15	14	50	
Receive the patient fully and pay attention to the smallest details	Always	1	1	2	4	8	
	Sometimes	1	0	9	3	13	**χ^2=21.894**
	Never	1	17	4	7	29	**sig=0.001**
	Total	3	18	15	14	50	
	Always	1	1	2	4	8	**χ^2=21.894**
	Sometimes	1	0	9	3	13	**sig=0.001**

Procedures that must be the nurse followed up on a day to the patient	Never	1	17	4	7	29	
	Total	3	18	15	14	50	
Tips and instructions given to the patient before discharge from the hospital	Always	1	1	2	4	8	
	Sometimes	1	0	9	3	13	**χ^2=21.894**
	Never	1	17	4	7	29	**sig=0.001**
	Total	3	18	15	14	50	

No. = number, χ^2 = Chi- square, sig. = significant, p-value $\leq$ 0.05 .
.a= No statistics are computed because scale 1 is a constant.
NS= NO Significant. Df= 6 .

Table 4 shows high significant relationship between Education level of nurses and nursing intervention. Item 1 is remaining out of comparison.

DISCUSSION:

Throughout the course of data analysis, the findings of the present study indicated that the high percentage (22.0 %) of nurses aged between (24 – 28 Year and 29 – 33 Year) of the sample**.** This may be explained by the fact that younger nurses were freshly graduated, more interested and motivated and much active than the older ones in these areas. This result supported by many studies, their findings indicate that more of the studied there was wise distribution of staff nurses according to their age depicts that the highest percentage (69.38%) of staff nurses were in the age group of 21-25 years, whereas the lowest percentage (7.16%) were in the age group of 31-35 years. However, (23.46%) of staff nurses were in the age group of 26-30 years **[17, 18].** In relation to gender, Most of the study sample was females (52.0 %). This result supported by many studies, their findings indicate that more of the studied there is wise distribution of staff nurses according to their gender and depicts that highest percentage is (82.6%) of staff nurses were female and only (17.4%) of the staff nurses were males **[17,20] .** Regarding marital status, results show that the high percentage of the study sample (66.0 %) was married. This result supported by study **[19],** showed in this study that 43 (61.4%) of the nurses were married. Regarding the level of education, there is a high percentage of the sample (36%) were those with preparatory nursing graduate compared with (30 %) who were with nursing institute graduate. This result supported by many studies **[18,19],** their findings indicate that more of the studied whose results show a high percentage of nurses (47.4%) were graduates of school of nursing, while (26.3%) were nurses with nursing institute and the nurses from nursing college were (26.3%). Concerning the monthly income of the study sample, the result shows that a highest percentages (58.0 %) of sample their monthly income were not enough, difficulty of economic status and low Ministry of Health, salary compared to others ministries salaries such as Ministry of Oil, salary and Ministry of Electricity salary, therefore some of the nurses see that the salary is not enough for them according to opinion of the researcher. In relation to residential area, the results indicated that the high percentage (86.0 %) of nurses were living in Urban, the geographical location of the heart Centers in Baghdad city provided an opportunity for the city's urban population of employment in this Centers.

Regarding to the development of the qualification of the nurse, the majority of the years of experience in nursing, most of them (40 %) and had experience between (1 – 5) years. This result supported by many studies, their findings indicate that more of the studied whose results show that the majority of the nurses working in Baghdad Teaching

Hospital 36 (51.4 %) for (1-5) years were employment in nursing. [17, 18, 19]. In relation to the years of experience in cardiac care unit, the results showed that most nurses (62 %) had experience less than (5) years. These results supported by results of many studies, their finding indicate that more nurses work experience less than 5 years **[18,20,21]**.

Regarding Training sessions most of nurses had (36 %) of (1 – 2) Training sessions on nursing care patients myocardial infarction, and (54 %) was Training sessions less than a week. These results agreed with the finding of many studies which were done in Iraq, their finding that higher percentage was for nurses who did not participate in have training course **[18,19,20]**.

The analyzed data in (Table 3) demonstrate that most of the nurses were low practices in all items based on statistical mean of score near 1.60. Relating Nurses' practices concerning the nursing care to patients with acute myocardial infarction: ((Work on the patient in just a few minutes of the arrival of the patient to transfer to the bed to connect devices to the work of all nursing procedures, Work a rapid assessment of the patient includes (Is the patient conscious or not? Does the patient moves when you move him to the second bed or not? Patient's response to pain How to be? Is the patient breathing properly or not?, Preliminary reading of vital signs (temperature and blood pressure and pulse rate and breathing) because it is very important, Action overview of the patient, such as skin color, skin temperature, skin moisture, Reassure the patient and work to remove tension and raise the morale of the patient and comfort psychologically and physically, Reduce family anxiety of the patient and reassure them and calm them down, Action ECG of the patient if the patient arrives for the unit and presented to a specialist doctor, Installation cannula number two and has a large volume in veins the patient if the patient did not have it, Give oxygen to the patient and control the concentration of oxygen in the blood through the monitor)). The researcher believes that the weakness in the performance of nursing staff in this area due to the absence of standard system for works in the health institutions in spite of the knowledge of the nurses for these things through his years of nursing study.

The finding of this study indicates that there is high significant relationship between the educational level of nurses and nursing intervention (Table 4).

This finding is supported by many studies, showed in their study there is a significant relationship between the nurses level of knowledge and level of education, regarding to the previous result it can be concluded that the education level especially in the college has a high effect on the nurses level of knowledge, and the nurses must continue their study in nursing to increase the level of education and to provide good nursing care and practices **[18,19,21]**.

CONCLUSIONS

The majority of nurses' intervention was poor and unsatisfactory concerning for patients with acute myocardial infarction. The study has confirmed that nurses with high educational level then better nursing intervention were provided to the patient. The Education level is a vital variable regarding nurses and nursing intervention.

RECOMMENDATIONS:

1. Special training programs should be designed and constructed for nurses in cardiac care unit to reinforce their skills and promote their experiences.
2. Increase the number of professional nurses' graduating from colleges of nursing and institutes nursing assigned to employment in CCU.
3. Providing opportunity for nurses to pursue their education to gain a better educational level for junior nurses and those who need high educational level to improve their practice and knowledge related to nursing care of patients with acute myocardial infarction.

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