Research Article

Symptoms Experienced, Challenges Faced, and Satisfaction with Nursing Care of Patients with Acute Myocardial Infarction

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Abstract

Aim: The aim of the study was to assess symptoms experienced, challenges faced, and satisfaction with nursing care among patients with acute myocardial infarction (AMI) admitted in selected hospital.

Methods: This was a descriptive study. Data were collected from sixty patients with AMI. Structured interview was used to obtain data regarding symptoms and challenges. Self-reported Likert Scale was used to collect data regarding satisfaction with nursing care. Data were analyzed quantitatively in terms of percentage, logistic regression, and Z–scores.

Results: Symptoms experienced by patients: Most common symptoms experienced were chest pain (65%), sweating (68%), breathlessness (47%), fatigue (42%), indigestion (15%), dizziness (22%), and anxiety (68%). Sweating (B = 3.542), vomiting (B = 26.452), headache (B = 3.47), and anxiety (B = 0.584) were most common symptoms associated with chest pain. Challenges faced by patients: Symptom interpretation: Only 37% thought their symptoms to be as heart attack. Decision-making: About 48% of the participants decided to approach private clinic first. Transport issues – only 2% used ambulance to reach hospital. Satisfaction of patients with nursing care received: Highest satisfaction for: empathetic attitude (70.22%), pain management (76.76%), and skill in nursing procedures (73.89%). Lowest satisfaction for: Clear explanation during procedures (43.63%) and health education (46.18%).

Conclusion: The study reveals that symptoms experienced by AMI patients varied from each other. Challenges faced by patients were mainly difficulty in symptom interpretation, decision making and inappropriate mode of transport. Patient satisfaction with nursing care was good except for: Lack of clear explanation during procedures and health education, which needs improvement.

Keywords: Acute myocardial infarction, challenges, satisfaction with nursing care, symptoms.

Introduction

The Global Burden of Diseases Studies has revealed that cardiovascular diseases such as coronary heart disease are important causes of death in the low- and middle-income countries. The World Health Organization has summarized burden of chronic diseases. Age standardized cardiovascular diseases death rate was 405/100,000, showing that in middle aged participants (30–69 years) the death rates are inappropriately high in developing countries.[1] The key results from the South Asian component of the INTERHEART study concluded that deaths due to acute myocardial infarction (AMI) in South Asians occur at 5–10 years earlier than western population.[2] Cardiovascular disease will be the largest cause of death and disability by 2020 in India. It has been forecasted that 2.6 Million people will die from coronary heart disease. In addition, India does not yet have an adequate number of all types of health professionals, such as doctors, specialists, nurses, nurse practitioners, paramedics, and health workers.[3]

The mortality from AMI remains high with most deaths occurring before the patient reaches hospital. AMI is caused by a sudden blockage, most often secondary to thrombosis of one of the branches of a coronary artery that interferes with blood supply to a portion of myocardium, producing ischemic death of tissue over a period of hours.[4] Common signs and

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symptoms include: Pressure, tightness, pain or a squeezing or aching sensation in chest or arms that may spread to neck, jaw or back; nausea, indigestion, heartburn or abdominal pain, shortness of breath, diaphoresis, fatigue, light headedness, or sudden dizziness.[5]

Berg *et al*. in 2009 conducted a study on symptoms of first myocardial infarction in men and women. The study included 225 patients with a first AMI: 52 women and 173 men. Study concluded that chest pain was the most common symptom, affecting 88.5% (46/52) of the women and 94.8% (164/173) of the men. Women had significantly higher rates of 4 symptoms: nausea, back pain, dizziness, and palpitations 73% as compared with 43%.[6] A similar study based on 568 women and 1710 men between 25 and 74 years, concluded women and men did not differ regarding the chief AMI symptoms of chest pain or feelings of tightness or pressure and diaphoresis. However, women were more likely to have additional symptoms.[7]

Chest pain is no more the only indicator of myocardial infarction. Women are less likely to report the traditional symptoms of myocardial infarction as compared to men. The differences in symptom presentation need to be investigated as people respond to them differently. The patient's interpretation of myocardial infarction symptoms plays important role in the decision process to seek treatment. People with misinterpretation of symptoms had a delay time of at least 2 h compared with persons who correctly attributed their symptoms.[8]

Patients with AMI, face many challenges till they reach hospital. Symptom interpretation, decision-making, and selection of transport mode are major pre-hospital issues. Selection of transport mode depends on educational level, availability, and convenience of patients and this usually prolongs the pre-hospital delay time.

