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Research Article

EFFECTIVENESS OF SELF INSTRUCTIONAL MODULE (SIM) ON KNOWLEDGE REGARDING CARDIAC REHABILITATION OF MYOCARDIAL INFARCTION PATIENT AMONG STAFF NURSES WORKING IN CARDIAC ICU AT SELECTED HOSPITALS, KOLHAPUR

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ABSTRACT

Background of the Study: India has a large population of Coronary Artery Disease patients. This gives the scenario for effective cardiac rehabilitation and improved health care delivery to such patients. Cardiac Rehabilitation is widely practiced all over the world as secondary prevention, for health promotion and rehabilitation as well. But the concept has not gained full acceptance in India. Cardiac rehabilitation is a professionally supervised program to help people recover from heart attacks, heart surgery and percutaneous coronary intervention procedures such as stenting, angioplasty and CABG. Cardiac rehabilitation programs usually provide education and counseling services to help heart patients increase physical fitness, reduce cardiac symptoms, improve health and reduce the risk of future heart problems, including heart attack.

“A pre experimental study to evaluate the effectiveness of Self Instructional Module (SIM) on knowledge regarding cardiac rehabilitation of myocardial infarction patient among staff nurses working in cardiac ICU at selected Hospitals, Kolhapur.” was conducted by the researcher.

Objectives

1. To evaluate the effectiveness of SIM on knowledge regarding cardiac rehabilitation of myocardial infarction patient among staff nurses.
2. To determine the association between pre-test knowledge scores with their selected socio-demographic variables of staff nurses.

Methods: A pre experimental, one group pre test & post test research design was used, which consisted a group of 60 subjects that were selected by using non-probability, purposive sampling technique. Data was collected by using tool 1) Part A- socio demographic data 2) Part B- Structured knowledge questionnaire regarding cardiac rehabilitation of myocardial infarction patient. A self instructional module (SIM) was administered to the subjects soon after pre test and post test was conducted after 7 days.

Results: The result shows that, out of 60 staff nurses, In pre test majority of the subjects 35(58.33%) had average knowledge, 17(28.33%) had good knowledge and 8(13.33%) had poor knowledge, where as in post test 33(55%) subjects had good knowledge, 27(45%) had average knowledge and none of the subjects had poor knowledge.

The calculated paired ‘t’ value ($t_{cal} = 10.15$) is greater than tabulated value ($t_{tab} = 2.00$). Hence H_1 was accepted. This indicates that the gain in knowledge score is statistically significant at $P < 0.05$ level. i.e. $H_1: \mu \neq \mu_0$. Therefore the findings revealed that the SIM on cardiac rehabilitation for myocardial infarction patient was effective in increasing the knowledge regarding cardiac rehabilitation of myocardial infarction among staff nurses.

In the present study, association between pre test knowledge scores of staff nurses regarding cardiac rehabilitation of myocardial infarction patient with selected socio demographic variables are analyzed and categorized. Age of the staff nurses was significantly associated in the present study [$\chi^2_{cal} = 10.68$, $\chi^2_{tab} = 9.49$]. As nursing is a female dominating profession, in this study the female nurses are more as compared to male nurses, hence in present study, gender [$\chi^2_{cal} = 29.48$, $\chi^2_{tab} = 3.84$] is statistically associated with pre test knowledge scores. Total experience of staff nurse also was significantly associated in the present study [$\chi^2_{cal} = 23.46$, $\chi^2_{tab} = 5.99$]. This proves that, the more experienced staff nurse are, the more knowledge on cardiac rehabilitation of myocardial infarction patient they possess.

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INTRODUCTION

“Building a better life after heart disease”

The ischemic heart disease is the major cause of death and generates the greatest number of hospitalizations with

increasing health care expenses; therefore management of ischemic heart disease should receive high priority. Along with the fear of recurrence of a heart attack, survivors of myocardial infarction can experience physical, psychological, and social difficulties owing to the numerous restrictions in their usual

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daily routine. Some limitations may be imposed on doing housework, climbing stairs and shopping. A variety of rehabilitation strategies are used to cope with these restrictions which include symptom management, medication information, lifestyle changes, psychological factors and physical activity.

Cardiac rehabilitation aims to reverse limitations experienced by patients who have suffered the adverse path physiologic and psychological consequences of cardiac events. Cardiac rehabilitation is a medically supervised program that helps improve the health and well-being of people who have heart problems. Rehabilitation programs include exercise training, education on heart healthy living, and counseling to reduce stress and help you return to an active life.

Cardiac rehabilitation is a professionally supervised program to help people recover from heart attacks, heart surgery and percutaneous coronary intervention procedures such as stenting, angioplasty and CABG. Cardiac rehabilitation programs usually provide education and counseling services to help heart patients increase physical fitness, reduce cardiac symptoms, improve health and reduce the risk of future heart problems, including heart attack.

