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The Effectiveness of Cardiac Rehabilitation Education among Patients with Myocardial Infarction

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Abstract

Introduction: Myocardial infarction is a prevalent form of cardiac disease that has a significant negative influence on an individual's and family's overall quality of life as well as their health. Because to poor eating habits, smoking, and tobacco chewing, the prevalence of myocardial infarction is disproportionately high in rural populations.

Materials and Methods: This study utilised an experimental research design with one group, a pre-test, and a post-test, and it was carried out on patients who had suffered a myocardial infarction. A total of sixty samples were chosen using the technique of purposeful sampling. Before the data collecting began, authorization from the ethical committee was acquired. Following the acquisition of permission from the environment, the participants were questioned regarding their willingness to take part in the study, and informed consent was collected from each participant. Data on socio-demographic characteristics were gathered, and a questionnaire testing participants' knowledge of cardiac rehabilitation was distributed. After administering health education on cardiac rehabilitation to every one of the selected samples, a post test was then carried out.

Result: showed that the mean before the test was 6.51 and the standard deviation was 3.61, whereas the mean after the test was 15.11 and the standard deviation was 1.72. The computed t value was 19.559, which was statistically significant at the level of p 0.0001.

Conclusion: In light of these findings, it is clear that educational interventions are necessary for cardiac rehabilitation programmes if they are to satisfy patients' maximum potential for good health.

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1. Introduction

The bulk of deaths from cardiovascular disease (CVD) occur in nations with low to middle incomes. CVD is the main cause of death in countries all over the world. There has been a rise in risk factors for cardiovascular disease (CVD) due to the growing prevalence of unhealthy lifestyles and urbanisation. [1] According to the World Health Organization (WHO), cardiovascular disease is expected to be the cause of more than 23 million deaths worldwide in the year 2030. [2] Coronary artery disease, also known as CAD, is a leading cause of death and disability in developed countries. [3] Infarction of the heart, also known as a myocardial infarction, is a common kind of heart illness that has a significant negative influence on an individual's and family's overall quality of life. Because to poor eating habits, smoking, and tobacco chewing, the prevalence of myocardial infarction is disproportionately high in rural populations. [4] According to a research published by the American Heart Association, myocardial infarction was the cause of mortality for around 6.3 million people over the world. Infection of the myocardium is the greatest cause of death in the industrialised western world, accounting for around 40.6% of all deaths. [5] The cardiac rehabilitation [CR] is an effective strategy in the care of patients who have coronary artery disease and in lowering the cardio vascular mortality rate. Patients who have suffered a myocardial infarction are unable to satisfy their optimum health needs because there is a lack of understanding regarding cardiac rehabilitation (CR). [6] Cardiac rehabilitation (CR) programmes primarily offer education and counselling services to heart patients in order to assist them in reducing cardiac symptoms, increasing their physical fitness, improving their health, and lowering their risk of future heart problems, including heart attacks. [7]Patient education is a plan that is commonly utilised to develop understanding and improve overall lifestyle among patients with cardiac illnesses. It also involves the transmission of information to improve patients' health condition. [8] Because of this, having knowledge about CR among individuals who have had a myocardial infarction should be regarded as extremely important when judging the efficacy of an instructional programme. This topic has only been the subject of a limited number of studies; hence, the purpose of this investigation is to determine whether or not teaching regarding CR is useful for individuals who have suffered a myocardial infarction.

2. Material and Methods

The research strategy used in this study was experimental, one group pre test post test, and it was carried out on patients who had had a myocardial infarction. A total of 60 patients who had suffered a myocardial infarction were chosen using the technique of purposeful sampling. The patients who were diagnosed with myocardial infarction and were admitted to the ward were the ones whose samples were used in this study. Additionally, those patients had to be willing to take part in the research in order to meet the inclusion criteria. Patients who are undergoing cardiac rehabilitation, patients who are scheduled to have surgical procedures such as coronary artery bypass graft, and patients who are in a life-threatening condition were not allowed to participate in the study. Before the data collecting began, authorization from the ethical committee was acquired. Following the acquisition of permission from the environment, the participants were questioned regarding their willingness to take part in the study, and informed consent was collected from

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each participant. Data on socio-demographic characteristics were gathered, and a questionnaire testing participants' knowledge of cardiac rehabilitation was distributed. After administering health education on cardiac rehabilitation to every one of the selected samples, a post test was then carried out.

