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Assessment of the knowledge and practice on nursing management of Myocardial infarction and Angina among staff nurses with a view to develop informational booklet: A hospital-based study

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Abstract

Introduction: Myocardial Infarction (MI) and Angina are the leading cause of morbidity and mortality globally, including India. These conditions require immediate medical attention and continuous management to prevent complications and improve patient outcomes. The role of nurses in the management of MI and Angina is critical, as they are responsible for the initial assessment, monitoring, administration of medications, and educating patients about life style modifications. Despite the central role of nurses in the management of these conditions, there is limited research on the knowledge and practices of nurses involving in care of patient with cardiovascular conditions.

Material and Methods: A quantitative research approach with non-experimental descriptive research design was used to conduct the study. Sample size consisted of 100 staff nurses working in selected hospitals of district, Mohali. Convenience sampling technique was used to select study subject. Data collection was performed using a structured knowledge questionnaire to assess the nurses' knowledge of MI and Angina, and structured self-reported checklist to assess nursing practices. The questionnaire was designed based on national and international guidelines for MI and Angina management, and was pre-tested for reliability and validity. Collected data were tabulated and analyzed by using descriptive and inferential statistics.

Results: The study result shows that out of 100 staff nurses, majority of staff nurses 68% were having average knowledge, 18% were having good knowledge and 14% were having poor knowledge. Whereas results regarding practices show that majority 59% were having average practice, 29% were having poor practice and 12% were having good levels of practice. A gap between knowledge and practice was evident; despite 70% were having medication knowledge, only 60% implemented it correctly. Nurses who received recent training scored better, highlighting the need for continuous education to enhance practice.

Conclusion: The study concluded that majority of staff nurses has a reasonable understanding of the nursing management of MI and Angina. A gap between knowledge and practice was evident. The development and distribution of an informational booklet will serve as a resource for nurses to enhance their knowledge and improve their clinical practices.

INTRODUCTION

Cardiovascular diseases, particularly Myocardial Infarction (MI) and Angina, remain major health concerns worldwide, contributing significantly to morbidity and mortality. Myocardial Infarction, commonly referred to as a heart attack, occurs when the blood supply to a part of the heart muscle is blocked or reduced, causing tissue damage or death[1]. Angina, a condition characterized by chest pain or discomfort, results from inadequate blood flow to the heart muscle, often signaling an impending MI or other cardiovascular issues. Both conditions pose significant risks to patients and require urgent, effective management to prevent complications such as heart failure, arrhythmias, and sudden cardiac death[2].

The prevalence of MI and Angina in India has been rising in recent years, largely due to increasing risk factors such as hypertension, diabetes, sedentary lifestyles, unhealthy diets, and stress. These conditions impose not only a physical and emotional burden on patients but also a substantial strain on healthcare systems. The timely intervention and appropriate management of MI and Angina are critical to improving patient survivalandqualityoflife[3].

Nurses play a pivotal role in the management of patients with MI and Angina, providing essential care across multiple phases of treatment, from initial assessment and stabilization to long-term recovery and education. The nursing management of these conditions involves a combination of clinical skills, knowledge of evidence-based protocols, and compassionate care. Nurses are responsible for monitoring vital signs, administering medications, performing cardio- pulmonary resuscitation when necessary, and educating patients about lifestyle changes, medication adherence, and emotional support[4].

In hospitals, particularly in cardiology and emergency care settings, nurses are often the first health care professionals to identify symptoms and initiate care. Their role extends beyond clinical interventions to encompass patient education, emotional support, and coordination of multi-disciplinary care. Effective nursing management can significantly reduce complications, shorten hospital stays, and improve overall patientoutcomes[5].

Given the complexity of managing MI and Angina, it is essential for nurses to possess up-to-date knowledge and skills to provide safe and effective care. A lack of proper training, outdated practices, or insufficient knowledge can compromise patient care and delay appropriate interventions[6].

