



Original Article

A study to explore the factors related to treatment seeking delay among adults diagnosed with acute myocardial infarction at KMCH, Coimbatore



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ABSTRACT

Objective: The main aim of the study was to explore the factors causing delay in seeking treatment among adult patients diagnosed with acute myocardial infarction (AMI) and compare the factors between timely and late treatment seeking groups.

Method: A total of 93 subjects were included in the study diagnosed with AMI interviewed within 48 h of hospitalization. Data were collected from onset of symptoms to arrival at hospital on demography, clinical profile, clinical factors, cognitive factors and social support factors. Subjects were categorized in two study groups i.e. timely treatment seeking group (<120 min from onset of symptoms) and delayed treatment seeking group (>120 min from onset of symptoms).

Results: The minimum and maximum time took by subjects to seek treatment was 10 and 5450 min, respectively. The mean pain score of subjects who sought delayed treatment (2.2619) is less than those who sought timely treatment (3.3725). The mean knowledge score (12.2754), mean symptom perception (3.6667), mean perceived seriousness (4.7647) is more in subjects who sought timely treatment than those who sought delayed treatment (5.7381), (1.3095), (1.8333) respectively. The mean family support score (57.4492), mean non-family support score (24.902), mean social support score (48.3002) is more in timely treatment group than in delayed treatment seeking group (42.6829), (4.7619), (29.2138) respectively.

Conclusion: Decreased pain, knowledge about AMI, symptom perception, perceived seriousness respectively and inadequate family & non-family support i.e. social support were the factors related to treatment seeking delay among adults diagnosed with AMI.

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1. Introduction

According to WHO 2015, cardiovascular diseases (CVD) causes higher number of deaths worldwide. Statistics had shown that 17.5 million people died from CVD in 2012, representing 31% of all deaths worldwide, from that 7.4 million died due to coronary artery disease. (Retrieved from www.who.int/mediacentre/factsheets/fs317/en/).

The correct treatment for acute coronary syndrome (ACS) should start as soon as possible after onset of the symptoms to decrease the associated morbidity and mortality. Every 30 min of delay leads to increase at 7.5% of relative risk for 1-year mortality. Median times range from 1.5 to 6.0 h from onset of symptoms to arrival at ER. Major

obstacle getting timely treatment is related to the patient's inability to take decision and reluctance to seek treatment.¹ (Retrieved from http://repository.usfca.edu/cgi/viewcontent.cgi?article=1074&context=nursing_fac).

A study done by Farshidi et al², to find the factors causing pre hospital delay among acute myocardial infarction (AMI) patients. They included 227 study samples and found that 35.7% of patients arrived within one hour of symptom onset and 7.9% arrived after 24 h and remaining arrived between one and twenty four hours (doi:10.5812/ircmj.2367).

Goel et al⁴ conducted a study on 609 patients with AMI out of which 316 (51.6%) sought late medical attention (>6 h) and 88 (14.5%) sought medical help after 12 h (doi:10.1016/S0019-4832[12]60090-x).

Hwang et al⁵ did a study on cognitive factors influencing delay in decisions to seek treatment among patients with AMI. The

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sample included 94 male and 71 female patients who were hospitalized for AMI. The median pre-hospital delay was 12 h. The study found that low education level is one of the factors for delayed decisions. (Retrieved from <http://203.199.194.78:2165/ehost/detail/detail?vid=21&sid=925731d0-0d89-43c5-9443-3fe4d46bee0a%40sessionmgr4003&hid=4204&bdata=JnNpdG-U9ZWVhc3QtbGI2ZQ%3d#AN=104304732&db=ccm>).

A study conducted by Momeni et al⁸ in Iran to find the factors influencing pre-hospital delay among patients with AMI. They conducted a study on 162 patients with STEMI. Their findings showed that admission in weekend, false interpretation of symptoms and not so serious about the condition were the factors influenced pre-hospital delay. (doi:10.3760/cma.j.issn.0366-6999.2012.19.008).

Khan et al⁷ conducted a prospective study from March 2014–February 2016 on 1386 STEMI patients. In that they found 1148 took more than 2 h to reach emergency department and 805 took > 4 h to reach emergency department. They also concluded that major factor for pre-hospital delay was due to misinterpretation of symptoms (45%) and next to that was transportation related problems (27%). (Retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/28598044#>).

George et al³ did a cross sectional study among 96 patients with STEMI. They found that median pre-hospital delay was 4.8 h. The factors contributed to delay were rural residence, poor financial status, symptom misinterpretation and onset at home, using public transportation, less sessions about symptoms. (Retrieved from <http://www.onlinejets.org/text.asp?2017/10/2/64/201580>).

Thus pre-hospital delay remains problematic and mostly associated with the risk of disability and death and lack of research to find out the factors contributing in treatment seeking delay in Indian scenario, it is the focus of this research to explore the factors.

2. Objectives of the study

The objectives were to:

- Assess the extent of delay for seeking treatment.
- Explore the factors contributing to treatment seeking delay.
- Compare factors contributing to treatment seeking delay among patients who had timely treatment and those who had delayed treatment.

3. Methodology

3.1. Research design

This study used retrospective design.

3.2. Variables

Focused variables were demographic, clinical, cognitive and social support factors.