Oterhals *et al*. in 2006 conducted a study to explore and describe the relationship between received information and satisfaction with healthcare after AMI. 111 patients participated. In general, patients were highly satisfied with their healthcare and the more information the patient reported to receive, the more satisfied he/she was with the hospital stay. Patients were least satisfied with information about medication and possible future problems.[9]

Patient satisfaction with healthcare is significantly affected by the nursing care. Many studies have been conducted on patient experiences of AMI symptoms; challenges faced by patients during the pre-hospital period but not much in a developing country like India. Few studies have been conducted on patient satisfaction of care and treatment they receive in hospital. This study aims to assess the symptoms experienced, challenges faced by patients with AMI in pre-hospital period and their satisfaction with nursing care received in Indian setting.

Objectives of study

The objectives are as follows:

1. To assess symptoms experienced by the patients admitted with AMI from onset to hospitalization
2. To identify challenges faced by patients admitted with AMI from onset to hospitalization
3. To assess satisfaction of nursing care received by patients admitted with AMI from hospitalization to discharge.

Methods

Study design and setting

In this study, non-experimental research approach was used. A descriptive survey research design was used to assess frequency of symptoms experienced, challenges faced, and satisfaction with nursing care of patients with AMI. This is a hospital-based study, carried out in Mumbai, a metropolitan city of India. The researcher selected a multi-specialty private hospital. This hospital has a bed strength of 750. Patients with AMI are admitted in intensive coronary care unit/intensive care units and once stable are shifted to the cardiology ward or medical ward. The researcher carried out the study in cardiology/medical ward setting when patients were ready for discharge.

Sampling technique and sample

Non-probability purposive sampling technique was used to select the sample. Sample consisted of sixty patients with AMI admitted in selected hospital. Patients diagnosed to have AMI, between the age group 20 and 70 years and willing to participate in the study were selected.

Data collection technique and tool

In this study, the researcher used structured interview schedule to obtain information about demographic data, symptoms experienced, and challenges faced by patients, by a face-to-face interaction. The investigator used self-reported 5 point Likert Scale to collect data about satisfaction of patients with nursing care. It was best suited as it helped to give quantified measurement of patient's level of satisfaction with the nursing care.

The data collection tool consisted of the following parts:

1. Section I: The first part of the interview schedule included the demographic data. The items included were age, gender, education, occupation, health habits, and diet
2. Section II: This part included medical data consisting of diagnosis, type of AMI, associated diseases, treatment received, and frequency of myocardial infarction
3. Section III: This part consisted of ten questions regarding data related to Symptoms experienced by patients
4. Section IV: This part consisted of ten questions regarding data related to challenges faced by patients such as symptom interpretation, decision-making, and transport issues
5. Section V: This part consisted of a 5 point Likert scale to collect data regarding satisfaction of patients regarding nursing care received. It included a total of 20 items under following sub headings – General behavior, communication, comfort and pain management, procedure skills, environment, and health education. Rating indicated level of satisfaction as follows:

5→Very satisfied; **4**→Satisfied; **3**→Neither satisfied nor dissatisfied;

2→Dissatisfied; **1**→Very dissatisfied.

Data collection

Before data collection written permission was obtained from the medical director of the hospital. Permission from the head of the concerned departments was also taken. The patients who met the criteria and were willing to participate in the study were selected. A written informed consent was taken from the participants. The investigator needed about 15–20 min for interviewing each patient regarding symptoms experienced and challenges faced by them. Participants were then asked to complete the rating of Likert scale related to their satisfaction with nursing care received, which took 10–15 min.

