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Assessment of knowledge and practice regarding cardiac rehabilitation of myocardial infarction patient and their care giver attending cardiac outpatient department in N R S Medical College and Hospital, Kolkata

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Abstract
A descriptive study to assess the knowledge and practice regarding cardiac rehabilitation of Myocardial Infarction patient and their care giver in N R S Medical College and Hospital, Kolkata. The conceptual framework adopted for the study was based on '(Rosen stock's 1974, Becker and Maiman's 1975) Health Belief Model'. Eighty-four MI patient and Eighty-four care giver of MI patient were selected as samples by non-probability purposive sampling technique to collect data. A valid reliable structured knowledge questionnaire and structured practice questionnaire were used for data collection. Descriptive and inferential statistics were used for data analysis. The result revealed that the MI patient obtained 47.6% average knowledge score and 52.4% average practice score and care giver of MI patient obtained 47.6% good knowledge score and 51.2% average practice score related to cardiac rehabilitation. Significant relationship was found between knowledge and practice score regarding cardiac rehabilitation of MI patient [r=0.51,'t' (82) =0.21, *p<0.05] and also Significant relationship was found between knowledge and practice score regarding cardiac rehabilitation of care giver of MI patient[r=0.44,'t'(82)=0.21, *p<0.05].There was no significant association between knowledge score of MI patient and selected demographic variables, i.e. age, gender, occupation, family income, dependency level of patient, type of family except educational status, area of residence, duration of illness there was significant association at 0.05 level of significant. The study has implications in different fields of nursing practice, nursing education, nursing administration and nursing research. On the basis of findings some recommendations were made for future studies or wider generalization.

Keywords: Myocardial infarction, cardiac rehabilitation, patient and their care giver attending cardiac outpatient department

Introduction
Heart disease is the main cause of death of all over the world. Most of the developed and developing countries the cardiovascular diseases are the main cause of death and cause of premature morbidity and mortality. Acute coronary syndromes are more than 250,000 deaths annually. The goal of treatment for cardiac disease is to maximize cardiac outcomes. Cardiac rehabilitation is a programme that targets risk reduction by means of giving health education. Cardiac rehabilitation is important for patient who are suffer from cardiac events to improve their quality of life during hospitalization period. Cardiac rehabilitation is a multidimensional intervention which is to improve the functional capacity of heart disease patients and wellbeing of health-related quality of life. The strong recommendation in current clinical guidelines for the referral of the patients groups and global access to the cardiac rehabilitation remains in poor. An increasing body of evidence supports home-based and technology-based models of cardiac rehabilitation as adjuncts to traditional centre-based programmes, especially in low-income and middle-income countries, in which cardiac rehabilitation services are scalable and affordable models are much needed. Future application to the delivery of cardiac rehabilitation need with the ageing population and cater to the needs of the increasing numbers of patients who are in cardiac disease and present with two or more than others chronic diseases.

Cardiovascular diseases are the leading cause of death in most of the developed and developing countries. Heart diseases are the leading cause of premature morbidity and mortality. Acute coronary syndromes are responsible for more than 250,000 deaths. Cardiac rehabilitation, aims to returning the patient back to normal functioning in life also a safe and effective manner to improve the psychosocial and vocational condition of the patient. The Cardiac rehabilitation program is involves education, diet, exercise, risk reduction, stress management and psychological counselling. A meta-analysis based on a review of 48 randomized trials that was compared to the outcomes of exercise-based cardiac rehabilitation with usual medical care of heart disease patient and result revealed that the reduction of 20% in total mortality and 26% in cardiac mortality rates, which represents that the exercise-based rehabilitation compared to the usual patient care. Cardiac rehabilitation is the important role in secondary prevention of the cardiovascular disease. But now days our country has very small amount of cardiac rehabilitation centre and to improve the cardiac centre.

Objectives of the study were

1. To assess the knowledge regarding Cardiac rehabilitation of Myocardial Infarction patient and their care giver.
2. To assess the practice regarding Cardiac rehabilitation of Myocardial Infarction patient and their care giver.
3. To determine the association between knowledge with selected demographic variables.
4. To determine the association between practice with selected demographic variables.
5. To correlate the knowledge and practice regarding cardiac rehabilitation.

Methodology

- **Research Approach:** Quantitative research approach
- **Research design:** Non-experimental descriptive survey research design

Research Setting

Pilot study: Cardiac outpatient department in Calcutta National Medical College and Hospital, Kolkata.

Final study: Cardiac outpatient department in N. R. S Medical College and Hospital, Kolkata.

Population

All Myocardial Infarction patient and their care giver.

Sample

Myocardial Infarction patient and their care giver attending cardiac OPD, C.N.MCH, and N.R.S MCH Kolkata.

Sampling Technique

Non -probability purposive sampling technique.

Sample size

Pilot study: 10 myocardial infarction patient and 10 their care giver

Final study: 84 myocardial infarction patient and 84 their care giver

Sampling Criteria:

Inclusion criteria

1. Patient available at the time of data collection.
2. Myocardial Infarction patient who can speak and understand Bengali, English.
3. Patient who are interested to participate in study.