NEED OF THE STUDY

Cardiovascular diseases (CVD) are the leading cause of morbidity and mortality in developing nations including India. WHO (2021) estimates that 17.9 million deaths from CVDs occurred in 2019,

or 32% of all deaths worldwide. Heart attack (MI) and stroke were to blame for 85% of these fatalities. Over the past few decades, non-communicable chronic disease prevalence and related mortality have significantly increased in developing Nations.[7] India experienced rapid urbanization during the past few decades as a result of the country's rapid economic development, modernization, industrialization, advancement of education, and employment opportunities. The effects of increasing urbanization and expansion raise concerns that the prevalence of cardiovascular disease may climb further as a result of sedentary behavior patterns, smoking, poor diets, and labor-saving technologies.[8]

As frontline healthcare providers, nurses need to be prudent in handling cases of MI and Angina. The nurse tending to a patient who has suffered a myocardial infarction and Angina Pectoris or who is at risk for one must comprehend the underlying causes of infarction and be able to spot both its subtle and more prominent symptoms. Recovery requires quick assessment and quick action.[9]

Nurses are key personnel and they have a professional responsibility to lead CVD prevention initiatives, as they are a frontline to communicate with patients and their families. The nurses' knowledge regarding the care of MI and Angina includes Awareness of understanding about causes, signs and symptoms, risk factors, complications, and the overall management of CVD. This is essential to reduce the gap between evidence and practice. However, nurses' knowledge and practice of nursing management of patient with MI and Angina are not well-known.[10] Therefore, it is crucial to understand the extent of nurses' knowledge and practice regarding the care of patient with MI and Angina at selected hospitals in Mohali, Punjab.

AIM OF THE STUDY

1. To assess knowledge and practice on nursing management of myocardial infarction and angina among staff nurses.
2. To develop and distribute informational booklet on nursing management of Myocardial infarction and Angina among staff nurses.

MATERIAL AND METHODS

A quantitative research approach with non-experimental descriptive research design was used to conduct the study. The study was conducted in the Sri Sukhmani multispecialty hospital, Derabassi and Indus multispecialty hospital, Mohali. The study samples were staff nurses working in selected hospitals and involved in care of patient with MI and Angina. The sample size was calculated by power analysis and it was consisted of 100 staff nurses. Convenience sampling technique was used to select study subject.

Data collection tool has three sections. Section-1 include demographic variables like age, gender, educational qualification, area of working, previous work experience in cardiac unit and in-service education attended. Section -2 structured knowledge questionnaire to assess the nurses' knowledge of MI and Angina, and section-3 structured self-reported checklist to assess nurses' practices.

The developed structured knowledge questionnaire and practice checklist was submitted to the experts in the field of nursing and medicine to establish content validity. The content validity index value was 0.96. The reliability of structured knowledge and practice questionnaire was checked by test-retest method and it was found r=0.92 and 0.94 respectively. The written permission to conduct the study was obtained from the medical and nursing superintendents of the selected hospitals. The main study data collection was conducted from 13.03.2022 to 16.04.2022 at Sri Sukhmani multispecialty hospital and Indus hospital Dist. Mohali by using the designed questionnaire. The subjects were informed that their participation is voluntary and a participant information sheet was provided before completing the questionnaires. After obtaining ethical approval and permission from the concerned authorities, the participants who met the inclusion criteria were included in the study. The participant information sheet with the details of the study informed consent forms, and screening questionnaire tool was distributed to all the subjects. Researcher collected the data including demographic data and related to nursing management of MI and Angina with the help of structured questionnaire. The collected data were tabulated and analyzed as per objectives of the study by using descriptive and inferential statistics. Different diagram and tables were used to depict the finding.

RESULTS

Percentage wise distribution of staff nurses according to their socio demographic variables revealed that out of 100 staff nurses, 51% of Staff nurses were in the age group of 24-26 years, 43% of Staff nurses were in the age group of 21-23 years, and only 6% of Staff nurses were in the age group of 27 years and above; 63% of Staff nurses were female and 37% were male, 38% of Staff nurses were qualified as G.N.M., 35% as B.Sc.(N), 27% as Post Basic B.Sc.(N), 51% of Staff nurses had work experience up to 2 years & 47% had work experience between 3 to 5 years, 32% of Staff nurses were working in ICU, 25% in emergency ward, 22% in medicine ward, 14% in general ward and 7% in surgery ward, 57% staff nurses were having the previous experience in cardiac unit and 66% of staff nurses attended the in service education programme.