Data analysis

The data were analyzed in terms of the objectives of the study using descriptive and inferential statistics.

- Frequency and percentage were used for the analysis of demographic data and medical data of the patients
- Frequency, percentage, and logistic regression for the analysis of symptoms experienced by patients
- Frequency and percentage for the analysis of challenges faced by patients
- Item-wise scoring of Likert scale, calculation of mean scores, Z-scores, Z-score percent, and Top box was used for the analysis of satisfaction of nursing care received by patients.

Results

Demographic data

Majority of the patient's, that is, 33% were in the age group 41–50 years and 42% were 51–60 years. Majority of the patients, 90% were males. Maximum number of patients was educated up to secondary level. Half of the patients had service as their occupation. Majority had their monthly family income between 10,001 and 50,000 INR. More than half of patients had unhealthy habits such as smoking, tobacco consumption or alcohol consumption. About 88% of the patients had mixed type of diet.

Medical data

For all the patients, non-invasive test, that is, ECG was used to confirm the diagnosis. About 47% of the patients had non-ST elevation myocardial infarction. Most of the patients had diabetes mellitus (33%) and hypertension (45%) as associated diseases. About 83% of the patients received percutaneous coronary intervention with stent as their treatment. About 87% of the patients had experienced AMI for the first time.

Symptoms experienced by patients

Chest pain was first symptom experienced by 65% of the patients. About 48% of the patients had left sided chest pain. For majority, the pain radiated to back (30%) and left shoulder (23%). Most of them described pain as aching or tightness. Most common symptoms experienced were sweating (68%), breathlessness (47%), fatigue (42%), indigestion (15%), dizziness (22%), and anxiety (68%). Duration of symptoms was half an hour for 58% of the patients [Tables 1 and 2 and Figure 1]. Based on logistic regression, sweating (B = 3.542), vomiting (B = 26.452), headache (B=3.47), and anxiety (B = 0.584) were the most common symptoms observed along with chest pain [Table 3].

Challenges faced by patients

Symptom interpretation – majority thought their symptoms to be due to causes other than heart attack [Figure 2]. About 52% of the patients took rest instead of rushing to hospital. Pain was most convincing symptom for 77% of patients to seek medical help. Decision-making – majority of the patients, 78% were at home during symptom experience. Family support was available for 87% of the patients. Lack of symptom relief was the main reason for 73% of the patients to go to hospital [Figure 3]. Majority of the patients, 48% decided to approach private clinic first. Transport issues – the most common mode of transport used was taxi by 45% of patients while only 2% used ambulance [Figure 4]. About 68% of the patients reached hospital within an hour [Figure 5]. Majority of the patients, 47% reported that maximum time was lost in decision making.

Table 1: Analysis of symptoms experienced by patients *n*=60

Symptom experience	Frequency	Percentage
First symptom experienced		
Chest pain	39	65
Breathlessness	11	18
Sweating	10	17
Indigestion	7	12
Other	8	13
Activity done before onset of symptoms		
Resting	23	38
Eating meal	14	24
Physical activity	23	38
Emotional stress	0	0
Other	0	0
Area of Chest in which pain/discomfort was experienced		
Generalized Chest	15	25
Left side	29	48
Sub-sternal	1	2
None	8	13
Other	7	12
Area of pain radiation		
Left shoulder/arm	14	23
Right shoulder/arm	4	7
Back	18	30
Neck or Jaw	11	18
Other	26	43
Description of pain/discomfort		
Aching	20	33
Tightness	21	35
Crushing	6	10
Burning	3	5
Other	10	17

Table 1 presents the frequency and percentage of symptoms experienced by patients with acute myocardial infarction

Table 2: Analysis of symptoms experienced by patients *n*=60

Symptom experience	Frequency	Percentage
General symptoms		
Sweating	41	68
Fatigue	25	42
Breathlessness	28	47
Palpitations	20	33
Other	6	10
Gastrointestinal symptoms		
Anorexia	2	3
Indigestion	9	15
Nausea	6	10
Vomiting	5	8
Other	41	68
Neurological symptoms		
Dizziness	13	22
Headache	11	18
Tingling in arms/hand	8	13
Syncope	3	5
Other	30	50
Emotional symptoms		
Anxiety	41	68
Fear	1	2
Depression	1	2
Anger	0	0
Other	17	28
Duration of symptoms		
½ h	35	58
1 h	10	17
2 h	4	6
3 h	1	2
Other	10	17