Exclusion criteria

1. Patient who is mentally ill.
2. Patient who is critically ill and unresponsive.
3. Patient who are not willing to participate.

Table 1: Data collection tools and techniques

Sl. No	Variables	Data collection Tools	Techniques
1.	Demographic variable	Tool I (A)- Semi structured Interview Schedule for socio-demographic data of MI patient Tool I (B)- Semi structured Interview Schedule for socio-demographic data of care giver of MI patient	Interviewing
2.	Knowledge about cardiac rehabilitation	Tool II- structured knowledge questionnaire for MI patient and their care giver	Interviewing
3.	Practice about cardiac rehabilitation of MI patient	Tool III(A)- structured practice questionnaire for MI patient	Interviewing
4.	Practice about cardiac rehabilitation of care giver of MI patients	Tool III(B)- structured practice questionnaire for care giver of MI patient	Interviewing

Pilot study

After obtaining administration approval from the MSVP of Calcutta National Medical College and Hospital, pilot study was done on 06/02/2023- 18/02/2023 at Cardiology OPD, C.N.M...C &H. Semi - structured questionnaire to collect background information along with structured knowledge questionnaire were given to the subjects and time taken about 5-10 minutes for completion of background information and for knowledge questionnaire about 20-25 minutes. After gaining the experience, it was decided to proceed for the main study.

Analysis and interpretation of Data

Table 2: Mean, median, mean percentage and SD of level of knowledge among Myocardial infarction patients and their care giver

Variables	Obtained range score	Mean	Median	SD	Mean percentage (%)
Knowledge score of Myocardial Infarction patient	4-19	11	10	3	50
Knowledge score of care giver Myocardial Infarction patient	3-17	10	11	3.5	45.5

n_1= Myocardial Infarction patient
n_2=care giver of MI patient
Maximum score= 22
Minimum score=0

Above table 2 revealed that knowledge regarding cardiac rehabilitation of MI patient, obtained range score was4-19, where maximum possible score was 19 and mean was 11, SD was 3, median was 10 and mean percentage was 50%. Which indicate average level of knowledge regarding cardiac rehabilitation as the level of knowledge was classified as below 25% referred as poor, 26%-50%as average, 51%-75%was good and 76%-100% was referred as very good. And knowledge regarding cardiac rehabilitation of care giver of MI patient, obtained range score was 3-17, mean was 10, SD was 3.5, median was 11, and mean percentage was 45.5% which denotes average level of knowledge.

Table 3: Frequency and percentage distribution of level of knowledge score among MI patients and their care giver n_1+n_2= 84+84

Level of knowledge score	Range of score	MI patient		Care giver of MI patient	
		Frequency(f)	Percentage (%)	Frequency(f)	Percentage (%)
Very Good (76-100%)	16-22	11	13.1	5	5.9
Good (51-75%)	11-15	28	33.3	40	47.6
Average (26-50%)	6-10	40	47.6	27	32.2
Poor (≤25%)	0-5	5	6.0	12	14.3

n_1= MI patient
n_2=care giver of MI patient

Above table 3 Showed that among 84 respondents 28 (33.3%) was good knowledge, 11 (13.1%) was very good knowledge and 40 (47.6%) was average knowledge and 5 (6%) were poor knowledge regarding cardiac rehabilitation of MI patients. And 84 respondents 40 (47.6%) was good knowledge, 5 (5.9%) was very good knowledge and 27 (32.2%) was average knowledge and 12 (14.3%) were poor knowledge regarding cardiac rehabilitation of care giver of MI patients.

