Original Article

A STUDY TO EVALUATE THE EFFECT OF CARDIAC REHABILITATION PROGRAM ON HEALTH STATUS AND TREATMENT COMPLIANCE AMONGST POST MYOCARDIAL INFARCTION PATIENTS IN A CARDIAC CENTRE

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ABSTRACT

Efforts are constantly being made, mostly aimed at improving behavioral patterns and poor lifestyle habits. As for all cardiovascular diseases, it is recognized that the cardiac rehabilitation program is the principal method of lifestyle modification to minimize and avoid the recurrence of heart attacks. After the completion of the cardiac rehabilitation program, it revealed that its effect on health status was statistically effective in terms of BMI and blood pressure, and treatment compliance in terms of medication, diet, exercise and follow-up compliance. Substantial decline in hospitalization was observed after completion of cardiac rehabilitation program. Among two dependent variables, health status was found to be statistically non-significant in terms of blood pressure and BMI and treatment compliance in terms of medication, diet, exercise and follow-up, indicating that there is no association between them.

KEYWORDS: Cardiac rehabilitation program, Health status, Treatment compliance.

INTRODUCTION

Heart diseases have become the primal cause of mortality worldwide. With expansive changes in day to day lifestyle, cardiac problems are on the rise. Cardiovascular diseases, particularly, coronary heart disease (CHD) has acquired near to epidemic proportions globally. Detection, diagnosis and systematic treatment is essential to curb the growing death rates by CHD. CHD displays deviation from normal functioning of heart. People with CHD have a reduced supply of oxygen to all the vital organs of the body which eventually causes organ failure. Conditions like atherosclerosis enhance the effect of these cardiac dysfunctions which in due course may cause severe problems like angina and acute myocardial infarction. Myocardial infarction has now become a widespread health problem, which is consuming lives at a global scale.[1]

Myocardial infarction (MI) has turned out to be a life threatening disease, influencing the physiological and mental well-being of an individual. The term together means tissue death (infarction) caused in the heart muscles (myocardium). MI is a type acute coronary syndrome, which displays an instantaneous or short term change in rate of blood flow to the heart.[2] This disease causes an overtime myocardial cell necrosis due to considerable and sustained state of ischemia.

The high subsequent morbidity and mortality, as well as the significant physio-psychological adverse impact of the disease have led to a call for the universal provision of rehabilitative and preventive strategies for all patients with CHD. (WHO, 1993) Cardiac secondary prevention refers to the prevention of major morbid and fatal events, such as the recurrence of angina pectoris, MI, or sudden death among patients with clinically apparent CHD, through risk factor identification and modification. Cardiac rehabilitation, as defined by the WHO (1993), is "the sum of activities required to influence favorably the underlying cause of cardiac disease, as well as to ensure the patient the best possible physical, mental and social conditions so that they may, by their own efforts, preserve or resume when lost, as normal a place as possible in the life of the community".

"Cardiac rehabilitation (and secondary prevention) services are comprehensive, long term programs involving medical evaluation, prescribed exercise, cardiac risk factor modification, education, and counseling. These programs are formulated to limit the

physiological and psychological effects of cardiac illness, reduce the risk for sudden death or re-infarction, control cardiac symptoms, stabilize or reverse the atherosclerotic process and enhance the psychosocial and vocational status of selected patients."[3]

An exercise forms a core component of cardiac rehabilitation program. However, recent practice guidelines also recommend for the incorporation and optimization of various other components which must be a part of the comprehensive rehabilitation programs. Together, these components would help individuals to

The diagrammatic representation is

| Purposive Sampling | X | O₁ | O₂ |
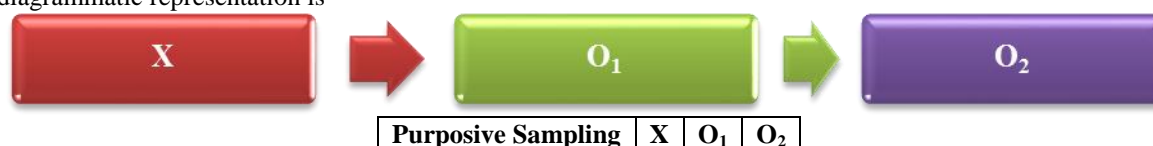
X stands for cardiac rehabilitation program which includes health record of patient, the maintenance of medication chart for 4 weeks taught by the researcher, diet chart as advised and exercises as demonstrated and advised.

O_1 stands for first follow up after one week of discharge which includes measuring health status, treatment compliance and number of hospitalizations.

O_2 stands for second follow up after four weeks of discharge which includes measuring health status, treatment compliance and number of hospitalizations.

