Development of a package on the management of acute myocardial infarction for healthcare professionals at Jordan University Hospital

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Abstract:

BACKGROUND: Acute myocardial infarction (AMI), commonly known as a heart attack, is one of the leading causes of death globally. While healthcare professionals possess fundamental knowledge of managing AMI, there are key areas that require improvement or where basic knowledge is lacking. Timely decision-making, collaboration with the healthcare team, and continuous patient monitoring are imperative for optimizing outcomes in AMI cases. This study aimed to determine the current knowledge level and educational needs of healthcare professionals at Jordan University Hospital regarding AMI management to develop a targeted training program.

MATERIALS AND METHODS: To understand the current knowledge and educational needs of these healthcare professionals in managing AMI, a quantitative analysis was conducted using a sample of 309 internship doctors and registered nurses at Jordan University Hospital. Data were collected through questionnaire surveys, exploratory factor analysis, and hypothesis testing.

RESULTS: The data analysis revealed that a significant majority of the internship doctors and registered nurses (over 90%) have an excellent understanding and adequate knowledge concerning the management of AMI. However, there are gaps in certain areas of AMI management. Additionally, a significant relationship was found between the occupational category (registered nurses and internship doctors) and the management of AMI.

CONCLUSION: This study highlights the importance of focused educational interventions in improving healthcare workers' skills in managing AMI. By addressing knowledge gaps through customized training content tailored to different professional roles, Jordan University Hospital can enhance the standard of care provided to AMI patients.

Keywords:

Acute myocardial infarction, continuing education, health personnel, internship and residency, medical, nurses

Introduction

Acute myocardial infarction (AMI) is a major global cause of morbidity and mortality, challenging healthcare systems in many ways.[1] Despite advances in medical science that have improved outcomes from AMI, the condition necessitates prompt, efficacious, and coordinated management to minimize complications and maximize recovery.[2] In Jordan, as elsewhere in the world, the management of AMI presents significant difficulties for healthcare providers because best practices and treatment guidelines are changing so rapidly.[3] Thus, continuous professional development programs are mandatory for healthcare practitioners within this dynamic context to ensure the timely delivery of patient-centered care.

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The outcomes of a delay in referral for patients with AMI have significant implications for their recovery and overall cardiac function. Shahbazpour *et al.*[4] found that delays of 12 hours or more in referring AMI patients resulted in decreased physiological cardiac function, complicating the recovery process. Conversely, educational interventions show promise for improving outcomes for cardiac patients. Hatami *et al.*[5] demonstrated that educational programs based on the BASNEF model significantly enhanced quality of life and treatment adherence in myocardial infarction patients. Similarly, Chaudhary *et al.*[6] reported that the SMART heart package effectively increased knowledge and practices related to coronary artery disease prevention among high-risk adults. Nourali *et al.*[7] further highlighted the benefits of educational programs aligned with clinical practice protocols, noting improvements in treatment adherence, self-efficacy, and quality of life in patients undergoing coronary artery bypass graft surgery. These findings underscore the critical role of timely referral and targeted educational interventions in managing cardiac conditions and enhancing patient outcomes.

There is a recognized need for capacity building at Jordan University Hospital regarding the competency levels among healthcare professionals managing AMI.[8] A case in point is internship doctors and registered nurses, who play a critical role in providing frontline care to patients suffering from AMI.[9] However, disparities in knowledge levels coupled with the dynamic nature of protocols for treating cases of AMI indicate an education gap that currently exists. This shows that there should be no delay in delivering a tailored educational package since the hospital's top priority remains improving its patients' welfare while supporting its staff's professional growth. This will not only aid in overcoming the current knowledge deficiency but also offer them the confidence and abilities required to apply the latest evidence-based practices in managing AMI.

This study aims to systematically examine the existing knowledge level and training requirements among intern doctors and registered nurses at Jordan University Hospital concerning the management of AMI. The objective was to discover specific areas lacking understanding or skills by carrying out comprehensive quantitative analysis among key practitioners within each category highlighted above. This will help design focused training programs that fill these gaps, thus leading to improved quality of care services provided to patients by the hospital. Simultaneously, it aligns with the university's vision of creating a learning organization where individuals and teams continually develop themselves.[10] In line with this, the study contributes toward the broader goal of improving AMI outcomes and further highlights the role that Jordan University Hospital plays as a center for medical education and patient care in Jordan.