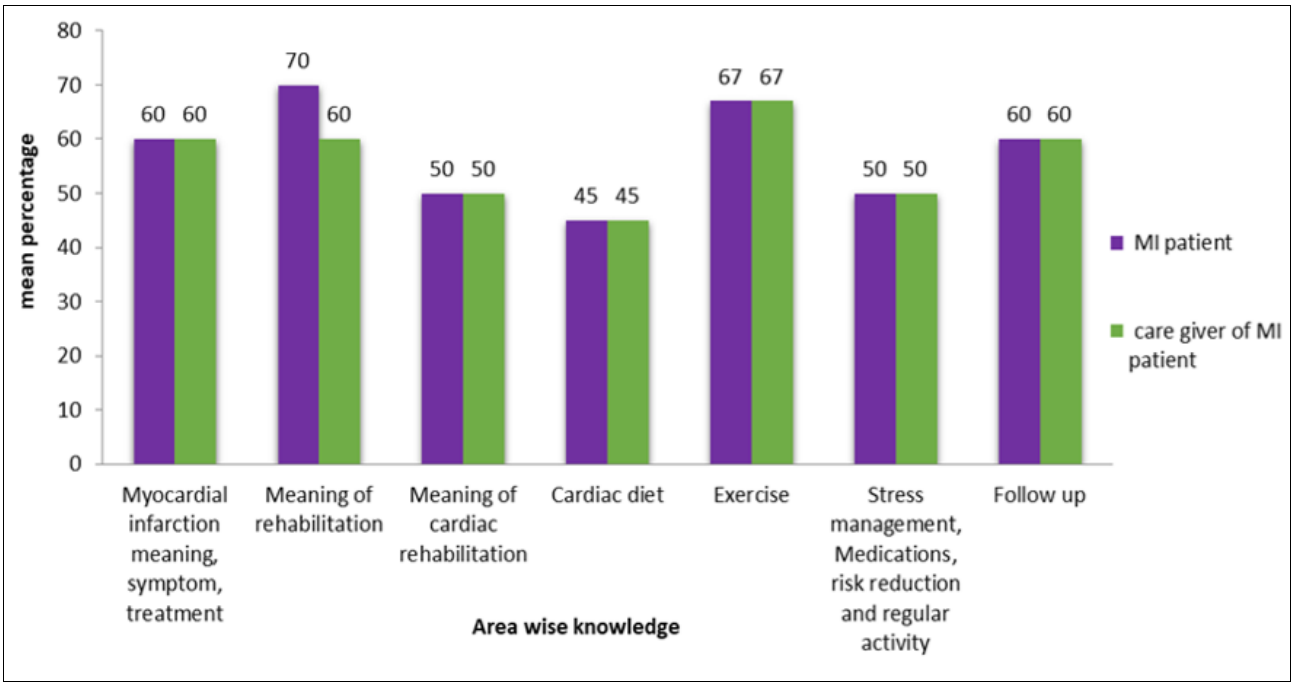

Fig 1: Bar diagram showing area wise mean percentage distribution of knowledge score regarding cardiac rehabilitation of MI patient and their care giver n_1+n_2= 84+84

Above figure 1 showed that area wise knowledge score regarding cardiac rehabilitation of MI patients were (70%) in meaning of rehabilitation of maximum mean percentage score, this indicated that very good knowledge existing in this area. The lowest mean percentage score was in the area of cardiac diet (45%) which indicated that just average knowledge existing this area. And the knowledge score regarding cardiac rehabilitation of care giver of MI patients were (67%) in exercise of maximum mean percentage score, this indicated that good knowledge existing in this area. The lowest mean percentage score was in the area of cardiac diet (45%) which indicated that just average knowledge existing this area.

Table 4 Mean, median, mean percentage and SD of practice score among Myocardial infarction patients n_1 =84

Variables	Obtained range score	Mean	Median	SD	Mean percentage (%)
Practice score of Myocardial Infarction patient	6-16	11.2	10	2.8	46.6

n_1= MI patient
Maximum score= 24
Minimum score=0

Above table 4 showed that practice regarding cardiac rehabilitation of MI patient, obtained range score was 6-16, maximum possible score was 24, mean was 11.2, SD was 2.8, median was 10, and mean percentage was 46.6% which denotes average level of practice was classified as below 25% referred as poor, 26%-50% as average practice, 51%-75%was good and 76%-100% was referred as very good practice.

Table 5: Frequency and percentage distribution of practice score among Myocardial infarction patients n_1=84

Level of practice	Range of score	Frequency (f)	Percentage (%)
Very Good (76-100%)	19-24	Nil	0
Good (51-75%)	13-18	38	45.2
Average (26-50%)	7-12	44	52.4
Poor (≤25%)	0-6	2	2.4

n_1= MI patient

Above table 5 Indicated that among 84 respondents 38 (45.2%) was good practice, and 44 (52.4%) was average practice and 2 (2.4%) was poor practice regarding cardiac rehabilitation of MI patients.

Table 6: Area wise categorization of practice score of among Myocardial infarction Patients n_1=84

Sl. No	Sub scale category	Maximum possible score	Mean	Mean Percentage (%)	SD
1.	Regular treatment	5	2.6	52	1.4
2.	Life style modification	6	1.8	30.8	0.7
3.	Follow up check up	1	0.6	**60**	0.5

n_1 =Myocardial infarction patient

Table 6 showed that maximum mean percentage score gained by MI patients in area of follow up check- up (60) which indicated there was good practice in this area. The lowest mean percentage score was in the area of life style modification (30.8%), this indicated that minimum practice deficit in this area.

Table 7: Mean, median, mean percentage and SD of practice score among care giver of Myocardial infarction patients n_2= 84

Variables	Obtained range score	Mean	Median	SD	Mean percentage (%)
Practice score of care giver of Myocardial Infarction patient	5-14	8.3	8	2.2	51.8

n_2=care giver of Myocardial infarction patient
Maximum score= 16

Minimum score=0Above table 7 showed that practice regarding cardiac rehabilitation of care giver of MI patient, obtained range score was 5-14, mean was 8.3, SD was 2.2, median was 8, and mean percentage was 34.6% which denotes average level of practice of care giver of Myocardial infarction patients regarding cardiac rehabilitation.