Statement of the Problem
A study to evaluate the effect of cardiac rehabilitation program on health status and treatment compliance amongst post myocardial infarction patients in a cardiac centre.

Aim of the Study
To evaluate the effect of cardiac rehabilitation program on health status and treatment compliance amongst post myocardial infarction patients in a cardiac centre.

Research Question
What is the effect of cardiac rehabilitation program on health status and treatment compliance among post myocardial infarction patients?

Objectives of the Study
1. To assess the effect of cardiac rehabilitation program on health status in terms of BMI and blood pressure amongst post MI patients.
2. To assess the effect of cardiac rehabilitation program on treatment compliance in terms of medication, diet, exercise and follow up amongst post MI patients.
3. To explore the effect of cardiac rehabilitation program on cardiac related hospitalization.

foster healthy behaviors and eventual compliance to these behaviors would promote a healthy and active lifestyle.[3]

MATERIALS AND METHODS

Research Design
The selection of research design depends upon the purpose of the study, research approach and variables to be studied. The design selected for this study is pre experimental one group post test only design.

Operational Definitions
* **Cardiac Rehabilitation Program**: Cardiac rehabilitation is a designed medically supervised program to improve cardiovascular health, in this study cardiac rehabilitation program refers to the maintenance of medication card, following prescribed diet chart and performing exercises are instructed.
* **Health Status**: In this study the measures of health status include BMI and blood pressure.

$$BMI: \frac{Weight\ in\ Kg}{Height\ in\ m^2}$$

* **Body Mass Index (BMI)**
* **Blood Pressure (BP):** The force of circulating blood on the walls of the arteries. It is being taken by two measurements, systolic is measured when the heart beats and pressure is at the highest and diastolic is measured between heart beats when it is at its lowest.
* **Treatment Compliance**: In this study the measures of treatment compliance includes medication, diet, exercise and follow up compliance of selected sample.
* **Post Myocardial Infarction**: Myocardial Infarction is the sudden onset of chest pain due to lack of blood supply to myocardium. In this study those patients who were diagnosed with first episode of MI (Both STEMI and NSTEMI) are considered.
* **Patient**: In this study patients are the population who are admitted to the hospital with complaints of chest pain/ discomfort and diagnosed as the first episode of myocardial infarction.

Variables of the Study
Dependent variable- BMI, Blood pressure, number of missed doses of medication, follow ups, hospitalization after discharge and treatment compliance includes diet and exercises as per instructions.
Independent variable- Age, Gender, Marital Status, Employment status, Education level, Bad habit and Treatment advised.

Assumptions
The study is based on the assumption that
1. Patients who undergo effective cardiac rehabilitation program will have better health status and treatment compliance.
2. Learning is an integral part of human nature.

Conceptual Framework
The conceptual framework used for the study was based on Donabedian model.

Setting of the Study
The study was conducted at National Heart Institute, New Delhi. This institute is a 104 bedded state of the art cardiac specialized hospital. It is well equipped with 6 ICUs and a cath lab unit offering cardiac procedures including percutaneous transluminal coronary angioplasty (PTCA), angiography. National Heart Institute conducts an average of 25-30 number of PTCA's in a month and the same patient are then followed up.

Sample and Sampling Technique
Population
The target population of this study was those patient who had been diagnosed with myocardial infarction and had undergone cardiac rehabilitation program and had come for their first and second follow up after one week and one month of their discharge from National Heart Institute, New Delhi.

Sampling Technique
The purposive sampling technique was used for the present study.

Inclusion Criteria
The patients who will be;
1. Diagnosed as myocardial infarction.
2. Patients willing to participate in the study at the time of discharge.
3. Patients available at the time of data collection.

Exclusion Criteria
The patients who will be;
1. Patients with multiple episodes of MI.
2. Patients outside state territory Delhi NCR.

Sampling Size
Sample size for the present study was 65 myocardial infarction patients from National Heart Institute, New Delhi.

Ethical consideration
1. Formal scientific advisory, research and ethical committee clearance certificate was obtained from All India Heart Foundation (AIHF) of East of Kailash, New Delhi.
2. Formal permission was obtained from Vice CEO of National Heart Institute to conduct research study on the post myocardial infarction patients of the hospital.
3. Myocardial Infarction patients were informed that participation in the study was voluntary and were guaranteed that data would be treated anonymously. The confidentiality of data was maintained.
4. Written informed consent was obtained from each patient for being part of the study.

Data Collection Tool And Technique
The objective of the study was to assess the effect of cardiac rehabilitation program on health status and treatment compliance amongst post myocardial infarction patients in a cardiac centre, New Delhi for which researcher has developed a cardiac rehabilitation program booklet.