Programs often include a medical evaluation to figure out patient's needs and limitations. The medical staff uses this information to tailor a rehabilitation program for the client and help him to set goals. A physical activity program tailored to patient's needs. Training often starts in a group setting where his heart rate and blood pressure are monitored during physical activity. He may work with a physical therapist, exercise physiologist or other healthcare professional. He learns how to check his heart rate and his level (intensity) of activity. Later, he work up to more intense aerobic activity on a treadmill or exercise bike.

Counseling and education to help the patient understand his condition and how to manage it. He may work with a dietitian to create a healthy eating plan. If he smokes, he may get counseling on how to stop. Counseling may also help him cope with depression, anger and stress during his recovery. Support and training to help him return to work or his normal activities and to help the client learn to manage his heart condition.

It is the responsibility of the cardiac rehabilitation nurse to care for patients recuperating from their cardiac diseases. Working together with a nurse supervisor, a cardiac rehabilitation nurse specifically carries out a care plan for the patients, counsels about rehabilitation strategies, evaluates the progress of the patients, and educates them and their loved ones about the treatment and rehabilitation strategies to be continued at home, including a diet and exercise regimen.

Objectives of the Study

1. To evaluate the effectiveness of self-instructional module on knowledge regarding cardiac rehabilitation of myocardial infarction patient among staff nurses.
2. To find out the association between the pre-test knowledge scores of cardiac rehabilitation of myocardial infarction patient with their selected socio demographic variables of staff nurses.

MATERIALS AND METHODS

The population of this study was staff nurses working in cardiac ICUs of selected hospitals, Kolhapur. A quantitative, evaluative survey research approach was considered to carry out the study. Preexperimental, one group pre test post test research design selected for this study. Non probability, purposive sampling technique was used to select 60 subjects for the present study. The data was collected by using selected socio demographic data and structured knowledge questionnaire on cardiac rehabilitation for myocardial infarction patient. A Self instructional module (SIM) was administered to the subjects soon after pretest and post test was conducted 7 days after administration of SIM.

Inclusion criteria

Staff nurses who were,

1. Working in cardiac ICU of selected Hospitals, Kolhapur.
2. Both male and female

Exclusion criteria

Staff nurses who were,

1. Not present at the time of data collection.
2. Not willing to participate in the study.

Duration

The data collection period extended from 07/02/2017 up to 18/2/2017.

Procedures for Data Collection

The researcher with the help of guide selected the hospitals which fulfilled the inclusive criteria and also who were having cardiac ICUs. The hospitals were selected randomly by using lottery method for the main study those were Aster adhar hospital, Sai cardiac center and Diamond hospital, Kolhapur. The research investigator obtained the formal permission from the authorities of the selected hospital, Kolhapur.

The main study was conducted at cardiac ICU of selected hospitals, Kolhapur from the 07/02/2017 up to 18/2/2017. Planning of the time schedule as per the timings of activities in selected hospitals was done. Researcher selected 69 subjects in pretest to avoid drop out in post test only 60 subjects were considered finally.

Researcher introduced himself to the subjects and explained the purpose and objectives of the study. Subjects were taken into confidence and assured of confidentiality of their responses. Inform consent was taken from the subjects. The subjects were selected from selected hospitals by using Non-probability, purposive sampling technique and those who were fulfilling criteria. Researcher selected 69 subjects from target population. The 69 subjects were selected in pre test to avoid drop out bias during post test. Out of 69 subjects, 64 subjects were present for the post test. And from 64 subjects first 60 were taken for the study.

The tool 1) Part A- Selected sociodemographic data, 2) Part B- Structured knowledge questionnaire was administered to assess

the knowledge regarding cardiac rehabilitation for myocardial infarction patient among subjects.

FINDINGS AND DISCUSSION

The data was entered in a master sheet for tabulation and statistical processing. Analysis of data is organized and presented under the following heading:

Section I: Findings related to distribution of socio-demographic data of subjects.

Section II: Findings related to distribution of pre test and post test knowledge scores of subjects regarding cardiac rehabilitation of myocardial infarction patient.

Section III: Findings related to mean, median, mode, range & standard deviation of pre and post knowledge scores of subjects regarding cardiac rehabilitation of myocardial infarction patient.

Section IV: Testing of hypothesis to find out an effectiveness of self instructional module (SIM) on cardiac rehabilitation of myocardial infarction patient among subjects.

Section V: Testing of hypothesis to find out an association between pre-test knowledge scores with the selected socio-demographic variables of subjects.

Section I: Findings Related To Distribution of Selected Socio Demographic Data of the Subjects

In this section the researcher analyzed and categorized the subjects of the study to various groups based on the selected socio demographic data.