Table 2 presents the frequency and percentage of symptoms experienced by patients with acute myocardial infarction

Satisfaction of patients with nursing care received

Satisfaction with nursing care among the patients was good for most aspects of nursing care. Highest satisfaction was observed with certain aspects of nursing care that is: Their empathetic attitude (70.22%), pain management (76.76%), administration of medications (69.68%), skill in nursing procedures (73.89%), and promotion of rest/sleep (65.79%) [Table 4 and Figure 6]. Lowest satisfaction was observed for certain aspects of nursing care that is: Clear explanation before and after procedures (43.63%) and health education about diet, exercise, etc., (46.18%). Thus, these are areas where nursing care needs to improve.

Table 3: Logistic regression

Variables in the equation

Symptom experience	B	S.E.	Wald	df	Sig.	Exp(B)
Resting	0.399	1.3	0.094	1	0.759	1.491
Eating meal	–2.743	1.902	2.079	1	0.149	0.064
Sweating	3.542	1.554	5.199	1	0.023	34.551
Fatigue	–1.704	1.565	1.186	1	0.276	0.182
Breathlessness	–3.74	1.697	4.859	1	0.028	0.024
Indigestion	–26.522	1.20E+04	0	1	0.998	0
Nausea	0.429	1.698	0.064	1	0.801	1.535
Vomiting	26.452	1.20E+04	0	1	0.998	3.08E+11
Dizziness	–4.654	1.851	6.321	1	0.012	0.01
Headache	3.47	2.395	2.099	1	0.147	32.14
Anxiety	0.584	1.49	0.153	1	0.695	1.792
Constant	2.643	1.657	2.544	1	0.111	14.06

Table 3 Based on the beta values given above sweating (B = 3.542), vomiting (B = 26.452), headache (B = 3.47), and anxiety (B = 0.584) were the most common symptoms observed along for chest pain

