

Efficacy of an Information Booklet on Knowledge Regarding Cardiac Rehabilitation among Clients with Coronary Artery Disease

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Abstract: With a drastic transition in the socio – economic and lifestyle scenario, A difficulty to cope up with the lifestyle changes occurring after such episodes accounts for educational intervention. Cardiac rehabilitation is an important management strategy in patients with coronary artery disease. Cardiac rehabilitation program provides an excellent opportunity to begin an exercise program, learn about heart disease, and learn strategies to change the lifestyle to prevent further progression of the disease. **Methods:** With an evaluatory approach, the researcher conducted the study in a selected Cardiac Hospital of Maharashtra among 50 clients who gave consent for the study and were selected through Non probability convenient sampling technique. A self administered structured knowledge questionnaire and an information booklet are used as tools. **Results:** To find the effectiveness of information booklet ‘z’ test was applied and ‘z’ value was calculated, the mean post test score were significantly higher than their mean pre test score as evidenced from structured knowledge test ‘p’ <0.05 level of significance. The findings of the study also shows the mean percentage of pre test knowledge score was 41.2% and post test knowledge score was 73.4%. The mean percentage gain from pre test to post test was 32.2%. **Conclusion:** The investigator concludes that the knowledge of the target population was significantly improved after receiving information in the form of Information Booklet regarding cardiac rehabilitation. The improvement in knowledge was found in all subjects irrespective of their demographic characteristics.

Keywords: Cardiac rehabilitation, Information booklet, effectiveness, Knowledge

1. Introduction

Learning is the addition of new knowledge and experience Interpreted in the light of past knowledge and experience. Teaching and learning is an integral part of nursing. Nurses have the responsibility to educate patients related to various aspects and keep themselves updated. Various teaching strategies are used to increase knowledge, such as lecturing, demonstration, discussion and self-education. These methods of self-education has an advantage over the others as the learner can educate himself at his own pace and it also stresses on rereading [1]

Heart diseases are the leading cause of premature morbidity and mortality. Acute coronary syndromes are responsible for more than 250,000 deaths annually and result from a progressive atherosclerotic process that culminates in rupture of atherosclerotic plaques and thrombus formation [2].

According to WHO (Updated March 2013) Cardio vascular diseases (CVDs) are the number one cause of death globally: more people die annually from CVDs than from any other cause. An estimated 17.3 million people died from CVDs in 2008, representing 30% of all global deaths. Of these deaths, an estimated 7.3 million were due to coronary heart disease. The number of people, who die from CVDs, mainly from heart disease, will increase to reach 23.3 million by 2030. CVDs are projected to remain the single leading cause of death and in this 45% of deaths due to coronary heart disease [3].

Cardiac rehabilitation is a comprehensive programme that prepares the patient for a full, vital, and productive life within the limitations imposed on him by the cardiac disease. In other words, it is the process of restoring and maintaining a patient at his optimal physiological, psychological, vocational, and social status. Patient moves from a stage of complete dependence to a stage of independence in his Activities of Daily Living (ADL) [4].

Cardiac rehabilitation (CR) refers to the provision of a wide range of secondary prevention services to patients with cardiovascular disease. Although exercise training is a core component of any CR program, modern comprehensive CR programs provide a comprehensive approach to disease modification including risk factor modification, nutritional counselling, weight management and psychosocial management [5].

Cardiovascular disease is the leading cause of death in India. It has reached epidemic proportions, and needs to be addressed through primary and secondary prevention measures. The field of preventive cardiology and cardiac rehabilitation is in its nascent stages in India and these services need to expand widely for the country to effectively manage this epidemic. There are various aspects of cardiac rehabilitation, including cardiovascular disease risk factor reduction, role of exercise in reducing cardiac morbidity and mortality, and the appropriate exercise prescription for those with heart disease [6].

Kadam,A.(2014) found that Structured education programme was highly effective to improve the knowledge score and to improve the attitude score of subjects/ caregiver towards colostomy care of patient [7]. Anjum,S.(2014)conducted study to assess knowledge of contraceptives methods and appraisal of health education among married women and concluded After the health education married women knowledge was improved to 100% about female sterilization followed by condom 99%, skin implants 86%, oral pills 85% and emergency contraceptives 85%.Sociodemographic variable were significantly associated with existing knowledge and level of married women specially age at marriage, age at first child, occupation,, income ,education [8][9]. Babu, R. L. (2014) The findings of the study concluded that care takers had inadequate knowledge regarding non-curative care of terminally ill cancer patients. The planned education programme on non-curative care of terminally ill cancer patients was highly effective in improving the knowledge of care takers regarding non-curative care of terminally ill cancer patients.[10] Shinde,M.(2014) concluded that demonstration regarding feeding of hemiplegic patient among caregivers was effective in increasing the skill of the caregivers regarding feeding of hemiplegic patient [11].

