

Assessment of Self-Care for Saudi Patients with Myocardial Infarction in 2024

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Abstract

Background: Self-care practices are particularly important for maintaining health and preventing its recurrence, and they can begin after the acute phase of myocardial infarction has passed. **Aim of the study:** to assess self-care for Saudi patients with myocardial infarction. **Research design:** Descriptive research design was used to conduct this study. **Setting:** The present study conducted at Cardiac OutPatient Clinics in Saudi University Hospital. **Sample:** Simple random sample was used in this study. The total number of sample was 254 myocardial infarction patients. **Tools:** One tool was used to collected data **Part (I):** An interviewing questionnaire to assess patients'socio demographic characteristics. **Part (II):** About patients' medical history. **Part (III):** Patients' knowledge regarding myocardial infarction and self-care. **Part (IV):** Patients' self-care reported practices. **Results:** 63.8% of patients had total average knowledge regarding myocardial infarction and self-care, while 65% had unsatisfactory reported self-care practices. **Conclusion:** There were highly statistical significant relation between studied myocardial infarction patients' total knowledgeand their socio demographic characteristic regarding educational level, while there were highly statistically significant relations between the total self-care practices of studied myocardial infarction patients and their total knowledge. **Recommendation:** Health educational program should be developed and implemented for patients with myocardial infarction to improve, and updated knowledge and self-care practices.

Key words: Myocardial infarction, Saudi Patients Self-care.

Introduction:

Self-care practices include adjusting to avoid or keep an illness stable (self-care maintenance), to keep an eye on symptoms (self-care monitoring), and to react to symptoms of an illness flare-up (self-care management). Based on the principle of self-care of chronic illness, the self-care of chronic illness inventory was created to be used with people who have any number of chronic diseases of any kind. While following self-care regimens improves quality of life, reduces mortality, morbidity, and medical expenses, and avoids readmission to the hospital (Riegel et al., 2019).

Nowadays, patients' and their families' self-care is regarded as a crucial component of treating chronic illnesses. Self-care refers to a person's capacity to manage any chronic illness. This includes managing the physical and psychological effects of chronic illness, as well as symptom control, illness treatment, lifestyle modification, and coping with the physical and psychological effects of chronic illness. Self-care aims to maintain a high quality of life and lessen the detrimental impacts of chronic diseases **(Sharma et al.,2018)**.

Myocardial Infarction (MI) is a cardiovascular disease caused by myocardial insufficient blood supply or even myocardial necrosis due to coronary artery occlusion. MI is a subset of acute coronary syndrome, in which there is damage to the cardiac muscle as demonstrated by increased cardiac Troponin levels in the setting of acute ischemia. MI is a fatal disease caused by block in the oxygen supply of blood vessels of the heart muscles, leading to permanent heart muscle damage and death of its cells. This block is due to atherosclerosis in which plaque of fatty patches is precipitated on the inner wall of the coronary artery or one of its smaller branches. When the plaque is ruptured, the blood clot is formed inside the artery blocking the blood flow **(ALzahrani et al., 2018; Feng et al., 2019)**.

The most popular form of Coronary Artery Disease (CAD) is myocardial infarction, that is in charge of over 15% of mortality each year throughout the world. The prevalence of MI approaches three million people worldwide, with more than one million deaths in the United States (US) annually. Risk factors are classified into causal, conditional and predisposing. The causative factors include cigarette smoking, diabetes, hypertension, and increased total cholesterol. Whereas, conditional risk factors involve increased triglycerides, lipoproteins, low-density lipoproteins, increased levels of homocysteine and coagulation factors. The group of predisposing factors includes obesity, lack of physical activity, male gender, family history concerning early occurrence of coronary heart disease and psychosocial factors **(Peretti et al., 2020; Nascimento et al., 2019)**.

Signs and symptoms of myocardial infarction patients are chest, arm, or jaw pain with descriptors of dull, heavy, tight, pressure, ache, squeezing, crushing, or gripping. Atypical pain was classified in patients reporting epigastric or back pain or pain that was burning, stabbing, indigestion-like, or any other pain description or presentation. Guidelines also state that radiation of pain and the presence of associated symptoms form part of a typical presentation; therefore the presence of radiation to right arm, left arm, neck, jaw, back and presence of any associated feature include nausea, vomiting, sweating, dyspnea, palpitations **(Ferry et al., 2019)**.