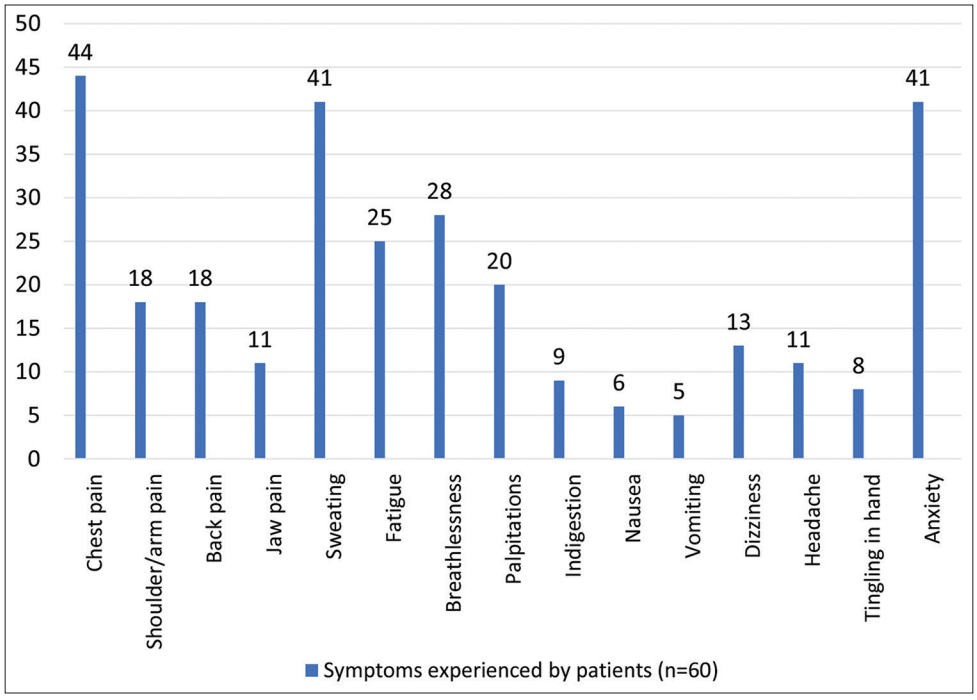

Figure 1: Symptoms experienced by patients with acute myocardial infarction

Figure 1 presents the frequency of symptoms experienced by patients with acute myocardial infarction. It is evident that the most common symptoms were chest pain, sweating, and anxiety although a variety of other symptoms were also observed

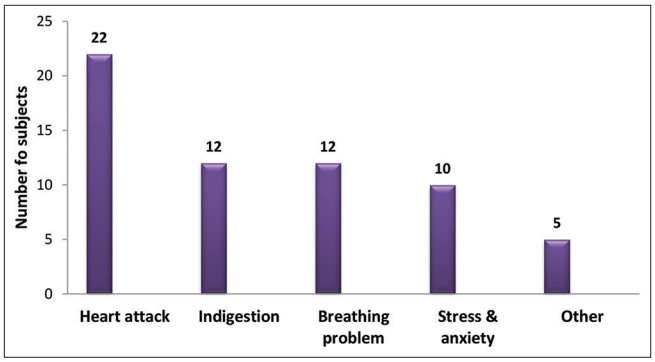

Figure 2: Comparison of subjects according to their symptom interpretation

Symptom interpretation Figure 2 reveals that the subjects had different ways of looking at their symptoms. Most of the subjects that is 37% ($n = 22$) thought that it was a heart attack, 20% ($n = 12$) interpreted it as indigestion, 20% ($n = 12$) interpreted it as a breathing problem, 17% ($n = 10$) thought that it was only due to stress/anxiety, and 8% ($n = 5$) of them were included in other group which thought it to be as muscular pain or hypotension

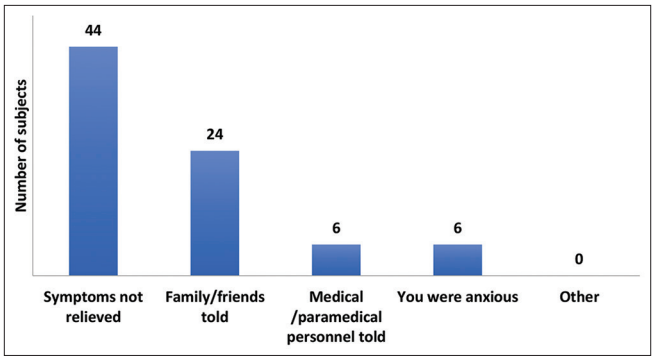

Figure 3: Comparison of subjects according to decision making

It is evident from Figure 3 that 73% ($n = 44$) of the subjects decided to go to the hospital because symptoms were not relieved. 40% ($n = 24$) decided because family/friends told, 10% ($n = 6$) due to medical/paramedical personnel and 10% ($n = 6$) decided because they were anxious. Thus severity of symptoms and family members play important role in decision-making

Discussion

Symptoms experienced by patients

The study findings have suggested that although most patients have presented with the typical symptoms of AMI such as chest pain, breathlessness, and sweating there were patients presenting with atypical symptoms or no symptoms also. The study findings are similar to the study by Park and Lee (2014) who revealed five different symptom clusters of AMI.[10] The study by Ryan *et al*. (2007) also concluded that symptoms clusters of AMI vary among persons.[11] Berg *et al*. (2009)[6] and Kirchberger *et al*. (2011)[7] have concluded in their study that there are no significant differences in symptoms between men and women, but women tend to have additional symptoms than men. This study was not able to highlight gender differences in symptoms experienced by patients since only 10% of the sample were women.