Materials and Methods

Study design and setting

The research design employed by this study was a quantitative approach, utilizing a survey that encompassed 309 healthcare providers, including intern doctors and registered nurses at Jordan University Hospital. Data collection involved structured questionnaires comprising personal details, knowledge of AMI management, and their educational needs regarding this subject matter.

Study participants and sample

This study focused on a particular subset of the healthcare system, namely, intern doctors and registered nurses at Jordan University Hospital. This selection is strategic because they are central to the immediate and ongoing management of AMI patients. Intern doctors, whose careers are just starting, are at a critical point where targeted, high-quality educational interventions can substantially impact their clinical skills and knowledge. Similarly, registered nurses play an essential role in patient care, monitoring, and education, making them indispensable in managing AMI.

A sample size of 309 participants, composed of both intern doctors and registered nurses, was identified as representative of the larger population of healthcare providers in the hospital. This sample enables a comprehensive analysis of the current state of knowledge and educational needs specific to the management of AMI within these groups, ensuring that findings are relevant and training materials are precisely targeted.

Data analysis

Data analysis was conducted through a quantitative approach using statistical software Statistical Package for Social Sciences (SPSS) version 26.0 for Windows (SPSS Inc., Chicago, IL, USA) for processing and interpreting survey responses. To gain an overview of the sample's characteristics and composition, descriptive statistics were used in the first stage to summarize these factors. Then, exploratory factor analysis was performed to establish latent variables related to AMI management knowledge and educational needs, allowing researchers to focus the training package on specific areas.

Hypothesis testing involved independent t-tests and analysis of variance (ANOVA) to evaluate disparities in the levels of AMI management knowledge among different occupational categories, consequently determining whether there is a need for occupation-specific training

modules. The analytical methodology allowed the identification of gaps in knowledge or educational priorities among healthcare professionals, facilitating the development of focused and effective training programs.

The methods used to analyze data gave meaning to the findings collected, guiding both the form and content of the proposed training package. Through thorough scrutiny of medical practitioners' feedback, the research team was able to highlight key areas needing improvement regarding AMI management, leading to design education aspects related specifically to its treatment.

Ethical consideration

Ethical concerns were given much attention throughout this research process, following the principles of respect, autonomy, and protection of subjects. The study was granted approval by the relevant university ethics committee (JEP-2022-812) and received permission from the Institutional Review Board (IRB-JUH 30/2023) at Jordan University Hospital, ensuring that ethical standards covering human subject research were strictly adhered to during all research activities.[11] Participants were made aware of what the research would entail, and their informed consent was sought before embarking on it. They were informed about the methods used, objectives, potential benefits, and potential risks, ensuring informed consent before participation.[12] Personal identifiers were removed or anonymized when presenting data and findings to maintain confidentiality and anonymity, as agreed upon by the participants.[13] These ethical safeguards supported trustworthiness by creating a safe space where participants could provide honest and accurate responses, thus maintaining the integrity of the study.

Results

Demographic analysis

The demographic analysis showed that the sample comprised a mixture of participants, with most being postgraduate qualified nurses and junior doctors. The largest number of respondents fell within the age bracket of 30–39 years, with considerable representation of males in nursing. The majority of respondents held a bachelor's degree, indicating an educated cohort.

In terms of professional demographic factors, Table 1 demonstrates that the majority of registered nurses fall under the age range of 30–39 years, accounting for 76.6% of the total. Nurses aged 40 years and older make up 14.9%, while those below the age of 30 represent 8.5%.

In terms of gender, male nurses make up a larger portion with 58.2%, while female nurses account for 41.8% of

Table 1: Demographic factor distribution

Profession	Demographic factor		n	%
Graduate registered nurses	Age	30–39 years	108	76.6
		40 years and older	21	14.9
		Below 30 years	12	8.5
	Gender	Female	59	41.8
		Male	82	58.2
	Marital status	Divorced	2	1.4
		Married	117	83
		Single	22	15.6
	Current academic level	Bachelor's	135	95.7
		Master's	6	4.3
Licensed internship doctors	Age	30–39 years	4	14.8
		Below 30 years	23	85.2
	Gender	Female	15	55.6
		Male	12	44.4
	Marital status	Married	10	37
		Single	17	63
	Current academic level	Bachelor's	27	100
Unlicensed internship doctors	Age	Below 30 years	141	100
	Gender	Female	82	58.2
		Male	59	41.8
	Marital status	Married	51	36.2
		Single	90	63.8
	Current academic level	Bachelor's	141	100

all registered nurses. When considering marital status, the majority of registered nurses are married, making up 83% of the profession. Divorced nurses make up a smaller percentage at 1.4%, and single nurses account for 15.6%.