Table 8: Frequency and percentage distribution of practice score among care giver of Myocardial infarction patients n_2= 84

Level of practice	Range of score	Frequency(f)	Percentage (%)
Very Good (76-100%)	13-16	04	4.7
Good (51-75%)	9-12	37	44.1
Average (26-50%)	5-8	43	**51.2**
Poor (≤25%)	0-4	nil	0

n_2=care giver of Myocardial infarction patient

Above table 8 showed that among 84 respondents 37 (44.1%) was good practice, and 43 (51.2%) was average practice and 4 (4.7%) was very good practice regarding cardiac rehabilitation of care giver of MI patients.

Table 9: Area wise maximum possible score, mean, SD and mean percentage of practice score obtained by care giver of MI patients n_2=84

Sl no	Sub scale category	Maximum possible score	Mean	Mean Percentage (%)	SD
1.	Life style modification	5	2	**40**	1
2.	Psychological support	3	1	33	1

n_2=care giver of Myocardial infarction patient

Above table 9 showed that maximum mean percentage score gained by care giver of MI patients in area of Life style modification (40%) which indicated there was good practice in this area. The lowest mean percentage score was in the area of psychological support. (33%), this indicated minimum practice deficit in this area.

Table 10: Chi square test showing association between knowledge score with age, gender, marital status and educational status of MI patients. Median value=10 n_1=84

Demographic characteristics	Knowledge of MI patient		P value	Value of $c\chi^2$	df	significance
	<Median	≥Median				
Age (in yrs.)						
<50	11	25	0.43	0.62	1	NS
≥50	11	37				
Gender						
Male	12	38	0.57	0.3	1	NS
Female	10	24				
Marital status						
Married	16	45	0.15	2.03	1	NS
Unmarried	06	17				
Educational status						
< secondary	08	42	0.006	6.63	1	Significant
≥secondary	14	20				

Table value χ 2 (df1) = 3.84, p<0.05, N.S= nothing significant

Above table 10 Showed that the calculated chi- square values against age, gender, marital status, educational status at 1 degree of freedom and 0.05 level of significance was less than that of the table value. So, there was no significant association between knowledge score and demographic variables on cardiac rehabilitation of MI patients. Except educational status which were significant at 0.05 level of significance.

Table 11: Chi square test showing association between knowledge score with occupational status, monthly income, area of residence of MI patients. Median value=10 n_1=84

Demographic characteristics	Knowledge of MI patient		Value of χ^2	P value	df	Significance
	<Median	≥Median				
Occupation						
Service	12	43	1.59	0.4	2	N.S.
Business	05	10				
Unemployment	05	09				
Family income						
Above.10000	08	18	0.74	0.68	2	N.S.
Rs 5001-10000	07	26				
Rs 2001-5000	07	18				
Area of Residence						
Urban	16	29	4.39	0.03	1	Significant.
Rural	06	33				

n_1= MI patient

Table value χ 2 (df 2) = 5.9,(df1) = 3.84, p<0.05, N.S= nothing significant

Above table 11 showed that the calculated chi- square values against occupation, family income at 2 degree of freedom and 0.05 level of significance was less than that of the table value. So, there was no significant association between knowledge score and demographic variables on cardiac rehabilitation of MI patients. Except area of residence which were significant at 0.05 level of significance and the calculated value is higher than the tabulated chi-square value at 1 degree of freedom

Table 12: Chi square test showing association between knowledge score with duration of illness, dependency level of patient, type of family of MI patients. Median value=10 n_1=84

Demographic characteristics	Knowledge of MI patient		Value of χ^2	P value	df	Significance
	<Median	≥Median				
Duration of illness						
<1 year.	05	30	4.39	0.03	1	**Significant.**
≥ 1 year	17	32				
Dependency level of patient						
Independent	11	25	0.46	0.79	2	N.S
Fully dependent)	08	19				
Partially Dependent	08	13				
Type of family						
Nuclear	16	44	0.02	0.8	1	N.S
Joint and extended	06	18				

n_1= MI patient

Table value χ2 (df 2) = 5.9, (df1) = 3.84, p<0.05, N.S= nothing significant

Above table 12 showed that the calculated chi- square values against dependency level of patient, type of family at 1 and 2 degree of freedom and 0.05 level of significance was less than that of the table value. So, there was no significant association between knowledge score and demographic variables on cardiac rehabilitation of MI patients. Except duration of illness which were significant at 0.05 level of significance and the calculated value is higher than the tabulated chi-square value at 1 degree of freedom.

Table 13: Chi square test showing association between knowledge score with age, gender, educational status, occupational of care giver MI patients. Median value=11 n_2=84

Demographic characteristics	Knowledge of care giver of MI patient		Value of χ^2	P value	df	Significance
	<Median	≥Median				
Age (in yrs.)						
<35	14	24	0.16	0.68	**1**	N.S
≥35	15	31				
Gender						
Male	09	18	0.03	0.8	**1**	N.S.
Female	20	37				
Educational status						
< Secondary	16	33	0.2	0.6	1	N.S.
≥ Secondary	13	22				
Occupation						
Service	05	11	3.12	0.3	**3**	N.S.
Business	08	07				
Unemployment	11	26				
Daily labour	5	11				

n_2= care giver of MI patient
Table value χ 2 (df1)= 3.84, (df 3) =7.81, p> 0.05, N.S= nothing significant

Above table 13 showed that the calculated chi- square values against age, gender, educational status, occupation at 1 degree of freedom and 0.05 level of significance was less than that of the table value. So, there was no significant association between knowledge score and demographic variables on cardiac rehabilitation of care giver of MI patients.