Table 1 Frequency and percentage distribution of the subjects according to their selected socio demographic variables

n=60

Sr.No	Variables	Frequency <i>f</i>	Percentage %
1	Age in years		
	a. 24-27	36	60.00
	b. 28-31	20	33.33
2	Gender		
	a. Male	18	30
	b. Female	42	70
3	Professional education qualification		
	a. GNM	26	43.33
	b. PBBS	12	20.00
4	Total years of clinical experience		
	a. 0-3	32	53.33
	b. 4-6	24	40.00
5	Total years of clinical experience in present working area		
	a. 0-3	47	78.33
	b. 4-6	13	21.66
6	In service education regarding cardiac rehabilitation		
	a. Yes	13	21.66
	b. No	47	78.33

Table 1: Indicates that,

- Majority of the subjects 36 (60%) belonged to the age group of 24-27 years, and while minimum only 4 (6.66%) belonged to the age group of 32-35 years.

- Majority of the subjects 42 (72%) were female, and 18 (30%) were male
- Majority of the subjects 26 (43.33%) had GNM qualification, while 22 (36.66%) had B.Sc Nursing qualification and minimum 12 (20%) had P.B.B.Sc Nursing qualification.
- Majority of the subjects 32(53.33%) had 0-3 year of total clinical experience, 24(40%) subjects had 4-6 years of experience and while minimum 4(6.66%) subjects had 7-9 years of clinical experience.
- Majority of the subjects 47(78.33%) had 0-3 years of total clinical experience in present working area and 13(21.66%) had 4-6 years of total clinical experience in present working area.
- Majority of the subjects 47(78.33%) had not attended any in-service education regarding cardiac rehabilitation for myocardial infarction patient. While minimum 13(21.66) had in-service education.

Section II: Findings Related to Distribution of Pre And Post Test Knowledge Scores of Subjects Regarding Cardiac Rehabilitation of Myocardial Infarction Patient

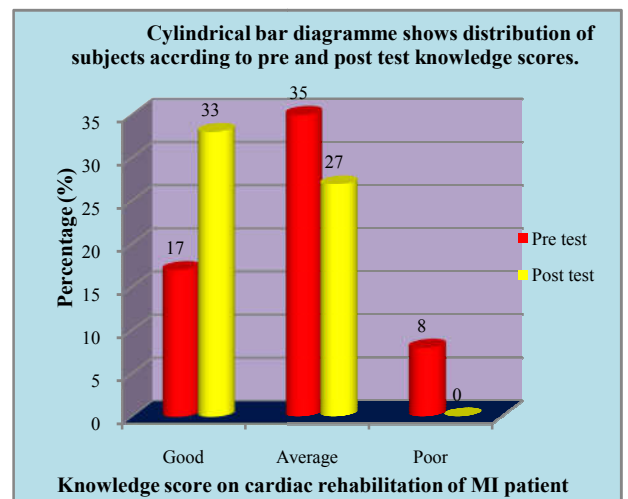
In this section the researcher analyzed and categorized the pre test and post test knowledge scores of staff nurses regarding cardiac rehabilitation of myocardial infarction patient.

Table 2 Frequency and percentage distribution of pre test and post test knowledge scores of subjects regarding cardiac rehabilitation of MI patient
n=60

Knowledge score	Pre test		Post test	
	Frequency <i>f</i>	Percentage %	Frequency <i>f</i>	Percentage %
Good 21-30	17	28.33	33	55
Average 11-20	35	58.33	27	45
Poor 0-10	08	13.33	00	00

Table 2: Indicates that,

In pre test majority of the subjects 35(58.33%) had average knowledge, 17(28.33%) had good knowledge and 8(13.33%) had poor knowledge, where as in post test 33(55%) subjects had good knowledge, 27(45%) had average knowledge and none of the subjects had poor knowledge



Section III: Findings Related To Mean, Median, Mode, Range and Standard Deviation of Pre Test and Post Test Knowledge Scores of Subjects Regarding Cardiac Rehabilitation of Myocardial Infarction Patient

In this section the researcher analyzed and categorized the mean, median, mode, range and standard deviation of pre test and post test knowledge scores of staff nurses regarding cardiac rehabilitation of myocardial infarction patient

Table 3 Mean, Median, Mode, Range and standard deviation of knowledge scores on cardiac rehabilitation of myocardial infarction patient among subjects regarding effectiveness of self instructional module

Area of analysis	Mean	Median	Mode	SD	Range
Pre test	17.48	18.5	20.54	4.51	16
Post test	21.45	22.5	24.6	3.27	12
Difference	3.93	4	4.06	-1.24	-04

n=60

Table 3: Indicates that,

- The overall knowledge scores of subjects was increased by mean difference 3.93 units and median difference was 4 where as mode difference was 4.06.
- The variability around the mean of knowledge score distribution was 1.24.
- The range between the highest and lowest score was increased by 4 units after administering the SIM.