The tool consists of four sections described as follows:
Tool 1
Section I: This section consists of questionnaires to assess the demographic variable which includes age, gender, marital status, employment status, education level, bad habit & treatment advised and baseline data includes BMI and BP of post myocardial infarction patients during discharge period.
Section II: This section consists of the record maintained that includes number of missed doses of medication, follow up and number of hospitalization after discharge.
Section III: This section consists of questionnaires during first follow up which consists of assessment of baseline data which includes BMI and BP; level of treatment compliance to diet and exercises which includes deep breathing, chest expansion, neck, walking , both upper and lower limb exercises as per cardiac rehabilitation program in post myocardial infarction patients.
Section IV: This section consists of same questionnaires during second follow up.

Tool 2
A cardiac rehabilitation program booklet which includes health record of patient, the maintenance of medication chart for 4 weeks taught by the researcher, diet chart as advised and exercises as demonstrated by the researcher which includes deep breathing, neck exercises, shoulder exercises, walking, chest expansion exercises, leg exercises and upper limb exercises at the time of discharge.

Validity Of The Tools
The validity of the tool was obtained by submitting the tools to 6 experts and it was valid. All the rectification was as suggested by the experts.

Reliability of the Tools
The reliability of the structured tool to evaluate the effect of cardiac rehabilitation program on health status and treatment compliance amongst post myocardial infarction patients was determined using Guttman split half coefficient and the reliability coefficient was 0.9.

Procedure for Final Data Collection
Formal permission was obtained from the concerned authorities to conduct the final study by using purposive sampling technique according to research design.

The finalized data from this study was collected between 20th December 2019 to 31st April 2020. During the discharge procedure the patients were handed over a self-assessment cardiac rehabilitation booklet along with usage guidelines by NHI. The first follow up of the patients was scheduled after 7 days as per the protocol. On the 1st follow up the patients were interviewed and evaluated with baseline data, treatment compliance, number of cardiac related hospitalization and self-assessment cardiac rehabilitation program booklet including medication assessment. Thereafter, patients were informed regarding their second follow up due after 30 days. All the parameters mentioned in the first follow up assessment were re-evaluated in the second follow up. Adequate measures were taken to maintain uniformity for all the activities conducted with the selected samples.

RESULTS AND DISCUSSIONS

Section I:- Distribution of demographic variables among post myocardial infarction patients
A purposive sampling of 65 post myocardial infarction patients was drawn from the selected settings, based on the selection criteria. The data obtained are summarized in frequency and percentages in figure- 1 to 7 and table- 1 to 11.
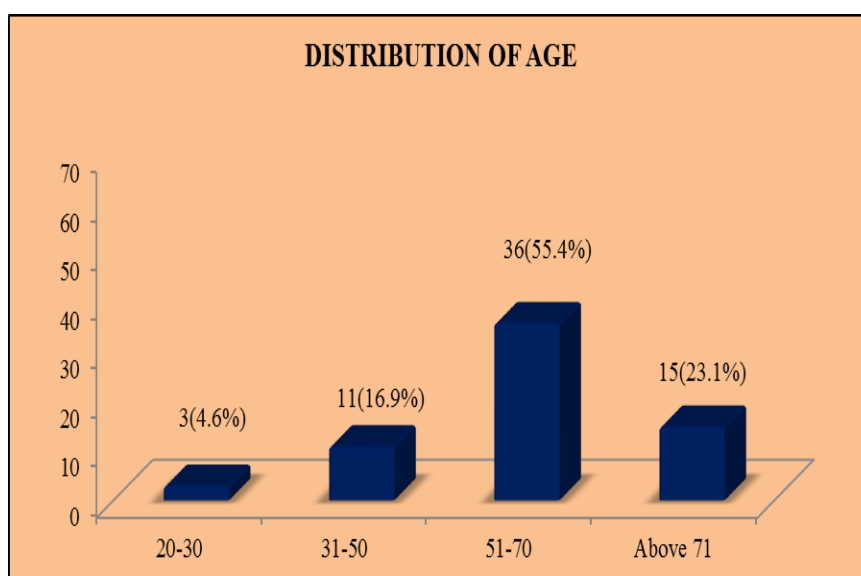

Figure 1: Bar diagram showing frequency and percentage distribution of post MI patients with regards to age (N=65).