Moving on to the current academic level, the majority of registered nurses hold a bachelor's degree, representing 95.7%. A smaller percentage, 4.3%, have achieved a master's degree. Examining the demographic factors among licensed internship doctors, those aged 30–39 years make up 14.8%, while those below the age of 30 years represent the majority at 85.2%.

Among licensed internship doctors, there is an equal gender distribution, with 55.6% females and 44.4% males. Married licensed internship doctors make up 37% of the group, while single doctors account for 63%. Regarding the current academic level of licensed internship doctors, 100% hold a bachelor's degree, indicating a high level of educational attainment.

Finally, among unlicensed internship doctors, the majority are below the age of 30 years, accounting for 100% of this group. The distribution of gender favors females, who make up 58.2%, while males represent 41.8%. Married, unlicensed internship doctors make up 36.2% of the group, while single doctors account for 63.8%. Similarly to licensed internship doctors, all

unlicensed internship doctors hold a bachelor's degree as their current academic level.

The distribution of unlicensed internship doctors across various work units is illustrated in Figure 1. The vertical axis lists the different units of work, which include the medical male ward, medical female ward, emergency room (ER) and medical intensive care unit (MICU), cardiac intensive care unit (CICU), surgical intensive care unit (SICU), critical care unit (CCU), and catheterization laboratory (cath lab), while the horizontal axis represents a numerical value, likely indicating the number of internship doctors in each unit.

Figure 2 displays the distribution of licensed internship doctors among various work units. Specific units, including the medical male ward, medical female ward, ER, MICU, CICU, SICU, CCU, and cath lab are listed on the vertical axis. The horizontal axis indicates the number of licensed internship doctors in each unit, with measurements ranging from 0 up to at least 250.

The visual information indicates that the ER and MICU have the highest number of licensed internship doctors, extending beyond the horizontal axis with a score above 230. This implies high demand and intense care interventions in these wards. Conversely, the medical male ward has fewer than 85 licensed internship doctors.

From Figure 3, it is evident that every unit of work has nurses with bachelor's degrees, who make up the majority in each category. The CCU and cath lab have the highest number of nurses who have a bachelor's degree, almost 80, followed by ER and MICU, CICU, and SICU, the medical female ward, and then the medical male ward, which has the least.

The number of those with master's degrees is much fewer compared to bachelor's degrees in each unit. It can be noted that CICU and SICU contain a higher number of individuals with master's degrees, almost four; this might imply an increased need for specialization in this critical care area.

Management of AMI analysis

Table 2 gives an outline of the responses to a series of questions on AMI and its diagnosis and treatment. Mean scores are descriptive in nature, as they describe the participants' average responses. Additionally, this number tells us the central value for each statement. Here, it shows whether people agree or disagree with each statement, where a higher mean suggests that more people believe in their knowledge of AMI. For example, "the most common cause of AMI is atherosclerotic coronary artery disease": on average, this was strongly agreed to by respondents (mean = 1.00),
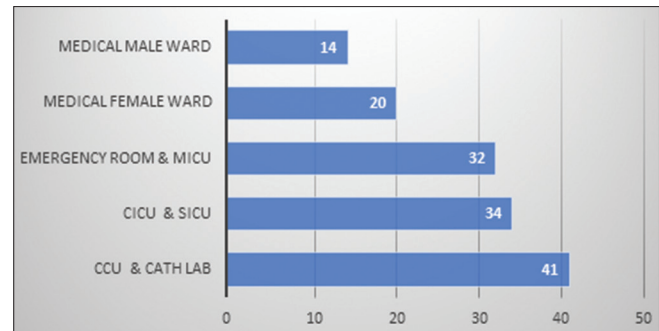