Table 14: Chi square test showing association between knowledge score with relationship with patient, history of Myocardial Infarction in other family member, previous knowledge about caring of patient with Myocardial Infarction, source of knowledge of care giver MI patients. Median value=11 n_2=84

Demographic characteristics	Knowledge of care giver of MI patient		Value of χ^2	P value	df	Significance
	<Median	≥Median				
Relationship with patient						
Siblings	09	10	2.03	0.5	3	N.S.
Children	07	18				
Wife	07	16				
Daughter and son in law	06	11				
History of Myocardial Infarction in other family member						
Yes	09	14	0.29	0.58	1	N.S.
No	20	41				
Previous knowledge about caring of patient with Myocardial Infarction						
Yes	10	13	1.12	0.2	1	N.S.
No	19	42				
If yes (n2=23)source of knowledge						
Mass media and internet	05	08	0.30	0.58	1	N.S
Health care centre	05	05				

n_2= care giver of MI patient
Table value χ 2 (df1) = 3.84, (df 3)= 7.81, p>0.05, N.S.= nothing significant

Above table 14 showed that the chi square values computed between knowledge and demographic variables on cardiac rehabilitation of care giver of MI patients were not significant at 0.05 level of significance.

Table 15: Chi square test showing association between practice score with age, gender, marital status, educational status of MI patients. Median value=10 n1=84

Demographic characteristics	Practice of MI patient		Value of χ^2	P value	df	Significance
	<Median	≥Median				
Age (in yrs.)						
<50	11	25	0.21	0.64	1	N.S
≥50	17	31				
Gender						
Male	15	35	0.61	0.43	1	N.S.
Female	13	21				
Marital status						
Married	22	39	0.74	0.38	1	N.S
Unmarried	06	17				
Educational status						
< secondary	17	33	0.03	0.8	1	N.S.
≥ secondary	11	23				

n_1= MI patient
Table value χ 2 (df1) = 3.84, p>0.05, N.S.= nothing significant

Above table 15 showed that the calculated chi- square values against age, gender, marital status, educational status at 1 degree of freedom and 0.05 level of significance was less than that of the table value. So, there was no significant association between practice score and demographic variables on cardiac rehabilitation of MI patients.

Table 16: Chi square test showing association between practice score with occupational status, family income, area of residence of MI patients of MI patients. Median value-10 n_1=84

Demographic characteristics	Practice of MI patient		Value of χ^2	P value	df	Significance
	<Median	≥Median				
Occupation						
Service	15	40	2.65	0.26	2	N.S.
Business	07	09				
Unemployment	06	07				
Family income						
Above.10000	10	16	3.76	0.15	2	N.S.
Rs 5001-10000	07	26				
Rs 2001-5000	11	14				
Area of Residence						
Urban	15	30	0.06	0.8	1	N.S.
Rural	12	27				

n_1=MI patient
Table value χ2 (df1) = 3.84, (df 2) = 5.9, p>0.05, N.S= nothing significant

Above table 16 showed that the calculated chi- square values against occupation, family income, area of residence at 1 and 2 degree of freedom and 0.05 level of significance was less than that of the table value. So, there was no significant association between practice score and demographic variables on cardiac rehabilitation of MI patients.

Table 17: Chi square test showing association between practice score with duration of illness, dependency level of patient, type of family of MI patients. Median value=10 n_1=84

Demographic characteristics	Practice of MI patient		Value of χ^2	P value	df	Significance
	<Median	≥Median				
Duration of illness						
<1 year.	12	23	0.02	0.8	1	N.S
≥ 1 year	16	33				
Dependency level of patient						
Independent	12	24	0.38	0.82	2	N.S
Fully dependent) Partially	10	17				
Dependent	06	15				
Type of family						
Nuclear	22	38	1.05	0.3	1	N.S
Joint and extended	06	18				

n_1= MI patient
Table value χ 2 (df1) 3.84, (df 2) 5.9, p>0.05, N.S= nothing significant

Above table 17 showed that the calculated chi- square values against duration of illness, dependency level of patient, type of family at 1 and 2 degree of freedom and 0.05 level of significance was less than that of the table value. So, there was no significant association between practice score and demographic variables on cardiac rehabilitation of MI patients.