Figure 1: Indicates that out of the total samples, maximum are in the age group of 51-70 years (55.4%), above 71years (23.1%), 31-50 years (16.9%) and remaining in 20-30years (4.6%) of age.
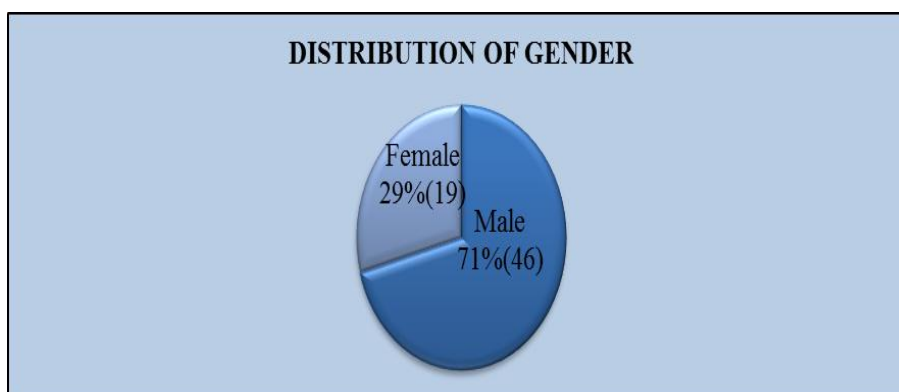

Figure 2: Pie chart showing frequency and percentage distribution of post MI patients with regards to gender (N=65).

Figure 2: Indicates that out of the total sample taken majority of the patients were male (71%) and only a small fraction of it were female (29%).
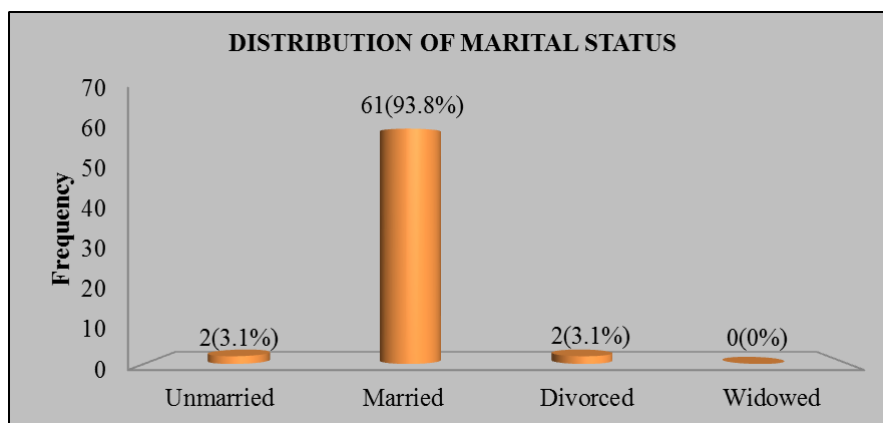
Figure 3: Column graph showing frequency and percentage distribution of post MI patients with regards to marital status (N=65).

Figure 3: Indicates that out of all total samples, majority of the samples were married (93.8%), both unmarried (3.1%) and divorced (3.1%) samples were same and none of the sample was widowed (0%).
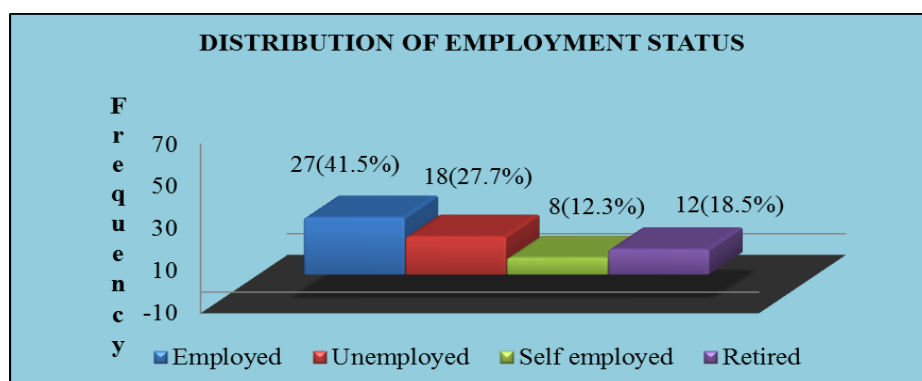

Figure 4: Column graph showing frequency and percentage distribution of post MI patients with regards to employment status (N=65).