Complication of MI; the most commonly encountered mechanical complications are acute mitral regurgitation secondary to papillary muscle rupture, ventricular septal defect, pseudo aneurysm, free wall rupture and heart failure; each complication is associated with a significant risk of morbidity, mortality, and hospital resource utilization. The care for patients with mechanical complications is complex and requires a multidisciplinary collaboration for prompt recognition, diagnosis **(Damluji et al., 2021)**.

Nurse (CHN) plays an essential role in health promotion through disease management and prevention by providing support and required information to the patients with myocardial infarction. CNH can also facilitate and educate to self-care effectively, encourages patients to make healthy lifestyle choices, prevent further progression of disease and provide social and psychological support. In addition, the nurse should allow time for the patients to express concerns about complaints and treatment modalities **(Zakeri et al., 2022)**.

Significance of the study:

Worldwide, each year more than sevenmillion people experience myocardial infarction,in which one year mortality rates are today in therange of 10% but differ with patient features. The significances are even more spectacular among patients who live, 20% hurt a second cardiovascular incident in the first year and around 50% ischemic heart disease. In developing countries, MI is appraised to considerfor seven out of 10 deaths (**Chindy et al., 2020& Shaheen et al., 2020**). **Shaqran et al., 2024** found that heart attacks are a significant health issue in Saudi Arabia, with certain lifestyle choices and medical conditions increasing the risk. Heart attacks are a major health concern in Saudi Arabia. To lower the number of heart attacks, it's important for people to make healthier lifestyle choices.

Aim of the study

This study aimed to assess self-care for Saudi patients with myocardial infarction.

Research Questions:

- 1- What is the Saudi patients' knowledge regarding myocardial infarction?
- 2- What is the Saudi patients' reported self-care practices regarding myocardial infarction?
- 3- Is there a relation between Saudi patients' socio demographic characteristics and their knowledge?
- 4- Is there a relation between Saudi patients' total knowledge and their total practice?

Subject and Methods:

Research design:

A descriptive research design was utilized toconduct this study.

Setting:

The study was conducted at Cardiac Out Patient Clinics in Saudi University Hospital

Sampling:

Simple random sample was used in this study.The total number of sample 254 myocardial infarction patients.

Tools of data collection:

Structured interviewing questionnaires wasdesigned by the investigator and revised by supervisor composed of four parts:

First part: Concerned with the socio- demographic characteristics of the patients which included 8 closed ended questions (age, sex, residence, number of floor, educational level, occupation, marital status, and monthly income.

Second Part: Concerned with the patients' medical history which included 8 closed ended questions (previous heart surgery, type of operation, number of hospital admission, onset of myocardial infarction, other chronic disease, type of disease, family history for MI, and degree of kinship).

Third part: Concerned with: the patients' knowledge; which consisted of 2 subparts:

(A): Knowledge about the myocardialinfarction disease composed of 9 questions. (B): Knowledge about the self-care composedof 4 questions.

Knowledge scoring system:

It was calculated as follows 2 points for correctand complete answer, while 1 point for correct and incomplete answer and 0 for wrong answer.These score converted into a percent andclassified as the following:

Total scores of knowledge = 26 points

- **Good** when total score was 75% to 100% (19:26 points).
- **Average** when the total score was 50 to less than 75% (13- 19 points).
- **Poor** when the total score was less than 50% (<13 points).

Forth part: Concerned with assessment of patients' self-care reported practices and was included 9 categories classified as follow (movement and daily living activities, nutritional practices, treatment compliance, exercise practices, rest and sleep practices, healthy habits to prevent infection sick again, social care practices, psychological care, and management of pain and difficulty breathing).

Practices scoring system: it was calculated as follows 2 points for always done, while 1 point for some time done, and 0 for never done. These scores of the items were summed- up and converted into present score. As well as patient total reported practices score was classified as the following:

Total scores of practices = 114 points

- **Satisfactory** when the total score was > 80%(> 91 points).
- **Unsatisfactory** when the total score was < 80% (< 91 points).

Validity of the tools:

The tools validity was done by five Experts who reviewed the tools for clarity, relevance, comprehensiveness, and applicability.

Reliability of the tools:

The reliability was done by Cronbach's Alpha coefficient test which revealed that each of the two tools consisted of relatively homogeneous items as indicated by the moderate to high reliability of each tool. The internal consistency of knowledge was 0.732 and the internal consistency of practices was 0.841.