3.3. Setting of the study

The study conducted on hospitalized adults with a confirmed diagnosis of AMI through emergency department at KMCH Coimbatore.

3.4. Population of the study

The populations included in this study were hospitalized adults with a confirmed diagnosis of AMI at KMCH.

3.5. Sample size

The sample size was 93 from which 51 sought treatment before 120 min and 42 sought treatment after 120 min from the onset of symptoms with a confirmed diagnosis of AMI.

3.6. Sampling technique

Non-probability purposive sampling was adapted to select the samples for the study.

3.7. Criteria for sample selection

Inclusion criteria

1. Patient who had a medical diagnosis of AMI that was confirmed by classic electrocardiogram changes (ECG) and/or abnormal cardiac bio-markers such as elevated cardiac enzymes troponin-T and CK-MB;
2. Patient who were hemodynamically stable condition confirmed by stable vital signs and being free of chest pain and/or discomfort at the time of the interview;
3. Patients who were above 18 years of age, both male and female;
4. Patient who were alert and oriented to person, place, time and situation with no history of cognitive impairment.

Exclusion criteria

1. Patients who were critically ill.
2. If AMI was a subsequent medical diagnosis and not the initial reason for seeking treatment.
3. Patients with previous history of AMI.

3.8. Development and description of tool

It consist of four parts:

PART I : Deals with demographic data.

PART II : ACS Clinical Data Extraction Form.

PART III : Cognitive factors assessment questionnaire.

PART IV : Duke Social support scale.

PART I: Deals with demographic data

Demographic factors such as age, gender, marital status, education, type of family, occupation, monthly income were included.

PART II: ACS clinical data extraction form

Clinical factors such as history of AMI, presenting symptoms (typical and atypical- not accompanied by chest pain) of AMI, self-reported pain level on arrival, history of co-morbid illness were included.

PART III: Cognitive factors assessment questionnaire

It consists of three parts.

1. Knowledge regarding AMI,
2. Symptom perception and
3. Perceived level of seriousness, measured by researcher prepared questionnaire.

A) Knowledge regarding AMI

This contains 8 questions with score of maximum 20 marks. Categorization is done as:

Score '0-5' – poor knowledge.

Score '6-10' – average knowledge.

Score '11-15' – good knowledge.

Score '16-20' – very good knowledge.

B) Symptom perception.

This contains 5 point scale to explore how similarly the patients perceived symptoms.

- 1 – Not at all similar
- 2 – Mildly similar
- 3 – Moderately similar
- 4 – Very similar
- 5 – Extremely similar

C) Perceived Level of Seriousness. This contains 5 point scale to explore the how seriously patient perceived their symptoms.

- 1 – Not at all serious
- 2 – Mildly serious
- 3 – Moderately serious
- 4 – Very serious
- 5 – Extremely serious

PART IV: Duke Social Support Scale

DUKE SOCIAL SUPPORT AND STRESS SCALE was prepared by Department of Community and Family Medicine, Duke University Medical Center, Durham, NC, USA. Duke Social Support Scale is a part of it and works to capture an individual's perceptions of how supportive or stressful his or her relationships with others. This was used to explore the level of social support received by patient at this movement of his life. Both family and non-familial support was explored. Using a 4 point scale (“none”, “some”, “a lot”, “there is no such person”) and a yes or no question. The respondent rates his or her family members, non-family members and special supportive person as people who give personal support (12 items). Raw scores allotted as ‘none’- ‘0’, ‘some’- ‘1’, ‘a lot’- ‘2’, ‘there is no such person’- ‘0’, ‘yes’- ‘2’, ‘no’- ‘0’. Total support was derived from the addition of family, non-family and special support scores and dividing by 22. The scores are obtained between 0 and 100. For the

purpose of analysis the family, non-family and social support was divide into two categories. ‘0-50’- inadequate support, ‘51–100’-adequate support. The Duke's stress scale was not used for this study.

4. Validity

The validity of the tool was established by submitting the questionnaires to the experts in the field of medical surgical nursing as well as medical experts. Based on their suggestions and recommendation, the main study carried out.

5. Reliability

Cronbach's Alpha method is used to establish the reliability of the tool. The reliability coefficients of the cognitive factor assessment questionnaire- $\alpha=0.785$, symptom perception scale- $\alpha=0.823$ and perceived seriousness scale- $\alpha=0.939$). DUKE SOCIAL SUPPORT SCALE is a standardized scale and has a reliability score of 0.76 for family support and 0.67 for non-family support, respectively.

6. Procedure for data collection

The prior permission was obtained from the ethical committee, concerned authorities and the participants who met the specified inclusion criteria. Data were collected using structured questionnaire by interviewing patients. Data collected by in-person

Table 1
Distribution of subjects according to demographic variables.