Testing of Hypotheses

H₁ - The mean post-test knowledge scores of staff nurses regarding cardiac rehabilitation of myocardial infarction patient is significantly higher than their mean pre test knowledge score.

Section IV: Testing of Hypotheses to Find Out an Effectiveness of Sim on Cardiac Rehabilitation of Myocardial Infarction Patient among Subjects

In this section the researcher analyzed and categorized the mean difference, standard error difference and paired ‘t’ values of knowledge scores of staff nurses regarding cardiac rehabilitation of myocardial infarction among staff nurses.

Table 4 Effectiveness of SIM on knowledge regarding cardiac rehabilitation of myocardial infarction patient among subjects

n=60

Mean difference	Standard error difference	Paired ‘t’ value		df
		Calculated	Tabulated	
3.93	0.39	10.15*	2.00	59

*P< 0.05

Table 4: Indicates that,

- The calculated paired ‘t’ value ($t_{cal} = 10.15$) is greater than tabulated
 - value ($t_{tab} = 2.00$). Hence **H₁** was accepted. This indicates that the gain in
 - knowledge score was statistically significant at $P<0.05$ level.
- Therefore the findings revealed that the self instructional module (SIM) on cardiac rehabilitation

for myocardial infarction patient was effective in increasing the knowledge of subjects.

H₂ - There is an association between the pre-test knowledge scores of staff nurses regarding cardiac rehabilitation of myocardial infarction patient with their selected socio demographic variables.

Section V: Testing of Hypotheses to Find Out An Association Between Pre-Test Knowledge Scores With Their Selected Socio-Demographic Variables

In this section the researcher analyzed and categorized the association between pre test knowledge scores of staff nurses regarding cardiac rehabilitation of myocardial infarction patient with their selected socio-demographic variables.

Table 5 Association between pre-test knowledge scores with their selected socio demographic variables

n=60

Sr.no	variables	Scores			Chi-square values		df
		Good	Average	Poor	Calculated	Tabulated	
1	Age				10.68*	9.49	4
	a. 24-27	15	19	02			
	b. 28-31	03	11	06			
2	Gender				29.48*	5.99	2
	a. Male	03	12	03			
	b. Female	15	22	05			
3	Professional education qualification				5.69	9.49	4
	a. GNM	06	14	06			
	b. PBBsc	03	07	02			
4	Total years of clinical experience				6.49	9.49	4
	a. 0-3	12	18	02			
	b. 4-6	04	14	06			
5	Total years of clinical experience in present working area				6.71*	5.99	2
	a. 0-3	13	26	08			
	b. 4-6	04	09	00			
6	In service education regarding cardiac rehabilitation				0.142	5.99	2
	a. Yes	04	07	02			
	b. No	13	28	06			

Note: * indicates significance

Table 5: Indicates that,

There was significant association between pre test knowledge scores and selected socio-demographic variables like Age [$X^2_{cal} = 10.68, X^2_{tab} = 9.49$], gender [$X^2_{cal} = 29.48, X^2_{tab} = 5.99$], total years of clinical experience in present working area [$X^2_{cal} = 6.71, X^2_{tab} = 5.99$]. The calculated Chi-square values were higher than tabulated value at 0.05 level of significance. Among six selected socio demographic variables age, gender and total years of experience in present working area shows association so **H₂** was accepted. This indicates that there was significant association.

CONCLUSION

Based on the findings of the study, the following conclusions were drawn:

- The knowledge results revealed that the calculated paired ‘t’ value ($t_{cal} = 10.15$) was greater than tabulated value ($t_{tab} = 2.00$). This indicates that the gain in knowledge score was statistically significant at $P<0.05$

level. Therefore the findings revealed that the SIM on cardiac rehabilitation of myocardial infarction patient was effective in increasing the knowledge regarding cardiac rehabilitation among staff nurses.

2. Study revealed that self instructional module was very effective in order to gain knowledge of cardiac rehabilitation for myocardial infarction patient among staff nurses.
3. There was significant association between pre test knowledge scores with their selected socio demographic variables like age [$X^2_{cal}= 10.68, X^2_{tab}= 9.49$] gender [$X^2_{cal}= 29.48, X^2_{tab}= 5.99$], total clinical experience as a nurse (in years) [$X^2_{cal}= 6.71, X^2_{tab}= 5.99$]. The calculated Chi-square values were higher than tabulated value at 0.05 level of significance. This indicates that there is significant association between pre test knowledge scores and selected socio demographic variables at 0.05 level of significance. Hence both H_1 and H_2 was accepted.

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Conflict of Interest

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