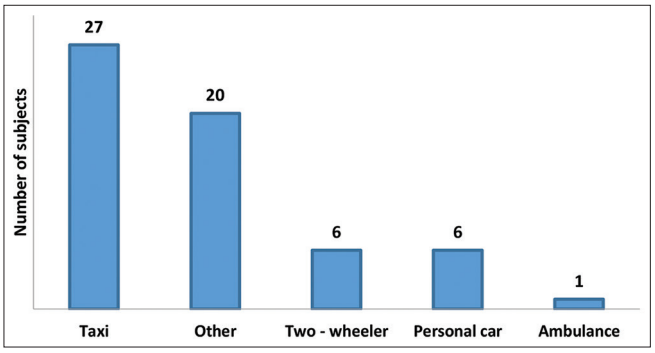

Figure 4: Comparison of subjects according to transport facility used

From Figure 4, transport facility used by most of the subjects was taxi by 45% ($n = 27$), two-wheeler by 10% ($n = 6$), personal car by 10% ($n = 6$), and ambulance by only 2% ($n = 1$). The remaining 33% ($n = 20$) were included in other group and used transport such as local train, rickshaw, bus, and few also walked to the health care facility. Thus, it is clear that majority used taxi to reach health care facility instead of ambulance even in case of symptoms such as chest pain and breathlessness

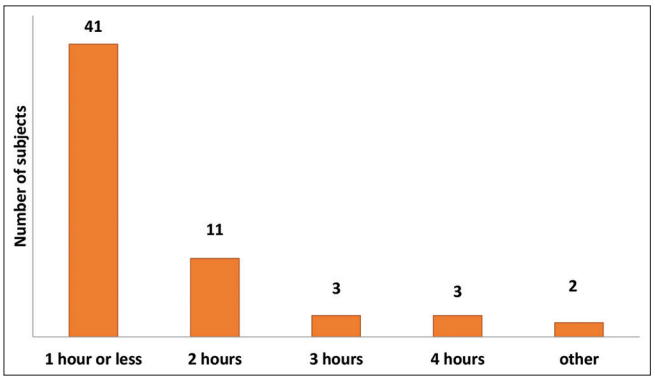

Figure 5: Comparison of subjects according to time taken to reach hospital

It clear from Figure 5 that the time taken to reach the hospital was 1 h or less for majority of subjects, that is, 68% ($n = 41$), 2 h for 18% ($n = 11$), 3 h for 5% ($n = 3$), 4 h for 5% ($n = 3$), and more than 4 h for 3% ($n = 2$) of the subjects. Thus, it is clear that the time taken to reach hospital by most subjects was more or less ideal

Challenges faced by patients

With regard to symptom interpretation the results indicated that only 37% interpreted the symptoms to be as heart attack and 52% of the patients took rest before approaching medical help. These findings are similar to study by Gartner *et al*. (2007) who stated that uncertainty about symptoms was one of the causes for pre-hospital delay.[12] Chest pain was the most convincing symptom to seek medical help, this finding correlates to findings by DeVon *et al*. (2010), where patients with constant pain sought treatment sooner than others.[13] The study found that the time taken by patients to reach hospital was less than one hour in majority cases, which is contrary to findings of Berton *et al*. (2001)[14] and Gao and Zhang (2013),[15] where the pre-hospital delay time was more. This study was conducted in a metropolitan city where adequate and within-reach medical facilities were available and this could be a reason why the time taken to reach hospital was