Table 18: Chi square test showing association between practice score with age, gender, educational status, occupational status of care giver of MI patients. Median value=8. n_2=84

Demographic characteristics	Practice of care giver of MI patient		Value of χ^2	P value	df	Significance
	<Median	≥Median				
Age (in yrs.)						
<35	15	23	1.7	0.1	1	N.S
≥35	12	34				
Gender						
Male	09	18	0.02	0.8	1	N.S.
Female	18	39				
Educational status						
< secondary	17	32	0.3	0.5	1	N.S.
≥ secondary	10	25				
Occupation						
Service	06	10	8.21	0.04	3	Significant
Business	08	07				
Unemployment	12	25				
Daily labour	1	15				

n_2= care giver of MI patient
Table value χ 2 (df1) = 3.84, (df 3) = 7.81 p< 0.05, N.S= nothing significant

Above table 18 showed that the calculated chi- square values against age, gender, educational status at 1 degree of freedom and 0.05 level of significance was less than that of the table value. So, there was no significant association between practice score and demographic variables on cardiac rehabilitation of care giver of MI patients. Except occupation which was significant at 0.05 level of significance. Calculated chi-square value was higher than the tabulated value 3 degree of freedom.

Table 19: Chi square test showing association between practice score with relationship with patient, history of Myocardial Infarction in other family member, previous knowledge about caring of patient with Myocardial Infarction, source of knowledge of care giver of MI patients. Median value=8 n_2=84

Demographic characteristics	Practice of care giver of MI patient		Value of χ^2	P value	df	Significance
	<Median	≥Median				
Relationship with patient						
Siblings	07	12	1.05	0.7	3	N.S.
Children	09	15				
Wife	06	17				
Daughter and son in law	05	13				
History of Myocardial Infarction in other family member						
Yes	08	15	0.1	0.75	1	N.S.
No	19	42				
Previous knowledge about caring of patient with Myocardial Infarction						
Yes	09	14	0.7	0.39	1	N.S.
No	18	43				
If yes (n2=23)source of knowledge						
Mass media and internet	05	07	0.03	0.8	1	N.S
Health care centre	05	06				

n_2= care giver of MI patient
Table value χ2 (df1) = 3.84, (df 3)= 7.81, p>0.05, N.S.= nothing significant

Above table 19 showed that the chi square values computed between practice and demographic variables on cardiac rehabilitation of care giver of MI patients were not significant at 0.05 level of significance.

Table 20: Findings related to relationship between knowledge and practice of MI patient regarding cardiac rehabilitation. n1=84

Variables	'r' value	't' value
Knowledge and practice score of MI patient regarding cardiac rehabilitation	0.51	**0.92***

n_1= MI patient
't' (82) = 0.21
*=significant p<0.05

Table 20 revealed that there was moderate positive correlation between level of knowledge and practice of MI patient on cardiac rehabilitation. Further, computed coefficient i.e.' value (0.92) was found to be higher than the table value (0.21) at 82 df at 0.05 level of significance. So, there was statistical significant relationship between knowledge score and practice score of MI patient regarding cardiac rehabilitation.

Table 21: Findings related to relationship between knowledge and practice of care giver of MI patient regarding cardiac rehabilitation. n_2=84

Variables	'r' value	't' value
Knowledge and practice score of care giver of MI patient regarding cardiac rehabilitation	0.44	6.8*

n_2= care giver of MI patient
't' (82)=0.21
*=significant p<0.05

Table 21 revealed that there was positive correlation (0.44) was established between level of knowledge and practice score of care giver of MI patient regarding cardiac rehabilitation. Further, computed coefficient i.e., 't' value (6.8) was found to be higher than the table value (0.21) at 82 df at 0.05 level of significance. So, there was statistical significant relationship between knowledge score and practice score of care giver of MI patient regarding cardiac rehabilitation.

Discussion

This chapter deals with the major findings of the study. Discussion in relation with the other studies. Conclusion and implications of the study in the field of nursing practice. Nursing education. Nursing administration and nursing research. It also attempted to find out the limitations of the study and to give suggestions and recommendations for future study in the field.

Major findings of the study

Findings related to background information of MI patients

Majority of the MI patients i.e. 31(36.90%) out of 84 belongs to the age group of 30-45 years.
Majority of the MKI patients i.e. 50(59.52%) out of 84 had been male.
According to marital status, Majority of the MI patients i.e. 61(72.6%) out of 84 had been married.
According to educational status Majority of the MI patients i.e. 30 out of 84 (35.7%) had primary school.
Majority of the MI patients i.e. 35 out of 84 (41.7%) had private employee.
Majority of the MI patients i.e. 30 out of 84 (35.7%) family income (monthly) Rs 5001-10000.
According to area of residence that is 47(55.9%) out of 84 MI patients had belongs to urban population.
Majority of the MI patients i.e. 49 out of 84 (58.33%) had duration of illness >1 year.
Majority of the MI patients i.e. 36 out of 84 (42.86%) had independent.
According to type of family Majority of the MI patients i.e. 60(71.43%) out of 84 had nuclear family.