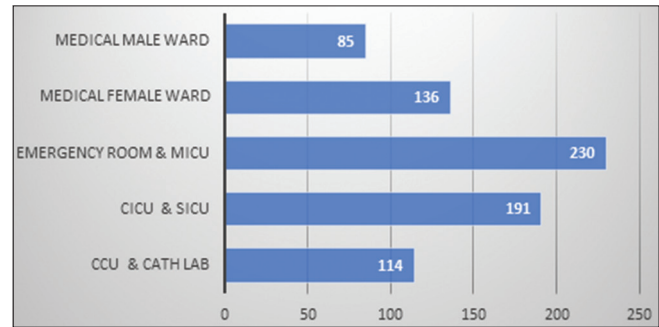**Figure 1:** Unit of work for unlicensed internship doctors

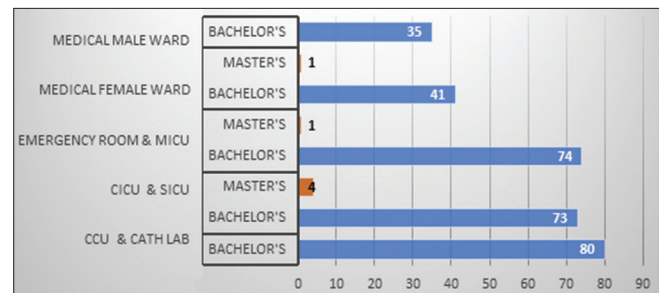**Figure 2:** Unit of work for licensed internship doctors

Figure 3: Unit of work for graduate registered nurses

with little variability among answers (low standard deviation = 0.255).

Furthermore, one essential factor in diagnosing and treating AMI is having a good medical history; on average, this was agreed to by respondents (mean = 0.97), with some variations in their responses (standard deviation = 0.310). High-sensitive cardiac-specific troponin particularly high-sensitive troponin assays can rule most cases of AMI; generally, respondents agreed with this statement (mean = 0.97) but had less variable responses (standard deviation = 0.177). In summary, data implies that typically much of the respondent opinions lean towards being more supportive about treating and diagnosing AMI since the means are near or above 1.

Cardiac course satisfaction analysis

Satisfaction feedback from cardiac courses showed a mean score below 1, which indicates areas for

Table 2: Management of AMI

Descriptive statistics	M	SD
1. The most common cause of AMI is atherosclerotic coronary artery disease and plaque rupture with resultant thrombosis, while congenital anomalies and substance abuse may be other causes of the disease.	1	0.255
2. One of the basic factors in the diagnosis and treatment of AMI is taking a proper medical history, followed by diagnostic and laboratory tests.	0.97	0.31
3. It is very necessary to perform an ECG for the patient if he/she complains that he/she suffers from chest pain, where the causes may be non-cardiac, for instance, musculoskeletal, pulmonary, gastrointestinal, and so on.	0.97	0.177
4. The ECG is a valuable clinical tool for the diagnosis and localization of AMI.	0.94	0.246
5. Upon arrival in the emergency room, an ECG 12-lead ECG must be done within 10 minutes to confirm an acute ST elevation myocardial infarction.	0.97	0.177
6. When taking the medical history of a patient suffering from AMI, the pain is described as heaviness in the chest substernal in location sometimes radiating to the arm, shoulder, mandible, jaw, and upper back, or may be stable in the center of the chest.	0.97	0.177
7. One of the important factors when taking a medical history is to ask about what are called risk factors such as age, sex, ethnicity, family history of coronary artery disease, and previous myocardial infarction. In addition to what is called modifiable risk factors such as DM, HTN, cigarette smoking, dyslipidemia, obesity, and physical activity.	0.97	0.31
8. In AMI, the TIMI risk score is a simple tool for bedside risk assessment that includes history, physical examination, and electrocardiographic findings. These tools may help doctors predict in-hospital mortality.	0.97	0.31
9. The main factors in the diagnosis of AMI are acute changes in the ECG (ST-segment elevation) simultaneous with ischemic chest pain and an increase in cardiac biomarkers.	1.03	0.31
10. The criteria for the diagnosis of AMI require at least two of the following three elements: a history of typical chest discomfort, ECG changes consistent with AMI, and rise and fall in serum cardiac markers.	0.97	0.31
11. The serum cardiac markers that are used in the diagnosis of AMI include CK (Creatine Kinase), CK-MB, cardiac-specific troponins, and myoglobin.	0.97	0.31
12. Cardiac-specific troponin, especially highly sensitive troponin assays, are useful for ruling in most AMIs; CK and CK-MB are helpful for diagnosing recurrent myocardial infarctions due to the persistent elevation of troponin.	0.97	0.177
13. Some AMI patients may present to the ER with severe epigastric pain, which can lead to the misdiagnosis of heartburn or another gastric disorder.	0.97	0.31
14. Elderly patients may not have any chest discomfort. However, they may present with symptoms of left ventricular failure, generalized weakness, or syncope.	0.97	0.31
15. Patients with inferior AMI may present with epigastric or right upper quadrant pain that may mimic acute cholecystitis. Conversely, patients with acute cholecystitis may present with symptoms and occasionally ECG findings suggestive of an inferior AMI.	1.03	0.31
16. If the patient has AMI, that means, there is complete occlusion of the coronary vessels resulting in thrombus and this explains the ST-segment elevation on the ECG.	0.97	0.31