SL.No	Demographic Variables	Timely Group (<120 min) (N = 51)		Delayed Group (>120 min) (N = 42)	
		Frequency	Percentage (%)	Frequency	Percentage (%)
1	Age in Years				
	a. 31–40	6	12	3	7
	b. 41–50	10	20	12	29
	c. >50	35	69	27	64
2	Gender				
	a. Male	49	96	32	76
	b. Female	2	4	10	24
3	Marital Status				
	a. Married	49	96	40	95
	b. Unmarried	1	2	0	0
	c. Widow/Widower	1	2	2	5
4	Education				
	a. Illiterate	23	45	22	52
	b. Primary Education	10	20	11	26
	c. Higher Secondary education	6	12	4	10
	d. Degree	12	23	5	12
5	Occupation				
	a. Working Full Time	25	49	21	50
	b. Working Part Time	7	14	5	12
	c. Retired or unemployed	15	29	14	33
	d. Disabled, not able to work	4	8	2	5
6	Income				
	a. Less than Rs.10,000	13	25	10	24
	b. Rs.11,000–Rs.20,000	13	25	17	40
	c. Rs.21,000–Rs.30,000	16	31	7	17
	d. Above Rs.30,000	9	19	8	19
7	Type of Family				
	a. Nuclear	36	71	27	64
	b. Joint	15	29	15	36

Table 2
Distribution of subjects according to Clinical Data.

SL. NO.	Clinical data	Timely Group (<120 min) (N=51)		Delayed Group (>120 min) (N=42)	
		Frequency	Percentage (%)	Frequency	Percentage (%)
1	Co-morbid Illness				
	a. HTN	13	25	7	17
	b. DM	10	20	5	12
	c. HTN & DM	10	20	6	14
	d. Nil	18	35	24	57
2	Symptoms				
	a. 1–2 Typical symptoms	31	61	26	62
	b. All the Typical Symptoms (3 and above)	19	37	16	38
	c. Completely Atypical Symptoms (not accompanied by chest pain)	1	2	0	0

Table 3
Distribution of subjects who sought treatment from onset of symptoms to arrival at ER in less than 120 min.

SL.No.	Clinical data	Timely Group (N=51)	
		Frequency	Percentage (%)
1	Time duration in minutes		
	a. 0–60	35	69
	b. 61–120	16	31

interviews to reduce the possibility of missing data. In order to limit any personal bias during data collection, the investigator used the open and closed-ended questions from the questionnaires to guide the interview. Patients were identified from emergency department as soon as they got admitted in the hospital. Researcher met the patient and explained about the study in detail to make the patient comfortable. After obtaining oral consent, interview procedure was carried out. The clinical data of arrival time to hospital was collected from patients' case sheet to ensure the time delay. Approximately 30 min were taken by each participant for completely answering to all the tools used in the study. The questionnaires allowed for the patient to give a descriptive, narrative account of the events from the time of the onset of symptoms until they reached the emergency department.

7. Data analysis and interpretation

This chapter deals with the description of the study subjects, analysis and description of data collected to explore the factors related to treatment seeking delay among adults diagnosed with AMI.

Section I: Description of Demographic Variables.

Section II: Description of Clinical Data.

Section III: Description of Clinical Factor influencing treatment seeking time.

Section IV: Distribution of Cognitive Factors influencing treatment seeking time.

Section V: Distribution of Social Support Scores.

Section VI: Comparison of Clinical and other Factors determining treatment seeking time.

Section –I: Description of demographic variables

Table 1 depicts the distribution of subjects within two groups according to the demographical variables. In both the groups majority were above 50 years of age, male, married. More number of subjects who sought delayed treatment were illiterate. No subjects were in age group of 20–30 years, in divorced group and in extended family group, respectively.

Section –II: Description of clinical data

Table 2 depicts the distribution of subjects within two groups according to the clinical data. In both timely and delayed treatment

Table 4
Distribution of subjects who sought delayed treatment after 120 min from the onset of symptoms.

SL.No.	Clinical data	Delayed Group (N=42)	
		Frequency	Percentage (%)
1	Time duration in minutes (extent of delay)		
	a. 2–6 h	21	50
	b. 6–12 h	7	17
	c. 12–18 h	4	9
	d. 18–24 h	5	12
	e. 24–48 h	3	7
	f. Above 48 h	2	5

seeking groups, majority of subjects had no co-morbid illness and had experienced 1 to 2 typical symptoms. Out of 51 subjects who sought timely treatment, one subject (2%) had experienced completely atypical symptoms like sweating and fainting.

Table 3 shows the distribution of subjects who sought timely treatment.

Table 4 shows the extent of time delay of the subjects who sought treatment after 120 min from the onset of the symptoms. There were two subjects (5%) who sought treatment after two days.

Section –III: Description of clinical factor influencing treatment seeking time

Table 5 depicts two things, pain score and presence of chest pain. Majority of subjects who sought timely treatment as well as delayed treatment had experienced moderate pain level. Eight (16%) of subjects and 10 (24%) of subjects who sought timely and delayed treatment, respectively experienced absolutely no pain. Subjects with reduced pain were higher in delayed group. As the pain score increased, the numbers of subjects were also increased in timely treatment seeking group. Majority of subjects in both groups had experienced chest pain with other symptoms.

Table 5
Distribution of subjects according to Pain Score and Chest Pain.

SL. No.	Clinical Factors	Timely Group (<120 min) (N=51)		Delayed Group (>120 min) (N=42)	
		Frequency	Percentage (%)	Frequency	Percentage (%)
1	Pain Score				
	a. 0	8	16	10	24
	b. 1–2 (mild)	8	16	13	31
	c. 3–6 (moderate)	29	56	19	45
	d. 7–10 (severe)	6	12	0	0
2	Chest Pain				
	a. Pain other than chest region	8	16	8	19
	b. Chest Pain with other Symptoms	42	82	31	74
	c. Only Chest Pain	1	2	3	7

Table 6
Distribution of subjects according to Knowledge Score, Symptom Perception and Perceived Seriousness.