Statistical Analysis: The statistical test known as the paired t test and the chi square test were carried out in order to determine whether or not there was an association between a person's knowledge score and other socio-demographic factors.

3. Results

Description of sample characteristics:

The information that is shown in table no. 1 reveals that The distribution of the sample according to age reveals that the bulk of the sample, consisting of 50% of the sample, is between the ages of 41 and 60 years old, and that 47% of the sample is in an age group that is over 60 years old. The gender breakdown of the sample shows that there are 83% males and 17% females in the group. The percentage distribution of patients in terms of educational qualification reveals that 53% of patients have completed primary school, while 25% have completed higher secondary school. Concerning Occupation, 63% are owners of their own businesses, whereas 23% are shift employees. In terms of the monthly income of the household, 43% falls between the range of Rs. 5001 and 10000, while 28% falls between Rs. 10001 and 15000. In terms of diet pattern, approximately 62% do not follow a vegetarian diet, while 38% do.

Table.1: Frequency and percentage distribution of samples according to theirsocio-demographic variables.

Demographic Variables		**Frequency**	**percentage**
Age	18-30	0	0%
	31-40	2	3%
	41-60	30	50%
	Above 60	28	47%
Gender	Male	50	83%
	Female	10	17%
Education	Primary school	32	53%
	Higher sec school	15	25%
	Undergraduate	12	20%
	Post graduate	1	2%
Occupation	Shift worker	14	23%
	Business	38	63%
	Farmer	4	7%
	Officer	4	7%
Income	<5000 Rs	10	17%
	5001-10000 Rs	26	43%
	10001-15000 Rs	17	28%
	Above15000 Rs	7	12%
Diet	Vegetarian	23	38%
	Non vegetarian	37	62%

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Table.2: Score Interpretation pre test and post test of Findings of knowledge regarding cardiac rehabilitation

Grades	Score	Pre test		Post test	
		Frequency	Percentage	Frequency	Percentage
Poor	1-6	33	55%	0	0%
Average	7-13	25	42%	9	15%
Good	14-18	2	3%	51	85%

Knowledge score among patients diagnosed with myocardial infarction in relation to cardiac rehabilitation: The information shown in table no.2 demonstrates that prior to the test, the majority of the samples, 55%, had low knowledge, 42% had moderate knowledge, and 3% had strong knowledge. On the other hand, after taking the post-test, knowledge had increased, and 85 percent of people had a good understanding of cardiac rehabilitation.

Table no. 3 Findings related to effectiveness of education in terms of comparison of pre interventional and post interventional scores

Phase	Mean	SD	Mean difference	df	Paired t test	P Value
Pretest	6.51	3.61	8.600	59	19.559	<0.0001
Posttest	15.11	1.72				

4. Effectiveness of Education on Cardiac Rehabilitation

The data that is presented in a table no.3 shows that the pretest mean was 6.51 and the standard deviation was 3.61, and the posttest mean was 15.11 and the standard deviation was 1.72. The calculated t value was 19.559, which was statistically significant at the level of p0.0001.