Figure 4: Indicates that of the total samples, employed were 41.5%, unemployed were 27.7%, retired were 18.5% and remaining 12.3% were self employed.
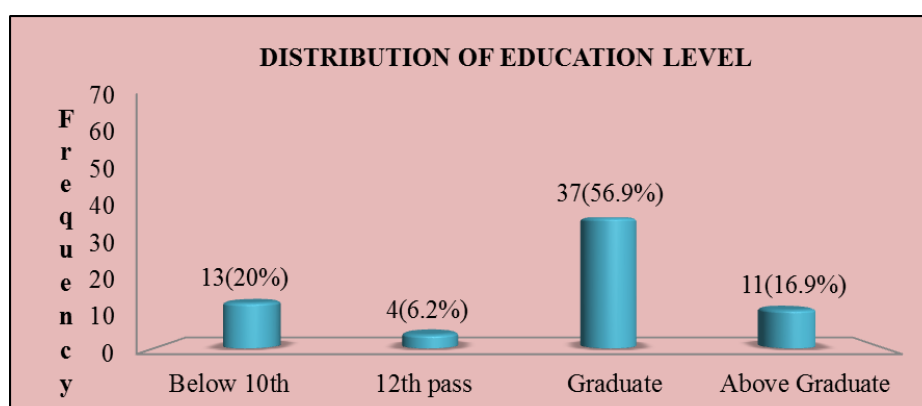

Figure 5: Column graph showing frequency and percentage distribution of post MI patients with regards to education level (N=65).

Figure 5: Indicates that among all samples, graduates were 56.9%, below 10th pass were 20%, above graduate were 16.9% and remaining 6.2% were 12th pass.
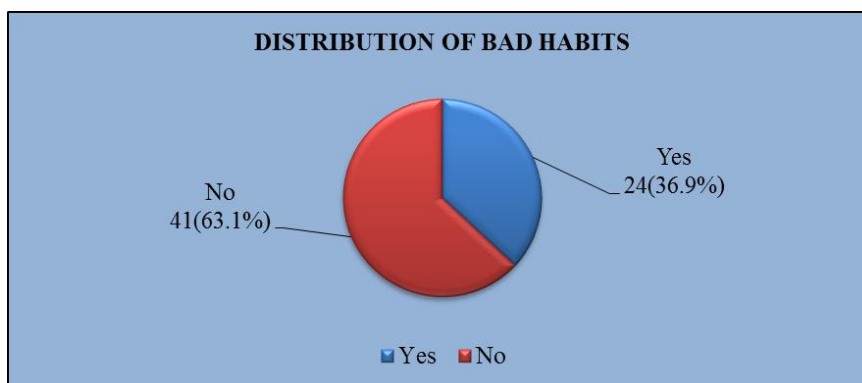
Figure 6: Pie chart showing frequency and percentage distribution of post MI patients with regards to bad habits (N=65).

Figure 6: Indicates majority of samples do not have bad habit (63.1%) and remaining 36.9% had bad habit.
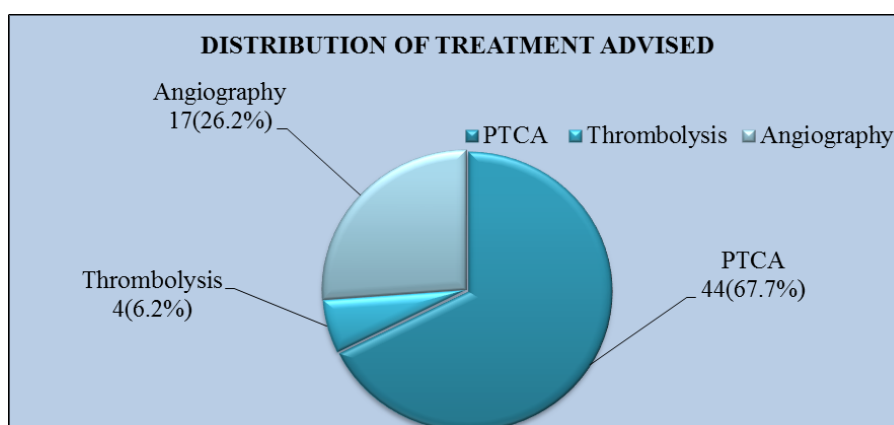

Figure 7: Pie chart using frequency and percentage distribution of post MI patients with regards to treatment advised (N=65).

Figure 7: Indicates amongst all samples treatment advised for majority of them was PTCA (67.7%), angiography (26.2%) and minimal treatment advised was thrombolysis (6.2%).

Section II:- Effectiveness of cardiac rehabilitation program on health status of post myocardial infarction patients
This section deals with the analysis and interpretation of data related to effect of cardiac rehabilitation program on health status in terms of BMI and blood pressure in 1st and 2nd follow up of post myocardial infarction patients.

Table 1: Table showing the frequency and percentage distribution of health status among post myocardial infarction patients (N= 65).