Findings related to background information of caregiver of MI patients

Majority of the care giver of MI patients i.e.34 (40.5%) out of 84 belongs to the age group of 15-30 years.
Majority of the care giver MI patients i.e. 57 (67.8%) out of 84 had been female.
According to educational status Majority of the care giver of MI patients i.e. 33 out of 84 (39.3%) had primary school.
Majority of the care giver of MI patients i.e. 35 out of 84 (41.7%) had unemployed.
Majority of the care giver of MI patients i.e. 60 out of 84 (19.1%) had relationship with patients were daughter in law.
Majority of the care giver of MI patients i.e. 61 out of 84 (72.6%) who had no history of MI in other family member.
Majority of the care giver of MI patients i.e. 61 out of 84 (72.6%) who had no previous knowledge about caring of patient with MI.
According to sources of knowledge, Majority of the care giver of MI patients i.e. 10(11.9%) out of 23 had health care centre.

Findings related to knowledge score of MI patients regarding cardiac rehabilitation

Mean knowledge score of MI patients was 11.
Mean percentage of knowledge score of MI patients regarding cardiac rehabilitation was 50%
The obtained maximum mean percentage score was in the area of meaning of rehabilitation (70%).
The obtained minimum mean percentage score was in the area of cardiac diet (45%).
47.6% of MI patients had average level of knowledge score regarding cardiac rehabilitation.

Findings related to knowledge score of caregiver of MI patients regarding cardiac rehabilitation

Mean knowledge score of care giver of MI patients was 10.
Mean percentage of knowledge score of care giver of MI patients regarding cardiac rehabilitation was 45.5%
The obtained maximum mean percentage score was in the area of exercise (67%).
The obtained minimum mean percentage score was in the area of cardiac diet (45%).
47.6% of care giver of MI patients had good level of knowledge score regarding cardiac rehabilitation.

Findings related to practice score of MI patients regarding cardiac rehabilitation

Mean practice score of MI patients was 11.2.
Mean percentage of practice score of MI patients regarding cardiac rehabilitation was 46.6%
The obtained maximum mean percentage score was in the area of follow up checkup (60%).
The obtained minimum mean percentage score was in the area of life style modification (30.8%).
52.4% of MI patients had average level of practice score regarding cardiac rehabilitation.

Findings related to practice score of caregiver of MI patients regarding cardiac rehabilitation

Mean practice score of care giver of MI patients was 8.3.

Mean percentage of practice score of care giver of MI patients regarding cardiac rehabilitation was 51.8%

The obtained maximum mean percentage score was in the area of life style modification (40%).

The obtained minimum mean percentage score was in the area of psychological support (33%).

51.2% of care giver of MI patients had good level of practice score regarding cardiac rehabilitation.

Findings related to association of knowledge score of MI patient with age, gender, marital status, education, occupation, family income, area of residence, duration of illness, dependency level of patient and type of family

There was no significant association between knowledge score of MI patients regarding cardiac rehabilitation and selected demographic variables, i.e., age, gender, marital status, occupation, family income, dependency level of patient, type of family except educational status, area of residence and duration of illness which were significant at 0.05 level of significance.

Findings related to association of knowledge score of caregiver of MI patient with age, gender, education, occupation, relationship with patients, history of MI in other family member, previous knowledge about caring of patient with MI, sources of knowledge

There was no significant association between knowledge score of care giver of MI patients regarding cardiac rehabilitation and selected demographic variables, i.e., age, gender, education, occupation, relationship with patient, history of MI in other family member, previous knowledge about caring of patient with MI, sources of knowledge.

Findings related to association of practice score of mi patient with age, gender, marital status, education, occupation, family income, area of residence, duration of illness, dependency level of patient and type of family

Age, gender, marital status, education, occupation, family income, area of residence, duration of illness, dependency level of patient and type of family of MI patients was not statistically associated with practice score of cardiac rehabilitation at 0.05 level of significance.

Findings related to association of practice score of caregiver of MI patient with age, gender, education, occupation, relationship with patients, history of MI in other family member, previous knowledge about caring of patient with MI, sources of knowledge

Age, gender, education, relationship with patients, history of MI in other family member, previous knowledge about caring of patient with MI, sources of knowledge of care giver of MI patient was not statistically associated with practice score of cardiac rehabilitation at 0.05 level of significance except occupation which was significant at 0.05 level of significance.

Findings related to relationship between knowledge and practice score of MI patients regarding cardiac rehabilitation

There was moderate positive correlation (0.51) was established between level of knowledge and practice score of MI patient regarding cardiac rehabilitation. Further, computed coefficient i.e., 't' value (0.92) was found to be higher than the table value (0.21) at 82 df at 0.05 level of significance. So, there was statistical significant relationship between knowledge score and practice score of MI patient regarding cardiac rehabilitation.

Findings related to relationship between knowledge and practice score of care giver of MI patients regarding cardiac rehabilitation

There was positive correlation (0.44) was established between level of knowledge and practice score of care giver of MI patient regarding cardiac rehabilitation. Further, computed coefficient i.e., 't' value (6.8) was found to be higher than the table value (0.21) at 82 df at 0.05 level of significance. So, there was statistical significant relationship between knowledge score and practice score of care giver of MI patient regarding cardiac rehabilitation.