Contd...

Table 2: Contd...

Descriptive statistics	M	SD
17. Elevation of cardiac marker "troponin I/troponin T" without showing acute ECG changes or symptoms of myocardial ischemia in addition to negative angiography such cases considered a myocardial injury.	0.97	0.31
18. The presence of a prior left bundle branch block may confound the diagnosis of AMI, but striking ST segment deviation that cannot be explained merely by conduction abnormality is suggestive of AMI.	1.42	0.556
19. If the patient is diagnosed with AMI, it is necessary to start giving a thrombolytic agent (tPA)(tissue Plasminogen Activator) within a specific period of time, regardless of the previous medical history, such action performed to save patient life.	1.42	0.556
20. All AMI patients (ST-segment elevation) on the ECG must be given aspirin, beta blockers, and heparin (unless receiving fibrinolytic agents).	1.42	0.556
21. In AMI, PCI intervention should be done when fibrinolytic therapy is absolutely contraindicated and in patients with cardiogenic shock or delayed presentations.	1.42	0.556
22. If AMI treatment started after 12 hours patients should receive medical therapy and, on an individual basis, may be considered for reperfusion therapy or angiotensin-converting enzyme inhibitors.	1.42	0.556
23. If a patient was diagnosed with AMI, and during conservative treatment, began to suffer from recurrent symptoms, heart failure, or malignant arrhythmias, he/she should go immediately to angiography for further evaluation.	1.16	0.573
24. If a patient develops ventricular premature beats after AMI, doctors must correct the electrolyte deficits and increase sympathetic tone by giving potassium and magnesium replacement and/or beta-blockers.	1.42	0.556
25. If a patient develops atrial fibrillation and/or atrial flutter after AMI, doctors must control the ventricular rate, and restore sinus rhythm by giving diltiazem, verapamil, digitalis, diuretics, or cardioversion in atrial flutter cases.	1.42	0.556
26. If the patient develops sinus bradycardia after AMI, doctors must accelerate the heart rate only if the hemodynamic is stable by giving atropine.	1.35	0.542
27. If the patient develops high-risk features during the conservative treatment, it is highly recommended that this patient go through an invasive procedure such as cardiac catheterization. This will reduce the occurrence of recurrent ischemic chest pain, recurrent admission, and recurrent myocardial infarction.	1.22	0.417
28. If the patient underwent an invasive procedure such as PCI or CABG, the cardiologist must prescribe antiplatelet ASA (Acetylsalicylic Acid)/clopidogrel/ticagrelor for a specified period of time in addition to statins, ACE/ARB(Angiotensin-Converting Enzyme, Angiotensin II Receptor Blockers), CCB(Calcium Channel Blockers)/beta-blocker, if not contraindicated.	1.32	0.532
29. Before discharging AMI patients, they should know about cardiac rehabilitation programs and should follow diet and exercise prescriptions.	1.04	0.472
30. All myocardial infarction patients should be given long-term therapy with aspirin, beta-blockers, statins, and ACE inhibitors.	1.07	0.349

ECG: electrocardiogram; TIMI: thrombolysis in myocardial infarction; DM: diabetes mellitus; HTN: hypertension; PCI: primary percutaneous coronary

improvement in the ongoing educational offerings. Diverse participant points of view were indicated by the standard deviation, emphasizing again the need for more personal and interactive learning approaches.