Ethical considerations:

Permission has been obtained and orally from each patient before conducting the interview and given a brief orientation to the purpose of the study. They were also reassured that all information gathered would be confidential and used only for the purpose of the study. No names were required on the forms to ensure anonymity and confidentiality. They were also informed about their right to withdraw at anytime from the study without giving any reasons.

Pilot Study:

The pilot study was carried out on 10% (25 patients) of the sample size who represented patients from total sample to test the applicability and clarity of the tool for further required modification,

Field work:

The data collection phase from myocardial infarction patients who attended in Cardiac Out Patient Clinics in Saudi University Hospital through interviewing with them at waiting area. Collected data was conducted at a period of 6 months which started from the beginning of January 2024 to end of June 2024.

Statistical analysis:

Computerized data entry and statistical analysis were fulfilling scored using Statistical Package for Social Science (SPSS), version 22. Descriptive was used as frequency, percentage then other statistical test such as, Chi-square and using mean and standard deviation.

Results:

Table (1): Shows that; 44.5% of studied myocardial infarction patients aged from 45 years to less than 55 years with mean $\pm$ SD 52.41 $\pm$ 7.35, 77.6% of them male, 37.4% were lived in middle floor, 41.3% had secondary education, 63% were worked, and 64.2% were married, while 64.2% had enough income per month.

Socio demographic characteristics	No	%
Age		
35<45	35	13.8
45<55	113	44.5
< 55	106	41.7
Mean ±SD	52.41±7.35	
Sex		
Male	197	77.6
Female	57	22.4
Number of floor		
Ground floor	93	36.6
Middle floor	95	37.4
Up stairs	66	26.0
Education level		
Primary education	98	38.6
Secondary education	105	41.3
High education	51	20.1
Occupation		
Work	160	63.0
Not work	94	37.0
Marital status		
Married	163	64.2
Divorced	45	17.7
Widowed	46	18.1
Monthly income		
Enough	163	64.2
Not enough	91	35.8

Table (2): Shows that; 3.5% of studied myocardial infarction patients had previous heart surgery, 66.7% had open heart surgery, 55.5% were admitted once to hospital with myocardial infarction, 44.9% had myocardial infarction from 3 months to less than 6 months, 71.7% suffering from chronic diseases, 60.4% had hypertension disease, and 12.2% had family history of myocardial infarction, while 48.4% their father had myocardial infarction.

Past medical history	No	%
Previous heart surgery	9	3.5
Type of the operation (n= 9)		
Cardiac catheterization	3	33.3
Open heart	6	66.7
Number of hospital admissions with myocardial infarction		
Once	141	55.5
No previous admission	113	44.5
Present medical history		
Onset of myocardial infarction		
>3 months	81	31.9
3> 6 months	114	44.9
6 >1 year	59	23.2
Other chronic diseases	182	71.7
Type of disease (n=182).		
Diabetes	42	23.1
Hypertension	110	60.4
Chest diseases	30	16.5
Family history of myocardial infarction	31	12.2
Degree of kinship (n=31)		
Brother	5	16.1
Father	15	48.4
Uncle	11	35.5

Figure (1): Illustrates that; 63.8% of studied myocardial infarction patients had total average level of knowledge about myocardial infarction and self-care, and 20.5% had total poor level of knowledge about myocardial infarction and self-care, while only 15.7% had total good level of knowledge about myocardial infarction and self- care.

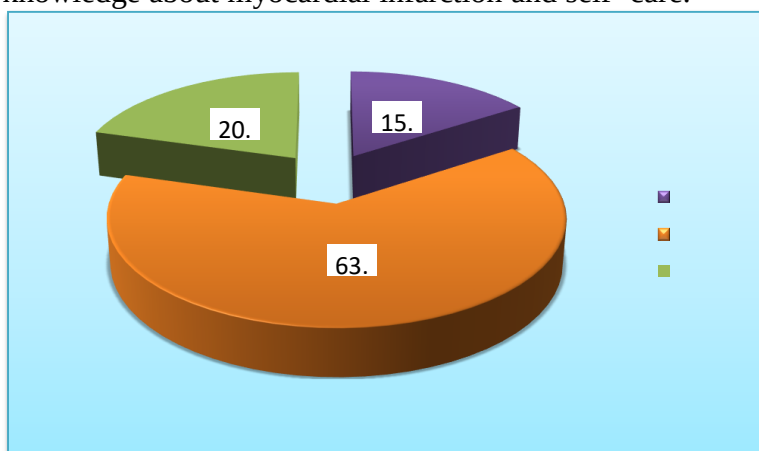


Figure (2): Illustrates that; 65% had unsatisfactory reported self-care practices, while 35% of studied myocardial infarction patients had satisfactory reported self-care practices.