Table no. 4: Association between Pre test knowledge score and socio-demographic variables

Demographic Variables		Knowledge score			Chi-square Value	P value	Result
Age		Poor	Average	good			
	18-30	0	0	0	2.948	0.5666	Not Significant
	31-40	1	0	1			
	41-60	19	10	1			
	Above 60	13	15	0			
Gender					4.076	0.1303	Not significant
	male	30	18	2			

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	female	3	7	0			
Education							
	Primary school	18	12	2			Not significant
	Higher sec school	8	7	0	3.029	0.8051	
	undergraduate	6	6	0			
	Post graduate	1	0	0			
Occupation							
	Shift worker	6	7	1			Not Significant
	Business	25	13	0	12.00	0.0619	
	Farmer	1	2	1			
	Officer	1	3	0			
	laborer	0	0	0			
	unemployed	0	0	0			
Income							
	<5000	7	2	1			
	5001-10000	17	8	1	9.109	0.1675	Not significant
	10001-15000	7	10	0			
	Above15000	2	5	0			
Diet							
	Vegetarian	14	8	1	0.773	0.6794	Not significant
	Non vegetarian	19	17	1			

*Not Significant (NS) (at $p<0.05$ level)

According to the findings that were compiled and given in table no. 4, there was not a statistically significant correlation between the pre-test score on the knowledge component and the socio-demographic factors that were studied.

5. Discussion

The findings of the current study, which focused on patient education regarding CR, indicated that there was a significant improvement in patients' overall knowledge scores. It is possible to highlight the research carried out by Ghisi GLM et al. as an example of another study that demonstrated a considerable increase in the amount of information known about CR. This demonstrates that there was a substantial increase in knowledge from pre- to post-CR in the total group (P less than 0.001) In terms of getting enough exercise, the number of steps that people take on average per day has increased significantly over the years (P less than 0.001). There were statistically significant alterations in the scores taken over time with reference to the amount of food consumed (P less than 0.001). Additionally, there was a statistically significant rise in the ratings of exercise self-efficacy over the course of the study (P 0.001). [9]

The current study had participants ranging in age from 41 to 60 years old for a majority (50%) of the sample, with participants aged 60 and older making up 47% of the sample. The gender breakdown of the sample shows that there are 83% males and 17% females in the group. The percentage distribution of patients in terms of educational qualification reveals that 53% of patients have completed primary

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school, while 25% have completed higher secondary school. Concerning Occupation, 63% are owners of their own businesses, whereas 23% are shift employees. In terms of the monthly income of the household, 43% falls between the range of Rs. 5001 and 10000, while 28% falls between Rs. 10001 and 15000. Diet pattern Around 62% do not follow a vegetarian diet, while 38% adhere to one.

A. According to the findings of Valarmathi et alstudy, .'s the mean score of the pre-test was 10, with a standard deviation of 3.46, and the mean score of the post-test was 16.2, with a standard deviation of 3.54. When it comes to cardiac rehabilitation, the post-test mean score for patients who have had a myocardial infarction is greater than the score they received on the pretest. According to the t' value, which is 12.074, this result is statistically significant at the 0.05 level. As a result, the conclusion that knowledge and practise are mutually dependent might be drawn. Posttest levels of knowledge about cardiac rehabilitation among individuals who had a myocardial infarction were significantly associated with each other. [10]

According to the results of the pre-test for this particular study, the majority of the samples (55%) had poor knowledge, while 42% had moderate knowledge, and only 3% had strong knowledge. On the other hand, after the exam, knowledge had increased, and 85% of people showed that they had a good understanding of cardiac rehabilitation.

Cardiac rehabilitation is feasible and effective to enhance health in patients who have undergone myocardial infarction, according to a study that was conducted by Kunjan K and his colleagues. It was discovered that there was a significant difference in the mean CADE-Q SV scores before (9.1 3.3) and after (14.1 4.2) intervention in the intervention group (P 0.01); however, there was no difference in the group that received conventional routine treatment. [11] Study on Education Intervention among Cardiac Rehabilitation Patients, conducted by Gabriela Lima de Melo Ghisi and colleagues, reveals that there was a substantial improvement in patients' general knowledge when tested after receiving the intervention (P 0.05). [12]

6. Conclusion

According to the findings of the current study, patients who have suffered a myocardial infarction have a limited understanding of cardiac rehabilitation. After receiving education, our knowledge regarding cardiac rehabilitation was improved. These findings demonstrate that educational interventions are necessary for cardiac rehabilitation programmes in order to provide the highest possible level of medical care.

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