The Education and Development Center offers useful courses that contribute to the development of scientific and clinical skills in dealing with AMI cases. Table 3 shows that 23.6% agree with this statement, 47.2% disagree, and 29.1% neither agree nor disagree. The medical team has the right to choose the topics presented by the Education and Development Center individually, based on their professional specialization. However, 20.7% agree with this statement, while 41.1% disagree and 38.2% neither agree nor disagree. The Education and Development Center periodically holds clinical training courses about AMI. Only 16.2% agree with this statement, whereas 52.4% disagree and 31.4% neither agree nor disagree. The medical team does not have the authority to choose the topics presented by the Education and Development Center. The center holds training courses based on a specific schedule requested by the heads of the medical and nursing departments. Here, 58.9% agree, 9.4% disagree, and 31.7% neither agree nor disagree.

The medical team working in the hospital has the right to refuse attendance at training courses if they feel that there is no need to improve their scientific and clinical skills to provide better service to patients. A significant 69.9% agree with this statement, 9.7% disagree, and 20.4% neither agree nor disagree. The Education and Development Center provides a wide range of training courses, including workshops on infection control and patient safety. As a medical team, the participants of the survey stated that they are interested in attending training courses to improve the service provided to their patients. In addition, 60.2% agree with this statement, 17.2% disagree, and 22.7% neither agree nor disagree.

The Education and Development Center adequately announces the courses they offer and provides a sufficient period of time for the medical team to coordinate their attendance without causing disruption to the workflow. 49.8% agree, 11.3% disagree, and 38.8% neither agree nor disagree. The courses held by the Center for Education and Development regarding cardiovascular diseases are considered by some participants to sufficient to develop the scientific and clinical skills of the medical team. However, 19.1% agree, 48.9% disagree, and 32.0% neither agree nor disagree. The medical team also expressed their interest in attending specialized courses related to advanced cardiac life support and emergency medical services. The majority of participants believe that the level of courses offered by the Education and Development Center needs improvement in proportion to the clinical cases, with 86.7% agreeing with this statement, 3.6% disagree, and 9.7% neither agree nor disagree.

Development of package on AMI cases analysis

From Table 4, the results of the survey indicate that the development of a new plan to deal with AMI cases can greatly help in the initial assessment of the medical condition and subsequently reduce the mortality rate caused by the disease. This is supported by 292

Table 3: Course satisfaction among nurses and doctors

	Agree *n* (%)	Disagree *n* (%)	Neither *n* (%)
1. The Education and Development Center offers useful courses that contribute to the development of your scientific and clinical skills in dealing with AMI cases.	73 (23.6)	146 (47.2)	90 (29.1)
2. The medical team has the right to legislate the topics presented by the Education and Development Center individually, each according to his/her professional specialization, and accordingly, the Education and Development Center meets their desire.	64 (20.7)	127 (41.1)	118 (38.2)
3. The Education and Development Center periodically holds clinical training courses about AMI.	50 (16.2)	162 (52.4)	97 (31.4)
4. The medical team is not entitled to choose the topics presented by the Education and Development Center, as they hold training courses according to a specific schedule at the request of the heads of the medical and nursing departments.	182 (58.9)	29 (9.4)	98 (31.7)
5. The medical team working in the hospital has the right to refuse to attend the training courses, as they do not have to develop their scientific and clinical skills to improve the level of service provided to patients.	216 (69.9)	30 (9.7)	63 (20.4)
6. The Education and Development Center in the hospital does not aim to develop the scientific and clinical skills of the medical team as much as it is keen to secure the highest CME course credit for the purpose of career promotion for the medical team only.	221 (71.5)	40 (12.9)	48 (15.5)
7. As a medical team, we work to improve the service provided to our patients, so we are interested in attending training courses for this purpose only.	186 (60.2)	53 (17.2)	70 (22.7)
8. The Education and Development Center often announces the courses to be held in a sufficient period of time in order to coordinate prior attendance of the courses by the medical team without causing disruption to the workflow.	154 (49.8)	35 (11.3)	120 (38.8)
9. The courses held by the Center for Education and Development regarding cardiovascular diseases are sufficient to develop the scientific and clinical skills of the medical team.	59 (19.1)	151 (48.9)	99 (32.0)
10. The level of courses offered by the Education and Development Center must be improved in proportion to the clinical cases, each according to its specialization.	268 (86.7)	11 (3.6)	30 (9.7)