SL. No.	Cognitive Factors	Timely Group (<120 min) (N=51)		Delayed Group (>120 min) (N=42)	
		Frequency	Percentage (%)	Frequency	Percentage (%)
1	Knowledge about AMI				
	a. Poor [0-5]	5	10	23	55
	b. Average [6-10]	15	29	9	21
	c. Good [11-15]	14	28	5	12
	d. Very Good [16-20]	17	33	5	12
2	Symptom Perception				
	a. 1 (Not at all Similar)	6	12	33	79
	b. 2 (Mildly Similar)	2	4	6	14
	c. 3 (Moderately Similar)	14	27	2	5
	d. 4 (Very Similar)	14	27	0	0
	e. 5 (Extremely Similar)	15	30	1	2
3	Perceived Level of Seriousness				
	a. 1 (Not at all serious)	1	2	21	50
	b. 2 (Mildly serious)	0	0	12	29
	c. 3 (Moderately serious)	0	0	6	14
	d. 4 (Very serious)	8	16	2	5
	e. 5 (Extremely serious)	42	82	1	2

Section –IV: Distribution of cognitive factors influencing treatment seeking time

Table 6 depicts distribution of subjects according to cognitive factors that has three components namely knowledge score, symptom perception and perceived level of seriousness. This shows that most of the subjects who sought delayed treatment (55%) had poor knowledge and most of the subjects who sought timely treatment (33%) had very good knowledge about AMI.

Table 7
Distribution of subjects according to Duke Social Support and Stress Scale (DUSOCS) Family support score, DUSOCS Non-family support score and DUSOCS Social Support score calculated by using DUKE SOCIAL SUPPORT SCALE.

SL. No.	DUSOCS Social Support	Timely Group (<120 min) (N=51)		Delayed Group (>120 min) (N=42)	
		Frequency	Percentage (%)	Frequency	Percentage (%)
1	DUSOCS Family Support score				
	a. 0-50 (Inadequate)	21	41	28	67
	b. 51-100 (Adequate)	30	59	14	33
2	DUSOCS Non-Family Support Score				
	a. 0 (No support) (Inadequate)	19	37	32	76
	b. 1-50 (Adequate)	22	43	10	24
3	DUSOCS Social Support Score				
	a. 0-50 (Inadequate)	28	55	39	93
	b. 51-100 (Adequate)	23	45	3	7

Symptom perception describes that subjects who did not perceived their symptoms were highest (79%) in delayed treatment seeking group. Highest number of subjects (82%) in timely treatment seeking group had perceived extremely serious about their condition (Figs. 1 and 2).

Section –V: Distribution of social support scores

Table 7 depicts distribution of subjects according to family support scores, non-family support scores and social support scores.

Family support scores shows that out of 51 subjects who sought timely treatment, 41% got inadequate and 59% got adequate family support respectively. Out of 42 subjects who sought delayed treatment, 67% got inadequate and 33% got adequate family support. Non-family support score shows that most subjects (76%) sought delayed treatment did not receive non-family support at all. Also 19 out of 51 subjects who sought timely treatment did not received any non-family support. Social support scores shows that

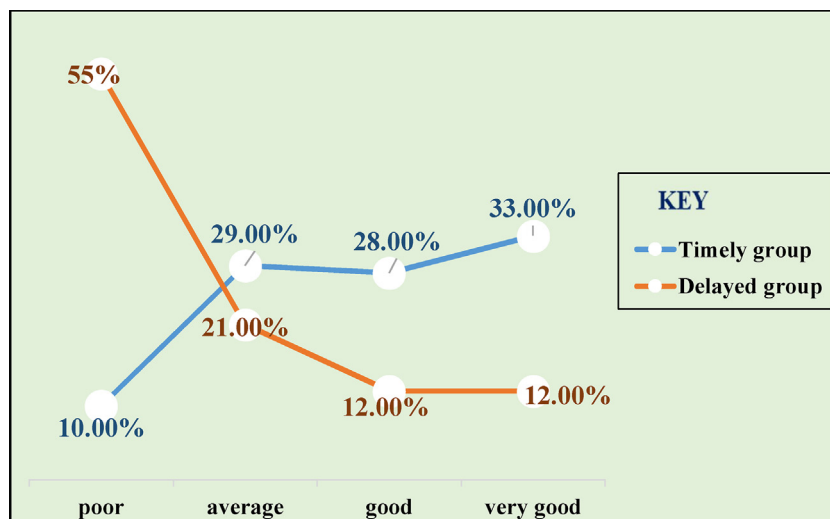


Fig. 1. Distribution of subjects according to their Knowledge Scores (Table 6).