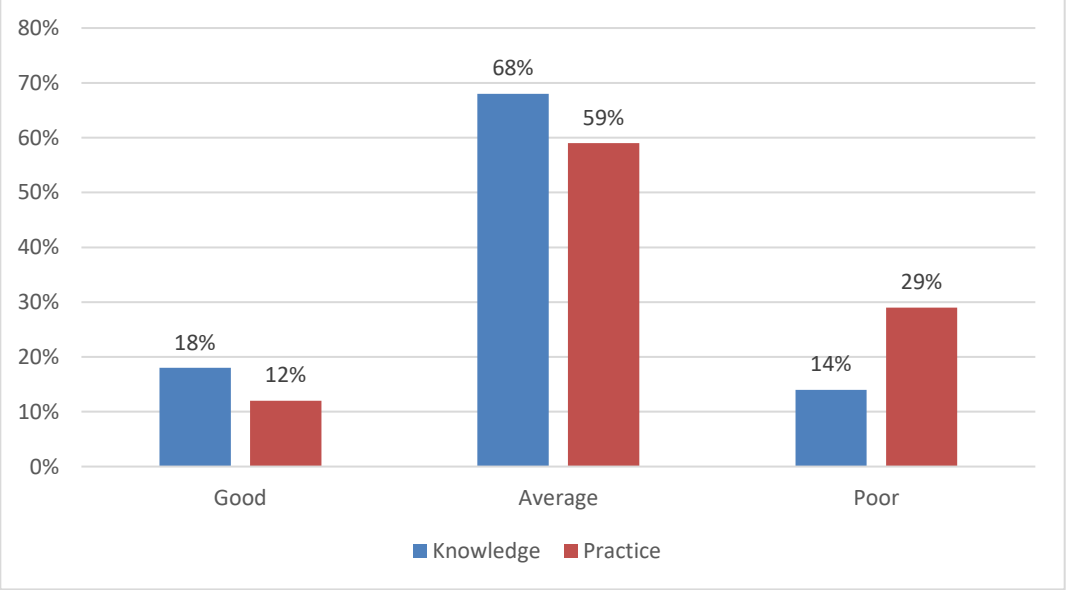

Fig:1: Staff nurses level of knowledge & practice regarding nursing management of MI & Angina

Levels of knowledge regarding nursing management of MI and angina shows that majority of staff nurses 68% were having average knowledge 18% were having good knowledge and 14% were having poor knowledge. Whereas levels of practices regarding nursing management of MI and angina shows that more than half of staff nurses 59% were having average practice, 29% were having poor levels of practice and only12% were having good practices.

Table-1: Item Wise analysis of nurse's knowledge on nursing management of MI & Angina