Table 4: Development of package on AMI cases

	Agree *n* (%)	Disagree *n* (%)	Neutral *n* (%)
1. Development of a new plan to deal with AMI cases may greatly help in the initial assessment of the medical condition and thus reduce the mortality rate caused by the disease.	292 (94.5)	1 (0.3)	16 (5.2)
2. The developed treatment plan to deal with AMI cases may prevent the expected harm and some complications that might be caused by the disease.	266 (86.1)	7 (2.3)	36 (11.7)
3. Having a clear treatment plan to deal with AMI cases has a positive effect on the prognosis of the health status of patients.	231 (74.8)	25 (8.1)	53 (17.2)
4. The developed treatment plan to deal with AMI may reduce medical errors and malpractice.	239 (77.3)	27 (8.7)	43 (13.9)
5. If we develop a fixed treatment plan to deal with AMI cases, it may affect the level of medical care provided to the patients.	226 (73.1)	24 (7.8)	59 (19.1)
6. It is highly necessary to devise a fixed treatment plan for patients with AMI because of its importance in reducing potential complications after the incidence of the disease and thus reducing the mortality rate.	212 (68.6)	28 (9.1)	69 (22.3)
7. The importance of developing a fixed treatment plan to deal with cases of AMI at all healthcare facilities lies in enhancing the knowledge of the medical staff on how to deal with similar cases.	270 (87.4)	5 (1.6)	34 (11.0)
8. Having a fixed treatment plan for AMI cases is no less important than dealing with sepsis and CPR cases.	275 (89.0)	9 (2.9)	25 (8.1)
9. The main point to be taken in the event of devising a fixed treatment plan for AMI patients is to hold training courses periodically to develop the clinical skills of the medical team in dealing with the disease.	258 (83.5)	16 (5.2)	35 (11.3)
10. Developing a treatment plan for AMI patients might develop the scientific and clinical skills of the medical team dealing with those cases, which would enhance the clinical approach of treating patients and contribute to saving their lives.	274 (88.7)	10 (3.2)	25 (8.1)

respondents (94.5%) who agree with this statement, while only one respondent (0.3%) disagrees and 16 respondents (5.2%) remain neutral. Furthermore, the survey reveals that the developed treatment plan to deal with AMI cases may also prevent the expected harm and complications that may arise from the disease. This is agreed upon by 266 respondents (86.1%), while seven respondents (2.3%) disagree and 36 respondents (11.7%) remain neutral.

Having a clear treatment plan for AMI cases is found to have a positive effect on the prognosis of the health status of patients, as stated by 231 respondents (74.8%). However, 25 respondents (8.1%) disagree with this statement, and 53 respondents (17.2%) remain neutral. In addition, the developed treatment plan for AMI cases may also help reduce medical errors and malpractice. This is supported by 239 respondents (77.3%), while 27 respondents (8.7%) disagree and 43 respondents (13.9%) remain neutral. It is suggested that the establishment of a fixed treatment plan for AMI cases may affect the level of medical care provided to the patients. This viewpoint is shared by 226 respondents (73.1%), while 24 respondents (7.8%) disagree and 59 respondents (19.1%) remain neutral.

The survey highlights the high necessity of devising a fixed treatment plan for patients with AMI, as it plays a crucial role in reducing potential complications and subsequently lowering the mortality rate. This is agreed upon by 212 respondents (68.6%), while 28 respondents (9.1%) disagree and 69 respondents (22.3%) remain neutral. The importance of developing a fixed treatment plan for AMI cases at all healthcare facilities lies in enhancing the knowledge and skills of the medical staff

on how to deal with similar cases. This is supported by 270 respondents (87.4%), while five respondents (1.6%) disagree and 34 respondents (11.0%) remain neutral. It is emphasized that having a fixed treatment plan for AMI cases is equally important as dealing with sepsis and CPR cases. This viewpoint is shared by 275 respondents (89.0%), while nine respondents (2.9%) disagree and 25 respondents (8.1%) remain neutral.

The survey highlights the need for holding training courses periodically to develop the clinical skills of the medical team in dealing with AMI patients when devising a fixed treatment plan. This is agreed upon by 258 respondents (83.5%), while 16 respondents (5.2%) disagree and 35 respondents (11.3%) remain neutral. Furthermore, developing a treatment plan for AMI patients not only contributes to the scientific and clinical skills of the medical team but also enhances the clinical approach to treating patients and saves lives. This is supported by 274 respondents (88.7%), while 10 respondents (3.2%) disagree and 25 respondents (8.1%) remain neutral.