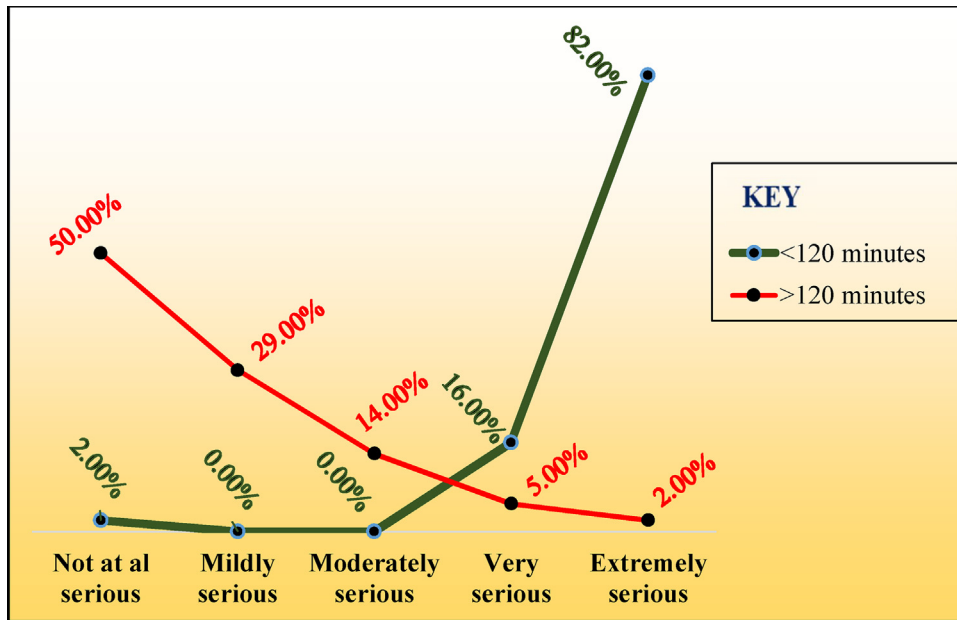


Fig. 2. Distribution of subjects according to their Perceived Seriousness (Table 6).

most of the subjects (93%) who delayed in seeking treatment had received inadequate social support (Figs. 3–5).

Section –VI: Compare the clinical and other factors determining treatment seeking time

Table 8 shows that the mean pain score of subjects who sought delayed treatment is less than those who sought timely treatment, thus reduced pain level in the subjects with AMI is a factor for delay in seeking treatment. The significant value (by using Mann-Whitney U test) 0.037 for pain score, is significant at $p < 0.05$. Thus there is a significant difference between pain scores of subjects who sought timely treatment (less than 120 min) and delayed treatment (more than 120 min) (Fig. 6).

Table 9 shows the comparison of knowledge scores of subjects between subjects who sought delayed and timely treatment respectively. The mean knowledge score is more in subjects who sought timely treatment, thus low knowledge about AMI in the

patients with AMI is one of the factor for delay in seeking treatment. The significant value (by using Mann-Whitney U test) 0.000 for knowledge scores, is significant at $p < 0.05$. Thus there is significant difference between knowledge scores of subjects who sought timely treatment (less than 120 min) and delayed treatment (more than 120 min) (Fig. 7).

Table 10 shows the comparison of symptom perception of subjects between delayed and timely treatment seeking groups respectively. The mean symptom perception was more in timely treatment seeking group (<120 min group), thus reduced symptom perception in the patients with AMI is a factor for delay in seeking treatment. The significant value (by using Mann-Whitney U test) 0.000 for symptom perception, is significant at $p < 0.05$. Thus there is significant difference between symptom perceptions of subjects who sought timely treatment (less than 120 min) and delayed treatment (more than 120 min) (Fig. 8).

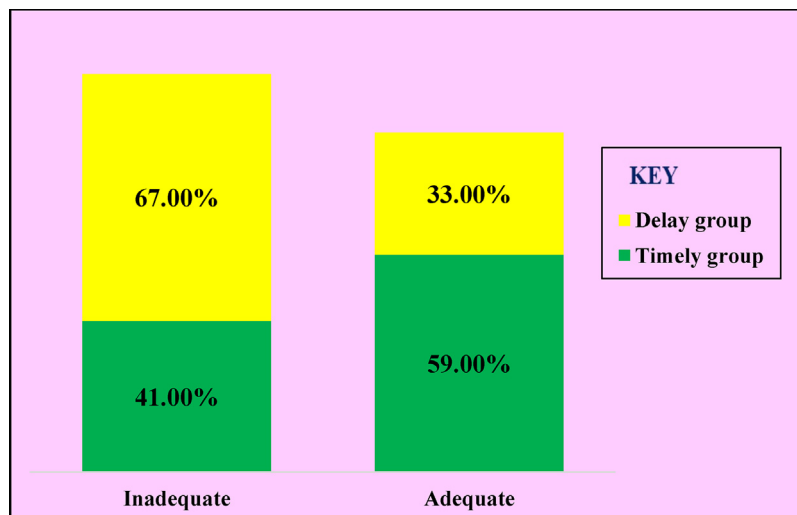


Fig. 3. Distribution of subjects according to DUSOCS Family Support score (Table 7).

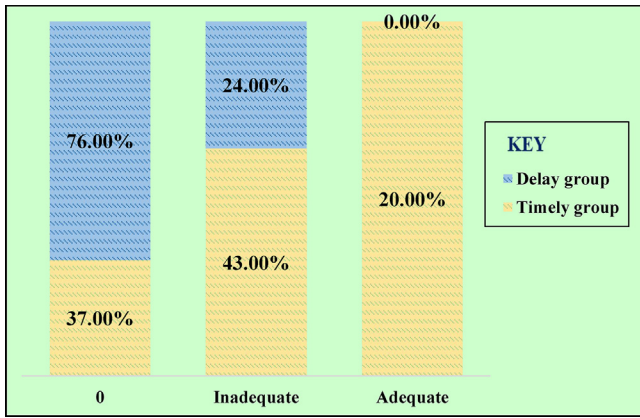


Fig. 4. Distribution of subjects according to DUSOCS Non-Family Support score (Table 7).