N=100

S.No.	Knowledge items	Correct Response	
		Frequency (f)	Percentage (%)
1	Where is the location of Heart	69	69%
2	How many valves are present in the heart	56	56 %
3	What is Cardiac output	58	58%
4	What is Normal stroke volume of the heart	54	54%
5	What do you mean by myocardial infarction	50	50%
6	Risk factor for myocardial infarction is	49	49%
7	Which age group is at high risk for myocardial infarction	53	53%
8	What is the cause of myocardial infarction	53	53%
9	What is the major symptom of myocardial infarction	61	61%
10	What is the duration of pain in myocardial infarction	56	56%
11	What is the nature of pain in myocardial infarction	49	49%
12	What is the pulse rate in myocardial infarction	51	51%
13	Hormones are released during myocardial infarction	35	35%
14	What is the priority measure to diagnose myocardial infarction	44	44%
15	Enzyme`s level is elevated during myocardial infarction	42	42%
16	Creatine kinase enzyme returns to its normal range after myocardial infarction	45	45%
17	Why Coronary angiography is performed	51	51%
18	Segment of ECG is depressed or elevated during myocardial infarction	50	50%
19	Analgesics drugs are used to relief pain in myocardial infarction	64	64%
20	What is the function of nitroglycerine	57	57%
21	Use of calcium channel blocker in myocardial infarction	52	52%
22	Use of ACE inhibitor after myocardial infarction	10	10%
23	What is the purpose of thrombolytic agents	43	43%
24	When to start oxygen therapy among MI patient	49	49%
25	First line treatment for myocardial infarction	51	51%
26	Where the shunt is placed in coronary artery bypass grafting surgery	49	49%
27	Interventions should be included in the nursing care plan of the client with MI	41	41%
28	How many valves are present in the heart	41	41%
29	What is Cardiac output	44	44%
30	What is Normal stroke volume of the heart	48	48%
31	priority nursing diagnosis for client with MI	42	42%
32	Measure the nurse should take for the client after 3rd day after cardiac surgery	53	53%
33	First priority intervention when treating a client experiencing chest pain while walking	61	61%
34	position should be provided to the patient with myocardial infarction	52	52%
35	What is the objective of cardiac rehabilitation	49	49%
36	When should rehabilitation programme start	45	45%
37	What is the goal of cardiac rehabilitation in acute phase	53	53%

38	What advice should be given to patient at the time of discharge?	45	45%
39	Which type of diet is advised to patient who recovers from MI	49	49%
40	Which of the followings diet should be prescribed to the MI patient	50	50%
41	Which type of exercise nurse should advise to patient recover from MI	62	62%
42	What is angina pectoris	51	51%
43	Which of the following is not a type of angina pectoris	46	46%
44	What do you mean by stable angina pectoris?	76	76%
45	What is the duration of stable angina pectoris	41	41%
46	What do you mean by unstable angina	49	49%
47	What is the duration of unstable angina pectoris	50	50%
48	What is the main characteristics of unstable angina	50	50%
49	What do you mean by variant angina	50	50%
50	Which of the following is the main site of angina pain	46	46%
51	When does angina pain is radiate	59	59%
52	Which of the following is not a symptom of angina	45	45%
53	What is the main characteristics of angina pain	90	90%
54	Which of the following is not a diagnostic test for angina	59	59%
55	Which of the following medication is used to treat angina	65	65%
56	What is the immediate action of a nurses in care of patient with angina pectoris	47	47%
57	Which position nurse should give to patient with angina	40	40%
58	Which type of exercise is advised to angina pectoris patient	52	52%
59	Not a post hospital discharge advises to angina patient	53	53%
60	Priority nursing diagnosis for client with MI	90	90%

Item analysis of knowledge questions of staff nurses shows that highest percentage (90%) of staff nurses correct response was given for the item What is the main characteristics of angina pain and Priority nursing diagnosis for client with MI & only 10% subject correct response given to the item Use of ACE inhibitor after myocardial infarction. Staff nurses were lacking knowledge in the areas of immediate nursing management, acute pain management & cardiac rehabilitation of MI &Angina.

Table No 2: Item wise analysis of staff nurses practice regarding nursing management of MI and angina.

N=100

S.No.	Practice Items	Correct Response	
		Frequency (f)	Percentage (%)
1	Asses the pale conjunctiva, nail beds	95	95%
2	Assess for abnormal heart and lungs sound	55	55%
3	Monitor blood pressure and pulse	94	94%
4	Take ECG and review periodically	41	41%
5	Assess mental status and level of consciousness	54	54%
6	Monitor oxygen saturation and ABG level	86	86%
7	Provide oxygen	44	44%
8	Implement strategies to taste fluid electrolyte balance	54	54%
9	Administer medication as per physician order	84	84%
10	Provide complete bed rest	51	51%
11	Changes position every two hrs.	47	47%
12	Assess the pain for location	92	92%
13	Assess the pain intensity by using pain rating scale (1-10)	46	46%