Discussion

The research highlights an urgent call for continuous professional development in AMI management at Jordan University Hospital. However, identified gaps indicate possibilities for improving course content, especially in areas that are underrepresented in the current curriculum.[14] A focus on role-specific training with interactive case-based learning would significantly enhance satisfaction and competency within AMI management.[15] Additionally, the high response rate

to the study implies that health professionals are proactive and engaged in improving AMI care.[16] This commitment is an essential ingredient for the successful implementation of this suggested program, hence high potential for impactful educational outcomes.

Knowledge and understanding of AMI

The results imply a fairly sound understanding of AMI management among healthcare professionals, as shown by over 90% achieving proficiency levels. Nevertheless, contemporary guidelines are continuously updated, meaning continuing education is compulsory to keep up with such changes, especially regarding treatment options. The study identifies electrocardiogram interpretation skills and emergency intervention procedures as critical areas for improvement in developing training package contents.

Satisfaction with cardiac courses

Positive feedback was obtained from both internship doctors and registered nurses concerning satisfaction levels with the cardiac courses offered at the education and development center. However, there is a clear need to update course content to incorporate practical, simulation-based training to bridge the gap between theoretical knowledge and clinical application.

Occupational category and AMI management

There was a significant relationship between occupational category and AMI management efficacy. Hence, there is a call for individualized training modules targeting internship doctors and registered nurses, focusing on interdisciplinary collaboration, ethical considerations, and patient-centered care.

Development of training package

The priorities of the proposed training package include critical knowledge areas, practical skills, and professional development opportunities. It involves case studies, simulation-based learning, and workshops aimed at enhancing decision-making abilities, diagnostic competence, and the treatment implementation of AMI patients.

Conclusion

This study has underlined the importance of focused educational interventions in improving healthcare workers' skills in managing AMI. By filling known gaps in the knowledge base through customized training content for different professional roles, Jordan University Hospital can improve the standard of care offered to AMI patients. This proposed training package takes this approach by providing a detailed analysis of current practices that will inform future educational strategies. The contents need further evaluation as they continue to be adapted to stay relevant, even as changes are made to better outcomes related to managing AMI.

Unveiling the cultural factors' influence on AMI management practices in different healthcare settings and regions would provide significant insights. These culturally sensitive approaches to care and training can be identified through such research, resulting in improved patient outcomes as well as healthcare providers' satisfaction in diverse populations.

These findings offer important implications for advancing AMI care across healthcare settings. Thus, it is necessary to continually educate, tailor interventions that are relevant to specific needs, and encourage professionals from different fields of study to work together. The relationships between various roles within healthcare also show the need for a collective understanding of the different functions that exist among health team members, such as medical doctors, nurses, etc., to enhance patient outcomes during their treatment of AMI.

Recommendations for future studies

Longitudinal studies: Future investigations should consider longitudinal designs to follow up on the long-term effects of educational interventions on knowledge, skills, and practices among healthcare providers in relation to AMI management.[17] These studies could help determine whether intervention outcomes are sustainable and what ongoing professional development needs health practitioners may have.

Comparative effectiveness research: Various educational approaches and training methods should be investigated to ascertain the most effective strategies for enhancing the skills of healthcare professionals in AMI management.[18] This may involve comparing traditional didactic teaching methods with more interactive/simulation-based learning experiences or assessing the impacts of interdisciplinary training programs.

Cross-cultural studies: Comparing how cultural aspects affect AMI management styles across multiple hospital contexts might reveal key information.[19] Therefore, this kind of investigation will enable the identification of culturally appropriate ways to manage heart attacks, resulting in better patient outcomes and higher job satisfaction among doctors and nurses in various populations.

Health information technology (HIT): Evaluating how HIT can be used to enhance AMI care, including the application of electronic health records, decision support systems, and telehealth services, offers a promising research arena for future work.[20] Possible studies could

examine ways technology can enhance data sharing, decision-making, and coordination of care in AMI.

Abbreviations

AMI: acute myocardial infarction; MICU: medical intensive care unit; CICU: cardiac intensive care unit; SICU: surgical intensive care unit; CCU: critical care unit; cath lab: catheterization laboratory; ER: emergency room; HIT: health information technology.

Conflicts of interest

There are no conflicts of interest.

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