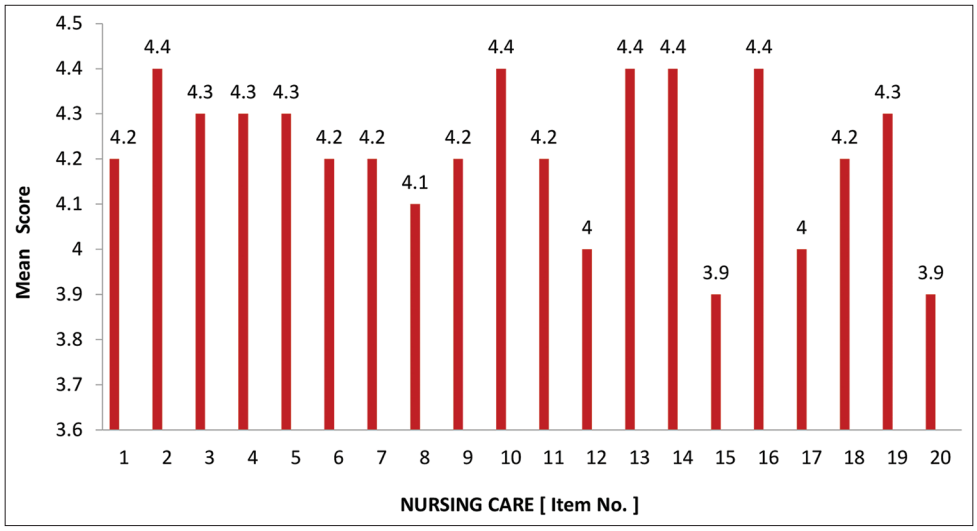

Figure 6: Mean scores for satisfaction with nursing care

Figure 6 presents item wise mean scores for satisfaction with nursing care. While most items have received good scores, Item no. 15 (Clear explanation before and after procedures) and Item no. 20 (Information about medications, diet, exercise, etc.) have received the lowest mean scores

Table 4: Analysis of patient satisfaction with nursing care

Item No	Mean Score	SD [σ]	Numerator [χ-μ]	Z-Score	Z-Score %
General Behavior					
1	4.2	0.7	0.2	0.323	62.68
2	4.4	0.7	0.4	0.530	70.22
3	4.3	0.8	0.3	0.298	61.75
Communication					
4	4.3	0.7	0.3	0.489	68.78
5	4.3	0.9	0.3	0.320	62.56
6	4.2	0.6	0.2	0.316	62.41
7	4.2	0.8	0.2	0.238	59.41
8	4.1	0.9	0.1	0.093	53.74
Comfort and pain management					
9	4.2	0.6	0.2	0.393	65.31
10	4.4	0.6	0.4	0.730	76.76
Procedure skills					
11	4.2	1.0	0.2	0.154	56.14
12	4.0	0.8	0.0	0	50.00
13	4.4	0.8	0.4	0.515	69.68
14	4.4	0.5	0.4	0.639	73.89
15	3.9	0.9	–0.2	–0.160	43.63
16	4.4	0.9	0.4	0.406	65.79
Environment					
17	4.0	0.8	0.0	0.019	50.80
18	4.2	0.7	0.2	0.211	58.38
19	4.3	0.8	0.3	0.333	63.06
Health education					
20	3.9	0.9	–0.1	–0.095	46.18

Table 4 presents item wise the mean scores and Z-score percent of satisfaction of patients with nursing care

found to be less. This study data reveal that only 2% of the patients used ambulance to reach hospital, which is similar to findings of Henrikssona *et al*., who concluded that majority patients preferred to use own car as they believed it to be faster than ambulance.[16] Although time was not an issue for most patients, the mode of transport chosen was unsafe due to risk of sudden cardiac death in AMI.

Satisfaction with nursing care

Nursing care is important aspect for patients hospitalized with AMI. Glickman *et al*. (2006) had concluded that satisfaction with nursing care was important for overall patient satisfaction.[17] This study findings revealed that patients were very satisfied with most aspects of nursing care such as general behavior, pain management, and skills in nursing procedures. A study by Cronin and Harrison also stated that nursing actions related to physical care and monitoring of patients were most important indicators of caring.[18] The analysis of this study showed that lowest satisfaction was observed for certain aspects of nursing care such as: Clear explanation before and after procedures and health education about diet, exercise, etc. These findings are similar to the study by Larson *et al*. (2009), who concluded that meeting information needs are significantly associated with patient satisfaction.[19] Thus, nurses must ensure to meet information needs of patients with AMI.

Conclusion

The study reveals that symptoms experienced by AMI patients varied from each other. Challenges faced by patients were mainly difficulty in symptom interpretation, decision-making, and inappropriate mode of transport. Patient satisfaction with nursing care was good except for: Lack of explanation during procedures and health education, which needs improvement.

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