14	Administer vasodilators(nitroglycerin) as ordered	48	48%
15	Give beta blockers	89	89%
16	Establish quite environment	38	38%
17	Elevate head of the bed	84	84%
18	Monitor vital signs every 5minutes	39	39%
19	Provide oxygen	39	39%
20	Monitor oxygen saturation	78	78%
21	Monitor cardiac rhythms	35	35%
22	Administer analgesics(morphine) or as hospital policy	33	33%
23	Monitor and record vital sign	82	82%
24	Assess patients' general condition	36	36%
25	Monitor intake output every 4hours	32	32%
26	Weigh patient daily	43	43%
27	Auscultate breath sound	42	42%
28	Assess for presence of peripheral edema Follow low sodium diet	36	36%
29	Restrict fluid	68	68%
30	Monitor for distended neck veins	36	36%
31	Provide diuretics therapy	30	30%
32	Evaluate intake output in response to diuretics	80	80%
33	Assess the need for catheterization	50	50%
34	Advised for smoking cessation.	39	39%
35	Advised for healthy eating like low fat diet	88	88%
36	Physical exercise and activity	35	35%
37	Stress management	38	38%
38	Adherence to medications	94	94%

Item wise analysis of staff nurses practice regarding nursing management of MI and angina in shows that highest percentage (95%) of staff nurses correctly respond to the item Asses the pale conjunctiva, nail beds and lowest percentage (32%) of subjects correctly answer to the item Monitor intake output every 4hours.hence it can infrared that nurses are lacking the practice in the areas of acute pain management, decreased cardiac output and cardiac rehabilitation.

DISCUSSION

Nursing Care of patient with MI and Angina plays a significant role in recovery of patients and this is affected by a staff nurse's maturation level and intellectual capacity. The Finding of present study with reference of staff nurses' knowledge regarding nursing management of MI and angina shows that majority 68(68%) were having average levels of knowledge, 18(18%) were having good levels of knowledge and only 14(14%) were having poor levels of knowledge. These findings are supported by a study conducted by Kadian Rajani, et al in PGIMS Rohtak, Haryana," revealed that, 76% of samples had good level of knowledge, 13% had average knowledge & only 11% had excellent knowledge[11]. Similarly a study by Alzahranion" found that 60% of nurses had moderate levels of knowledge, while 20% demonstrated a good understanding, and 20% had poor knowledge. [12].

The Finding of present study with reference of level of practice regarding nursing management of MI and angina shows that majority 59(59%) were having average practice, 12(12%) were having good practice and 29(29%) were having poor practice. These findings are supported by a study conducted by Pujari, et al in Udaipur, Rajasthan study, which shows that in pre-test majority 24 (60%) had Poor skill, 15 (37.5%) had fair skill and only 1 (2.5%) had Good skill [13]. In a study conducted by Jain, 62% of nurses exhibited average practice levels in managing MI and angina, while 26% had good practice levels, and 12% had poor levels. The study highlighted that limited practical exposure and inadequate training contributed to the lower practice levels among some nurses[14]. Similarly Smith J et al, A Survey-Based Analysis result shows that regarding knowledge of Myocardial Infarction (MI) and Angina, 65% demonstrated moderate understanding of basic concepts, though only 50% could identify key diagnostic tests. While 70% knew how to administer standard medications, knowledge of advanced treatments was limited. [15].

CONCLUSION

The study provides us with evidence that majority of the staff nurses exhibited, average level of knowledge and practice concerning the nursing management of myocardial infarction (MI) and angina. Most of Staff nurses were lacking knowledge and practice in the areas of immediate nursing management, acute pain management & cardiac rehabilitation of MI &Angina. Special training programs should be designed and constructed for nurses in cardiac care unit to reinforce their skills and promote their experiences. 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 and angina. The researcher developed the information booklet with special emphasis on immediate nursing management, acute pain management & cardiac rehabilitation of patient with myocardial infarction and Angina and distributed among staff nurses to enhance their knowledge and practices in order to improve patient outcomes.

Conflict of interest: The authors certify that they have no involvement in any organization or entity with any financial or non-financial interest in the subject matter or materials discussed in this paper.

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