S. No	Health Status	1st follow up		2nd follow up	
		f	%	f	%
	Body mass index				
	Under weight	4	6.15%	2	3.07%
	Normal weight	22	33.84%	28	43.07%
1.	Pre Obesity	21	32.30%	19	29.23%
	Obesity class 1	12	18.46%	12	18.46%
	Obesity class 2	5	7.69%	3	4.61%
	Obesity class 3	1	1.53%	1	1.53%
	Blood pressure				
	Normal	19	29.23%	20	30.76%
2.	Elevated	19	29.23%	22	33.84%
	Stage 1	19	29.23%	22	33.84%
	Stage 2	8	12.30%	1	1.53%
	Hypertensive crisis	0	0%	0	0%

Data presented in table 1 shows the frequency and percentage distribution of health status in terms of BMI and blood pressure in 1st and 2nd follow up of post myocardial infarction patients. In the subject to BMI of patients in 1st and 2nd follow up, underweight (6.15%, 3.07%), normal weight (33.84%, 43.07%), pre obesity (32.30%, 29.23%), obesity class 1 (18.46%, 18.46%),

obesity class 2 (7.69%, 4.61%) and obesity class 3 (1.53%, 1.53%). In the subject to blood pressure of patients in 1st and 2nd follow up shows, normal (29.23%, 30.76%), elevated (29.23%, 33.84%), stage 1 (29.23%, 33.84%), stage 2 (12.30%, 1.53%) and hypertensive crisis (0%, 0%).

Table 2: Table showing the comparison of health status between first and second follow-up among post myocardial infarction patients using paired 't' test (N=65).

Comparison	Mean	SD	MD	Calculated 't' value	Table 't' value	p value
First follow-up	5.185	1.402	0.261	2.133	1.997	0.037*
Second follow-up	4.923	1.216				

*Level of significance 0.05; df= 64 *significant*

Data presented in the table 2 shows; t $_{tabulated\ value}$ is 1.997 at 0.05 level. Hence t $_{calculated\ value}$ is more than t $_{tabulated\ value}$. Then calculated t is significant. Hence we fail to accept null hypothesis, eventually accepting the research hypothesis. Therefore, there is a significant difference in health status following the completion of cardiac rehabilitation program.

Section III:- Effectiveness of cardiac rehabilitation program on treatment compliance
This section deals with the analysis and interpretation of data related to effect of cardiac rehabilitation program on treatment compliance in terms of medication, diet, exercises and follow up in 1st and 2nd follow up among post myocardial infarction patients.

Table 3: Table showing the frequency and percentage distribution of treatment compliance in terms of medication, diet, exercises and follow up among post myocardial infarction patients. (N=65).

S. No.	Treatment Compliance	Compliance criteria	1st follow up		2nd follow up	
			f	%	f	%
1	Medication Compliance	Good Compliance	61	93.8%	34	52.30%
		Moderate Compliance	03	4.61%	31	47.69%
		Poor Compliance	01	1.53%	00	0%
2	Diet Compliance	Good Compliance	18	27.69%	03	4.61%
		Moderate Compliance	47	72.3%	62	95.38%
		Poor Compliance	00	0%	00	0%
3	Exercise Compliance	Good Compliance	32	49.23%	40	61.53%
		Moderate Compliance	32	49.23%	25	38.46%
		Poor Compliance	1	1.53%	0	0%
4	Follow up Compliance	Compliance	65	100%	52	80%
		Non Compliance	00	0%	13	20%

Data presented in table 3 shows the frequency and percentage distribution of treatment compliance in terms of medication, diet, exercise and follow up among post myocardial infarction patients. On the subject to medication compliance of patients in 1st and 2nd follow up, good compliance (93.8%, 52.3%), moderate compliance (4.61%, 47.67%) and poor compliance (1.53%, 0%). On the subject to diet compliance of patients in 1st and 2nd follow up, good compliance

(27.69%, 4.61%), moderate compliance (72.3%, 95.38%) and poor compliance (0%, 0%). On the subject to exercise compliance of patients in 1st and 2nd follow up, good compliance (49.23%, 61.53%), moderate compliance (49.23%, 38.46%) and poor compliance (49.23%, 38.46%). And on the subject to follow up compliance of patients in 1st and 2nd follow ups, compliance (100%, 80%) and non compliance (0%, 20%).

Table 4: Table showing the comparison of medication compliance between first and second follow-up among post myocardial infarction patients using paired 't' test. (N=65).

Comparison	Mean	SD	MD	Calculated 't' value	Table 't' value	p value
First follow up	1.077	0.322	0.400	5.311	1.997	0.001*
Second follow up	1.477	0.503				

*Level of significance 0.05; df= 64 *significant*
Data presented in the table 4 shows; t $_{tabulated\ value}$ is 1.997 at 0.05 level. Hence t $_{calculated\ value}$ is more than t

$_{tabulated\ value}$. Then calculated t is significant. Hence we fail to accept null hypothesis, eventually accepting the research hypothesis. Therefore, there is a significant

difference in medication compliance following the completion of cardiac rehabilitation program.