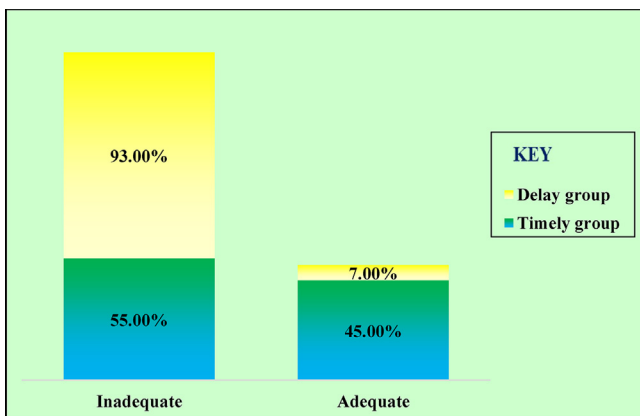


Fig. 5. Distribution of subjects according to DUSOCS Social Support score (Table 7).

Table 11 shows the comparison of perceived seriousness of subjects between delayed and timely treatment seeking group respectively. The mean perceived seriousness was more in timely treatment seeking group, thus less perceived seriousness in the patients with AMI is a factor for delay in seeking treatment. The significant value (by using Mann-Whitney *U* test) 0.000 for perceived seriousness, is significant at $p < 0.05$. Thus there is significant difference between perceived seriousness of subjects between delayed and timely treatment seeking group, respectively (Fig. 9).

Table 8
Comparison of pain scores of subjects between delayed and timely treatment seeking group.

SL. No.	Pain Score	N	Mean	S.D	Sig. Value
1	>120 min (Delay Group)	42	2.2619	1.72584	0.037*
2	<120 min (Timely Group)	51	3.3725	2.46545	

*Significance $p < 0.05$.

Table 9
Comparison of knowledge scores of between subjects who sought delayed and timely treatment respectively.

SL. No.	Knowledge Scores	N	Mean	S.D	Sig. Value
1	>120 min (Delay Group)	42	5.7381	5.78079	0.000*
2	<120 min (Timely Group)	51	12.2745	5.79337	

*Significance $p < 0.05$.

Table 10
Comparison of symptom perception of subjects.

SL. No.	Symptom Perception	N	Mean	S.D	Sig. Value
1	>120 min (Delay Group)	42	1.3095	0.78050	0.000*
2	<120 min (Timely Group)	51	3.6667	1.30639	

*Significance $p < 0.05$.

Table 11
Comparison of perceived seriousness of subjects between delayed and timely treatment seeking groups.

SL. No.	Perceived Seriousness	N	Mean	S.D	Sig. Value
1	>120 min (Delay Group)	42	1.8333	1.01011	0.000*
2	<120 min (Timely Group)	51	4.7647	0.65079	

*Significance $p < 0.05$.

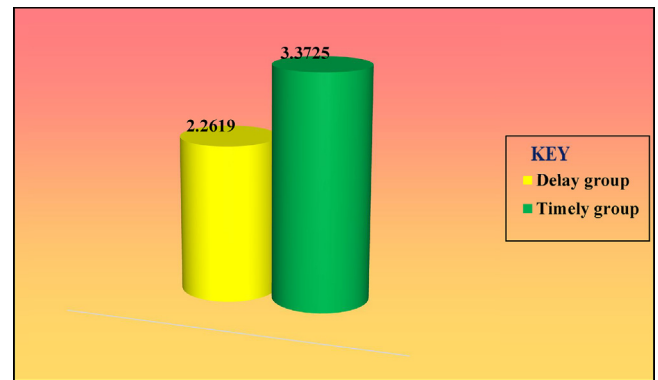


Fig. 6. Comparison of mean pain scores of subjects who sought delayed treatment and timely treatment (Table 8).

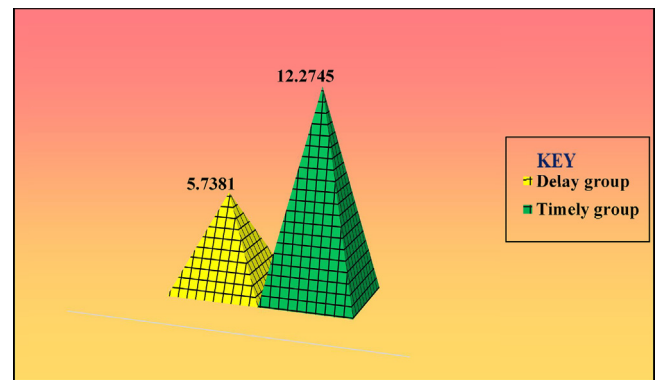


Fig. 7. Comparison of mean knowledge scores between subjects who sought delayed treatment and timely treatment (Table 9).

Table 12 shows the comparison of DUSOCS family support score of subjects between delayed and timely treatment seeking group, respectively. The mean family support score is more in timely treatment group, thus low family support in the patients with AMI is a factor for delay in seeking treatment. The significant value (by using Mann-Whitney *U* test) 0.000 for family support, is significant at $p < 0.05$. Thus there is significant difference between DUSOCS family support score of subjects between delayed and timely treatment seeking group, respectively (Fig. 10).