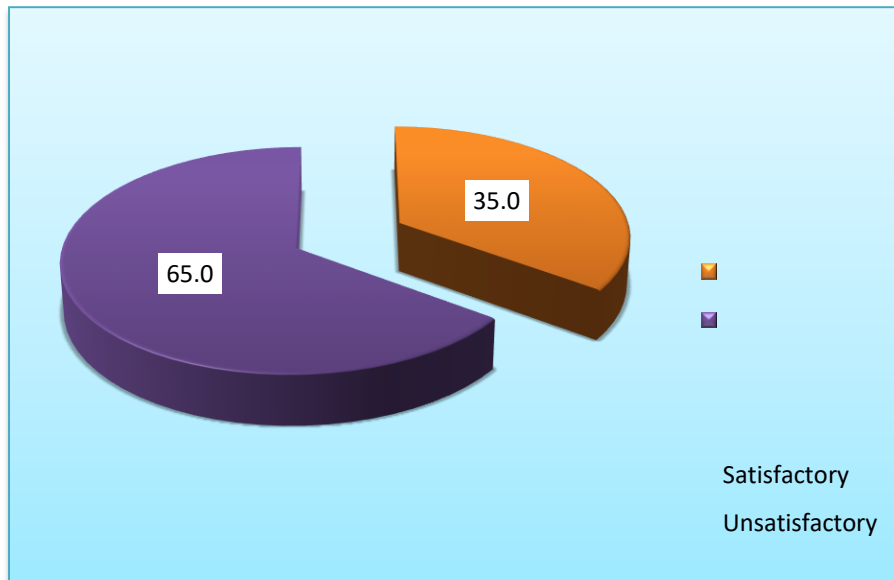


Table (3): Reveals that; there were highly statistical significant relation between studied myocardial infarction patients total knowledge level and their socio demographic characteristic regarding educational level, and there were statistical significant relations between studied myocardial infarction patients total knowledge level and their socio demographic characteristics regarding age, sex, residence, and occupation, while there were no statistically significant relation between studied myocardial infarction patients total knowledge level and their socio demographic characteristics regarding marital status and monthly income.

Socio demographic characteristics	Total knowledge							
	Poor (n=52)		Average (n=162)		Good (n=40)		X ²	p-value
	No	%	No	%	N	%		
Age								
35<45	10	19.2	18	11.1	7	17.5	12.15	016*
45<55	15	28.8	71	43.8	7	17.5		
< 55	27	51.9	73	45.1	26	65.0		
Sex								
Male	42	80.8	132	81.5	23	57.5	10.98	004*
Female	10	19.2	30	18.5	17	42.5		
Residence								
Rural area	19	36.5	97	59.9	22	55.0	8.65	013*
Urban area	33	63.5	65	40.1	18	45.0		
Educational level								

Primary education	16	30.8	67	41.4	15	37.5	2021	000**
Secondary education	15	28.8	75	46.3	15	37.5		
High education	21	40.4	20	12.3	10	25.0		
Occupation								
Work	42	80.8	93	57.4	25	62.5	9.221	010*
Not work	10	19.2	69	42.6	15	37.5		
Marital status								
Married	29	55.8	108	66.7	26	65.0	3.654	0.455
Divorced	13	25.0	27	16.7	5	12.5		
Widowed	10	19.2	27	16.7	9	22.5		
Monthly income								
Enough	30	57.7	106	65.4	27	67.5	1.254	0.534
Not enough	22	42.3	56	34.6	13	32.5		

Table (4): Shows that; there were highly statistically significant relation between the total self-care practices level of studied myocardial infarction patients and their total knowledge level.