Table 5: Table showing the comparison of diet compliance between first and second follow-up among post myocardial infarction patients using paired 't' test. (N=65).

Comparison	Mean	SD	MD	Calculated 't' value	Table 't' value	p value
First Follow up	14.185	0.827	0.738	5.592	1.997	0.001*
Second Follow up	3.446	0.884				

*Level of significance 0.05; df= 64 *significant*

Data presented in the table 5 shows; t $_{tabulated\ value}$ is 1.997 at 0.05 level. Hence t $_{calculated\ value}$ is more than t $_{tabulated\ value}$. Then calculated t is significant. Hence we fail to accept null hypothesis, eventually accepting the
research hypothesis. Therefore, there is a significant difference in diet compliance following the completion of cardiac rehabilitation program.

Table 6: Table showing the comparison of exercise compliance between first and second follow-up among post myocardial infarction patients using paired 't' test. (N=65).

Comparison	Mean	SD	MD	Calculated 't' value	Table 't' value	p value
First follow-up	6.431	1.984	0.585	2.781	1.997	0.007*
Second follow-up	5.846	1.427				

*Level of significance 0.05; df= 64 *significant*
Data presented in the table 6 shows, t $_{tabulated\ value}$ is 1.997 at 0.05 level. Hence t $_{calculated\ value}$ is more than t $_{tabulated\ value}$. Then calculated t is significant. Hence we fail to
accept null hypothesis, eventually accepting the research hypothesis. Therefore, there is a significant difference in exercises compliance following the completion of cardiac rehabilitation program.

Table 7: Table showing the comparison of follow-up compliance between first and second follow-up among post myocardial infarction patients using paired 't' test. (N=65).

Comparison	Mean	SD	MD	Calculated 't' value	Table 't' value	p value
First follow-up	1.000	0.000	0.200	4.001	1.997	0.001*
Second follow-up	1.200	0.403				

*Level of significance 0.05; df= 64 *significant*

Data presented in the table 7 shows; t $_{tabulated\ value}$ is 1.997 at 0.05 level. Hence t $_{calculated\ value}$ is more than t $_{tabulated\ value}$. Then calculated t is significant. Hence we fail to accept null hypothesis, eventually accepting the
research hypothesis. Therefore, there is a significant difference in follow up compliance following the completion of cardiac rehabilitation program.

Table 8: Table showing the comparison of treatment compliance (in terms of medication, diet, exercises and follows up) between first and second follow-up among post myocardial infarction patients using paired 't' test. (N=65).

Comparison	Mean	SD	MD	Calculated 't' value	Table 't' value	p value
First Follow up	22.631	2.491	0.615	2.207	1.997	0.031*
Second Follow up	22.015	1.883				

*Level of significance 0.05; df= 64 *significant*
Data presented in the table 8 shows; t$_{abulated\ value}$ is 1.997 at 0.05 level. Hence t $_{calculated\ value}$ is more than t $_{tabulated\ value}$. Then calculated t is significant. Hence we fail to accept null hypothesis, eventually accepting the research hypothesis. Therefore, there is a significant difference in treatment compliance (in terms of medication, diet, exercises and follows up) following the completion of cardiac rehabilitation program.

Section IV:- Effectiveness of cardiac rehabilitation program on hospitalization
This section deals with the analysis and interpretation of data related to effect of cardiac rehabilitation program on hospitalization in 1st and 2nd follow up among post myocardial infarction patients.

Table 9: Showing the frequency and percentage distribution of hospitalization in 1st and 2nd follow up among post myocardial infarction patients. (N=65).

S. No.	Hospitalization	1st follow up		2nd follow up	
		f	%	f	%
1	No hospitalization	63	96.9%	45	69.23%
2	1-2 times hospitalized	2	3.07%	20	30.76%
3	More than 3times hospitalized	0	0%	0	0%

Data presented in table 9 shows the frequency and percentage distribution of hospitalization in first and second follow up. In first follow up, majority of patients (96.9%) were not hospitalized, minimal (3.07%) had 1-2 times hospitalized. In second follow up, maximum percentages (69.23%) of patients were not hospitalized and minimal patients (30.76%) were 1-2 times hospitalized. None of the patients were hospitalized more than 3 times in both the follow ups.

Table 10: Table showing comparison of hospitalization between first and second follow-up among post myocardial infarction patients using paired 't' test. (N=65).

Comparison	Mean	SD	MD	Calculated 't' value	Table 't' value	p value
First follow-up	1.308	0.465	0.277	4.609	1.997	0.001*
Second follow-up	1.031	0.174				

*Level of significance 0.05; df= 64 *significant*

Data presented in the table 10 shows, $t_{tabulated\ value}$ is 1.997at 0.05 level. Hence $t_{calculated\ value}$ is more than $t_{tabulated\ value}$. Then calculated t is significant. Hence we fail to accept null hypothesis, eventually accepting the research hypothesis. Therefore, there is a significant reduction in hospitalization following the completion of cardiac rehabilitation program.