Table 13 shows the comparison of DUSOCS non-family support score of subjects between delayed and timely treatment seeking group respectively. The mean non-family support score is more in timely treatment group, thus low non-family support in the

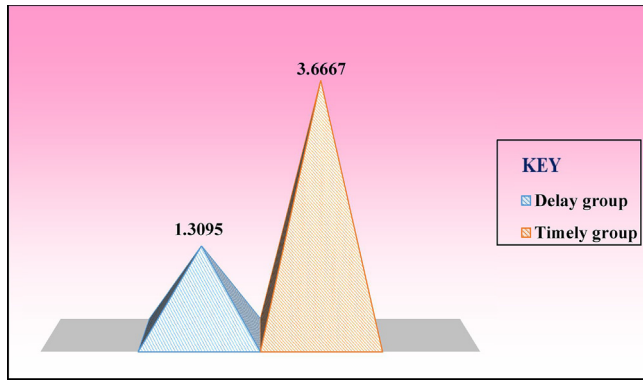


Fig. 8. Comparison of mean symptom perception between delayed treatment and timely treatment group (Table 10).

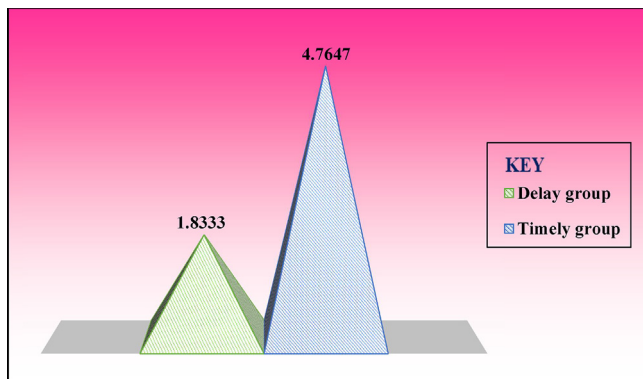


Fig. 9. Comparison of mean perceived seriousness of subjects belonging to delayed and timely treatment group (Table 11).

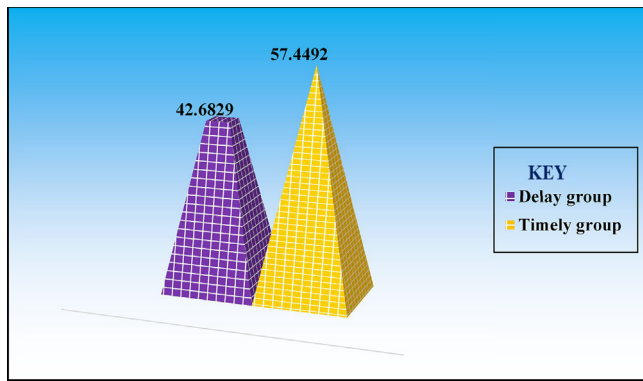


Fig. 10. Comparison of mean DUSOCS family support score between subjects who sought delayed and timely treatment (Table 12).

patients with AMI is a factor for delay in seeking treatment. The significant value (by using Mann-Whitney *U* test) 0.000 for non-family support, is significant at $p < 0.05$. Thus there is significant difference between DUSOCS non-family support score of subjects between delayed and timely treatment seeking group, respectively (Fig. 11).

Table 14 shows the comparison of DUSOCS social support score of subjects between delayed and timely treatment seeking group, respectively. The mean social support score is more in timely treatment group, thus low social support in the patients with AMI is a factor for delay in seeking treatment. The significant value (by using Mann-Whitney *U* test) 0.000 for total social support, is

Table 12

Comparison of DUSOCS family support score of subjects between delayed and timely treatment seeking group respectively.

SL.No.	DUSOCS Family Support Score	N	Mean	S.D	Sig. Value
1	>120 min (Delay Group)	42	42.6829	21.07625	0.000*
2	<120 min (Timely Group)	51	57.4492	16.35976	

*Significance $p < 0.05$.

Table 13

Comparison of DUSOCS non-family support score of subjects between delayed and timely treatment seeking group respectively.

SL.No.	DUSOCS Non-Family Support Scores	N	Mean	S.D	Sig. Value
1	>120 min (Delay Group)	42	4.7619	11.09561	0.000*
2	<120 min (Timely Group)	51	24.9020	23.94766	

*Significance $p < 0.05$.

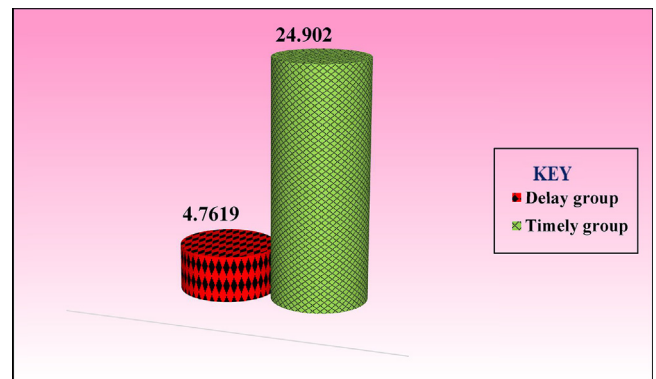


Fig. 11. Comparison of mean DUSOCS non-family support score between subjects who sought delayed and timely treatment (Table 13).