Total knowledge	Total self-care practices					X ²	p-value
	Unsatisfactory (n=165).		Satisfactory (n=89).				
	No	%	No	%			
Poor (n=52)	44	26.7	8	9.0	65.66	.000**	
Average (n=162)	117	70.9	45	50.6			
Good (n=40)	4	2.4	36	40.4			

Discussion

Maintaining health, preventing chronic illnesses, and managing them all depend on self-care. Self-care is the process by which people and their families manage disease and preserve their health through health-promoting behaviors. The idea that self-care includes a range of general and disease-specific practices that people with chronic illnesses engage in to preserve their emotional and physical stability is encapsulated in this description. These practices, such as making sure you get enough sleep, taking your medications as directed, managing your stress, and exercising, are known as self-care maintenance (Zaben & Khalil 2019&Riegel et al., 2019).

Regarding to medical history; the present study revealed that less than three quarters of studied myocardial infarction patients had other chronic disease, more than three fifth of them had hypertension disease and less than three fifths of patients had once admission to hospital with MI. This finding is supported with Hartikainen et al., (2020), who reported that more than three fifths (67%) of myocardial infarction patients had hypertension disease and disagreed with present result due to reported that of less than fifth of myocardial infarction patients had

medical history of myocardial infarction (15.9%). This might be due to patients with hypertension cause difficulty in supplying blood to the heart, which causes an irregular heartbeat and leads to a heart attack, and inability of patients to apply healthy self-care lead to vulnerable to recurrence of the disease.

Regarding myocardial infarction patients' total knowledge level; the present study revealed that more than three fifths of myocardial infarction patients had average knowledge about myocardial infarction and self-care. This finding is supported by **Ibrahim (2017)**, who reported that more than three fifth of patients had average knowledge (71.1%), while this finding disagreed with **Liu et al., (2022)**, who reported that slightly less than two fifths of myocardial infarction patients had high level of knowledge (39.5%), (39.4%) had low level of knowledge, and more than one fifth of them had average of knowledge (21.15%). This might be due to insufficient health education for patients and the patients were not able to access information or attend programs related to their cases, and the inability to participate in the treatment program during hospitalization.

Regarding myocardial infarction patients' total practice level; the present study revealed that almost more than two thirds had unsatisfactory reported practices, while more than one third of myocardial infarction patients had satisfactory reported practices regarding self-care. This finding is disagreed with **Adhikari & Bhandari (2017)**, who reported that less than three fifths of myocardial infarction patients had good reported practices regarding self-care (57.3%), while more than two fifths of them had poor reported practices (42.7%). This might be due to lack of programs offered on social networking sites and lack of rehabilitation centers to help patients practice self-care in a correct manner.

Regarding to relation between total studied myocardial infarction patient's knowledge and socio demographic characteristics; the present study revealed that highly statistical significant relation between total knowledge among studied myocardial infarction patients and their socio demographic characteristic regarding educational level, and there were statistical significant relations between total knowledge among studied myocardial infarction patients and their socio demographic characteristic regarding age, sex, residence, and occupation, while there were no statistically significant relation between total knowledge among studied myocardial infarction patients and their socio demographic characteristic regarding marital status and monthly income. This finding supported by **Adhikari & Bhandari (2017)**, who reported that highly statistical significant relation regarding educational level.

Regarding relation between total studied myocardial infarction patient's self-care practices and their total knowledge; the present study revealed that there were highly statistically significant relation between total self-care practices and total knowledge among studied myocardial infarction patients. This result is supported by **Dahal & Karki, (2017)**, who reported that there were highly statistically significant relation between total self-care practices level and total knowledge level among studied myocardial infarction patients. This might be due to if the studied myocardial infarction patients total knowledge increases their total practice also increase and become better.

Conclusion

Self-care is essential for treating chronic illnesses, preventing them, and preserving health. The process through which individuals and their families manage illness and maintain their health by engaging in practices that promote health is known as self-care. This statement captures the notion

that self-care encompasses a variety of general and disease-specific behaviors that individuals with chronic illnesses do to maintain their mental and physical stability. These behaviors are referred to be self-care maintenance and include things like getting adequate sleep, taking your medications as prescribed, controlling your stress, and exercising.

Recommendation

- 1- Health educational program should be developed and implemented for patients with myocardial infarction to improve, and updated knowledge and self-care practices.
- 2- Disseminate booklet with illustrated pictures included all information and self-care measures towards myocardial infarction at Outpatient Clinic to enhance self-care practice to be available for patients to enhance self-care practice.
- 3- Regular follow up for myocardial infarction patients to ensure effectiveness of medication, and avoiding complications.
- 4- Further studies needed to be applied the same study in large sample size in different setting in Saudi Arabia.

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