Section V:- Correlation between health status and treatment compliance
Pearson correlation coefficient was computed to find the correlation between health status and treatment compliance.

Table 11: Table showing correlation coefficient of health status with treatment compliance (N=65).

Parameters	First follow-up	Second follow- up
	Pearson correlation coefficient	Pearson correlation coefficient
Health status	r=0.109**	r=-0.081**
Treatment compliance	p=0.386	p=0.519

***Non-significant*

Data presented in table 11 shows at 5% level of probability the tabulated value is more than calculated value. Hence we fail to accept research hypothesis, eventually accepting the research hypothesis. Therefore there is no significant correlation among two dependent variables of health status in terms of blood pressure and BMI and treatment compliance in terms of medication, diet, exercises and follows up.

DISCUSSION

Compliance towards medical advises is a key factor to discover health status of the patient. Negligence towards compliance critically affects patient's health and further substandard the disease. Cardiac rehabilitation is designed to help the patients to improve health status and recover from cardiovascular diseases. Patients who are compliant to cardiac rehabilitation program have good health status and do not get hospitalized easily. Hence, a cardiac rehabilitation program was carried out among post myocardial infarction patients in order to assess the effectiveness of cardiac rehabilitation program and reduction in the hospitalization rates.

This study evaluated the effectiveness of the cardiac rehabilitation program on health status and treatment compliance among post myocardial infarction patients. The result of the study indicates that there is a significant difference in health status and treatment compliance following the completion of cardiac rehabilitation program assessed through a structured questionnaire which further interviewed and evaluated with baseline data, treatment compliance, number of cardiac related hospitalization and self-assessment cardiac rehabilitation program booklet including medication assessment indicating effectiveness of cardiac rehabilitation program.

The findings of the study have been discussed in reference to the objectives and hypothesis which are as follows:

Effect of cardiac rehabilitation program on health status
In this study noteworthy difference was observed in the health status following the completion of cardiac

rehabilitation program. The findings of the study were supported by another study which indicates marked improvement in the functional capacity and health status in patients with continuous-flow LVADs who attended cardiac rehabilitation program.[42]

Findings of the similar study depicts that cardiac rehabilitation significantly improves the functional capacity and some hemodynamic responses, post coronary artery bypass grafting. Therefore, patients need to be referred to rehabilitation units.[43]

Effect of cardiac rehabilitation program on treatment compliance

In this study significant difference was noticed in treatment compliance (in terms of medication, diet, exercises and follows up) following the completion of cardiac rehabilitation program. The findings were consistent with a previous study in which exercise based cardiac rehabilitation alone was accredited with reduction of almost half of the mortality rates and reduction in the major risk factors like smoking. An improvement in tolerated metabolic equivalents by 33% and maximal oxygen consumption by 16% are amongst a few other beneficial effects which are observed as an output of cardiac rehabilitation.[11]

Similar study supported the findings of this study which was resulted in 20% reduction in total mortality and 26% reduction in cardiac mortality rates, with exercise-based rehabilitation compared to usual medical aid.[34] Similar studies were carried out which further put light on the matter that CR program enhanced the physical function of elderly and ability to do work independently.[34]

Effect of cardiac rehabilitation program on hospitalization

In the current study remarkable reduction in hospitalization was seen following the completion of cardiac rehabilitation program. The finding of the study was supported by another study which depicted promising results with patients complying with the CR process with reduction in readmission rates and mortality post MI. Thus efforts have to be made at improving awareness amongst MI patients which would eventually improve participation rates and result in positive healthcare outcomes.[19]

Another study was conducted among 100 patients with myocardial infarction pour light on the observable improvement within the cardiac status, functional status and quality of life of the patients and also reduced recurrent MI, repeated hospitalization and future mortality.[30]

CONCLUSIONS

From the findings, it can be concluded that highest percentage (55.4%) of them were in the age group of 51-70 years, were male (71%), were married (93.8%), were graduate (56.9%), do not have bad habits (63.1%) and were advised PTCA for treatment (67.7%).

After completion of cardiac rehabilitation program highly significant differences were observed related (P >0.05) to the health status in terms of BMI and blood pressure, treatment compliance in terms of medication, diet, exercise and follow up and a noteworthy individualized developments observed in medication, diet, exercises and follow up compliance.

Marked reduction in hospitalization was observed among the myocardial infarction patients following (P >0.05) the completion of cardiac rehabilitation program.

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