Table 14

Comparison of DUSOCS social support score of subjects between delayed and timely treatment seeking group respectively.

SL.No.	DUSOCS Social Support Scores	N	Mean	S.D	Sig. Value
1	>120 min (Delay Group)	42	29.2138	13.77236	0.000*
2	<120 min (Timely Group)	51	48.3002	15.64416	

*Significance $p < 0.05$.

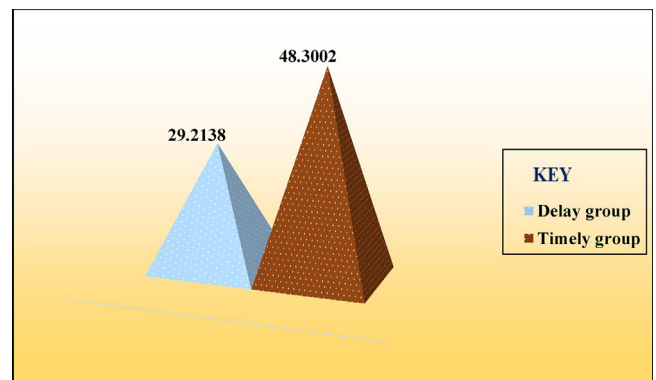


Fig. 12. Comparison of mean DUSOCS social support score between delayed and timely treatment group (Table 14).

significant at $p < 0.05$. Thus there is significant difference between DUSOCS social support score of subjects between delayed and timely treatment seeking group, respectively (Fig. 12).

Major findings

- Out of 93 study subjects 81 were male and 12 were female. 40% of male subjects and 83.33% of female subjects sought delayed treatment. This shows that there is increased risk of delayed treatment seeking behavior in females (Table 1).
- Education and occupation doesn't seem to have influence on treatment seeking behavior as almost equal numbers of subjects were found in both the groups (Table 1).
- Out of 93 study subjects 51 (55%) not at all received non-family support. This proves how much our society has become self centered (Table 7, Fig. 4).
- The mean pain score of subjects who sought delayed treatment (2.2619) is less than those who sought timely treatment (3.3725). The computed significant value (by using Mann-Whitney *U* test) 0.037, is significant at $p < 0.05$. Thus there is a significant difference between pain scores of subjects who sought timely treatment (less than 120 min) and delayed treatment (more than 120 min) (Table 8, Fig. 6).
- The mean knowledge score is more in subjects who sought timely treatment (12.2745) than those who sought delayed treatment (5.7381). The computed significant value (by using Mann-Whitney *U* test) 0.000, is significant at $p < 0.05$. Thus there is significant difference between knowledge scores of subjects who sought timely treatment (less than 120 min) and delayed treatment (more than 120 min) (Table 9, Fig. 7).
- The mean symptom perception was more in timely treatment seeking group (3.6667) than in delayed treatment seeking group (1.3095). The computed significant value (by using Mann-Whitney *U* test) 0.000, is significant at $p < 0.05$. Thus there is significant difference between symptom perceptions of subjects who sought timely treatment (less than 120 min) and delayed treatment (more than 120 min) (Table 10, Fig. 8).
- The mean perceived seriousness was more in timely treatment seeking group (4.7647) than in delayed treatment seeking group (1.8333). The computed significant value (by using Mann-Whitney *U* test) 0.000, is significant at $p < 0.05$. Thus there is significant difference between perceived seriousness of subjects who sought timely treatment (less than 120 min) and delayed treatment (more than 120 min) (Table 11, Fig. 9).
- The mean family support score is more in timely treatment group (57.4492) than in delayed treatment seeking group (42.6829). The computed significant value (by using Mann-Whitney *U* test) 0.000, is significant at $p < 0.05$. Thus there is significant difference between DUSOCS family support score of subjects who sought timely treatment (less than 120 min) and delayed treatment (more than 120 min) (Table 12, Fig. 10).
- The mean non-family support score is more in timely treatment group (24.902) than in delayed treatment seeking group (4.7619). The computed significant value (by using Mann-Whitney *U* test) 0.000, is significant at $p < 0.05$. Thus there is significant difference between DUSOCS non-family support

score of subjects who sought timely treatment (less than 120 min) and delayed treatment (more than 120 min) (Table 13, Fig. 11).

- The mean social support score is more in timely treatment group (48.3002) than in delayed treatment seeking group (29.2138). The computed significant value (by using Mann-Whitney *U* test) 0.000, is significant at $p < 0.05$. Thus there is significant difference between DUSOCS social support score of subjects who sought timely treatment (less than 120 min) and delayed treatment (more than 120 min) (Table 14, Fig. 12).

8. Conclusion

The following conclusions are drawn from the study

- This study concludes that the decreased pain level, absence of chest pain and presence of chest pain alone were the factors related to treatment seeking delay among patients with AMI.
- This study draws a conclusion that the less knowledge about AMI, reduced symptom perception and perceived seriousness (cognitive factors) respectively were also the factors related to treatment seeking delay among patients with AMI.
- This study showed that the inadequate family support, non-family support and social support were also the factors related to treatment seeking delay among patients with AMI.

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