Discussion in relation to other studies

In this section the major findings of the study has been discussed in reference to the result obtained by other investigation.

Discussion related to assessment of knowledge of MI patients regarding cardiac rehabilitation

Mrs. Biji I B, Mrs. Sreelakshmy U R(2021) conducted a study among 115 MI patients result found that 53% participants had average knowledge regarding cardiac rehabilitation. There was significant association between knowledge score with previous information regarding cardiac rehabilitation at $p<0.05$.17

Dr. Rosy Shrestha, Jaya Prasad singh *et al*. (2020) conducted a descriptive study on cardiac rehabilitation knowledge among coronary artery disease patients among 85 respondents result found that 52.9% poor knowledge regarding cardiac rehabilitation [23].

Shubham Tailor and Shubhangi Borude (2019) conducted a descriptive study on cardiac rehabilitation knowledge, attitude and self- reported practice among post CABG patients among 60 respondents result found that 85% post CABG patient had average knowledge regarding cardiac rehabilitation [32].

Kurane SC, Dani P, Kurane C (2016). The studied on Knowledge and practices regarding cardiac rehabilitation among patients in selected hospitals in a view to develop video assisted educational module among 100 patients. This study was found that the patients 38% had average Knowledge score, good Knowledge score had 34% and 28% remaining had excellent Knowledge score. Total mean Knowledge score 12.39%. 83.5% knowledge had diet, 76% had knowledge about precaution, 65.5%

Bhingardive V, vikranth, sivabalan T. (2016) effectiveness of information booklet on knowledge, attitude and practice on cardiac rehabilitation among 30 myocardial infraction patients. This study found that 40% average knowledge, 74% good knowledge [41].

Discussion related to assessment of practice of MI patients regarding cardiac rehabilitation

Shubham Tailor and Shubhangi Borude (2019) conducted a descriptive study on cardiac rehabilitation knowledge, attitude and self- reported practice among post

Kurane SC, Dani P, Kurane C (2016). The studied on Knowledge and practices regarding cardiac rehabilitation among patients in selected hospitals in a view to develop video assisted educational module among 100 patients. This study was found that the in the patients 71% had good practice score, 5% had average practice score and remaining 24% had excellent practice score. Total mean practice score 7.43% [43].

Discussion related to the correlation between knowledge score with practice score on cardiac rehabilitation

Mrs. Biji I B, Mrs. Sreelakshmy U R (2021) conducted a study among 115 MI patients result found that there is positive correlation (r=0.325) between knowledge and attitude regarding cardiac rehabilitation, significant $p<0.05$ [17].

Kurane SC, Dani P, Kurane C (2016). The studied on Knowledge and practices regarding cardiac rehabilitation among patients in selected hospitals in a view to develop video assisted educational module among 100 patients. This study was found that there was high degree positive correlation between the knowledge and practice regarding

Bhingardive V, vikranth, sivabalan T. (2016) effectiveness of information booklet on knowledge, attitude and practice on cardiac rehabilitation among 30 myocardial infraction patients. This study found that 40% average knowledge, 74% good knowledge. Association between knowledge with demographic variable age (2=16.75) at $p<0.05$ level [41].

Discussion related to the association between knowledge score with demographic variables on cardiac rehabilitation

Shubham Tailor and Shubhangi Borude (2019) conducted a descriptive study on cardiac rehabilitation knowledge, attitude and self- reported practice among post CABG patients among 60 respondents result found that there were no association between knowledge, self-reported practice with demographic variables [32].

Lal MM, Lal KR (2019). A study to assess the effectiveness of structured technique programme of knowledge and practice regarding self-care activities among the clients with Myocardial Infarction. The result was the pre- test chi-square was 0.025 and post-test was 0.03 and it was association of knowledge with education. For the practice in the pre test was 0.02 significant and in the post test was 0.01 significant [33].

R Mathew, Senthikumar (2014) conducted a descriptive study on cardiac rehabilitation knowledge, attitude and the result found that there was found association between age, educational qualification and economic status with knowledge. [54]

Conclusion

The findings indicate that the MI patients are average knowledge and their care giver having good knowledge regarding cardiac rehabilitation. There was no significant association between knowledge score of MI patient and selected demographic variables, i.e. age, gender, occupation, family income, dependency level of patient, type of family except educational status, area of residence, duration of illness there was significant association at 0.05 level of significant. There was no significant association between knowledge score of care giver of MI patients regarding cardiac rehabilitation and selected demographic variables, i.e., age, gender, education, occupation, relationship with patient, history of MI in other family member, previous knowledge about caring of patient with MI, sources of knowledge.

There was also average practice score of MI patient and their care giver regarding cardiac rehabilitation. There was poor level of practice in the area of life style modification of MI patient. There was statistically significant relationship between knowledge score and practice score of MI patient regarding cardiac rehabilitation. There was statistically significant relationship between knowledge score and practice score of care giver of MI patient regarding cardiac rehabilitation.

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