2.Objectives of the Study

The objectives of the study were:

1. To assess the existing knowledge of clients with coronary artery disease regarding cardiac rehabilitation
2. To assess the knowledge regarding cardiac rehabilitation among clients with coronary artery disease after the administration of information booklet
3. To evaluate the efficacy of information booklet on knowledge of clients with Coronary Artery disease regarding cardiac rehabilitation.
4. To associate the knowledge of clients regarding cardiac rehabilitation with selected demographic variables.

Hypotheses:

H₀:- There will be no significant difference between mean pre test and post test knowledge score of the coronary artery disease clients regarding cardiac rehabilitation as evidence from the structured knowledge test at $P < 0.05$ level of significance.

H₁:- The mean post test knowledge of coronary artery disease patients regarding cardiac rehabilitation will be significantly higher than their mean pre-test knowledge score as evidence from structured knowledge test $P < 0.05$ level of significance.

3.Methodology

Research methodology involves the systematic procedure by the researcher which starts from the initial identification of programme to its final conclusion [12]

- **Research approach:** Descriptive evaluatory approach
- **Research design:** Pre experimental one group pretest and posttest design
- **Setting of the study:** Selected cardiac hospital in Maharashtra, India.

- **Sample and sample size:** The sample size for the study is 50 clients with coronary artery disease from selected hospital in Maharashtra, who were available at the time of data collection and also who fulfilled the inclusion criteria.
- **Sampling technique:** Non probability convenient sampling technique was used to select the sample.

3.1 Sampling criteria

Inclusion criteria

1. Clients who were admitted in wards and ICU's of selected hospital.
2. Clients those who were diagnosed to have CAD such as Angina pectoris or Myocardial Infarction
3. Clients who were willing to participate in the study.
4. Clients who were able to read write and understand English or Marathi.

Exclusion Criteria

1. Clients who were undergoing surgery or pacemaker insertion.
2. Clients who were critically ill and could not respond.

3.2 Data collection tool:

Self administered structured knowledge questionnaire was used.

3.3 Data collection procedure:

Formal administrative permission taken to conduct the study. An informed consent was obtained from the respondents. 50 samples were selected as per criteria. In phase I pre-test was conducted by distributing the structured knowledge questionnaire. In Phase II an information booklet regarding cardiac rehabilitation was distributed to subjects and explained how to use information booklet. Follow up visits were made to reinforce them and to read the information booklet. In Phase III, post-test was conducted on 7th day of administration of information booklet. It was conducted by administering the same structured knowledge questionnaire.

4.Results

Section I: Distribution of clients with coronary artery disease with regards to demographic variables

Table 1: Frequency and Percentage distribution of clients with CAD according to selected demographic variables, N=50

Demographic Variables	Frequency(f)	Percentage(%)
Age(ysr)		
25-35	0	0.00
36-45	8	16.0
46-55	26	52.0
56-65	16	32.0
> 65	0	0.00
Gender		
Male	29	58.0
Female	21	42.0
Educational Status		
Illiterate	0	0.00

Secondary	14	28.0
Higher Secondary	16	32.0
Graduate	17	34.0
Post Graduate	3	6.0
Occupational Status		
Labourer	0	0.00
Agriculture	4	8.0
Business	7	14.0
Service	25	50.0
Unemployed	14	28.0
Monthly Income(Rs)		
≤10000	0	0.00
10001-20000	3	6.0
20001-30000	34	68.0
≥ 30001	13	26.0
Dietary Pattern		
Vegetarian	32	64.0
Mixed Diet	18	36.0
If mixed diet how frequently do you take non-vegetarian food		
1-2 times	16	88.89
3-4 times	2	11.11
> 5 times	0	0.00
Marital Status		
Single	0	0.00
Married	45	90.0
Divorced	0	0.00
Separated	0	0.00
Widow/widower	5	10.0

It is observed from table 1 that majority of the samples were at the age group of 46-55 years (52%), most of the subjects were male (58%), most of the subjects were graduates(34%), majority of their occupation is service (50%), most of them were having a monthly income of 20001-30000 (68%), majority of subjects were vegetarian (64%) and 36% were mixed diet 1-2 times in a week and 90% of the subjects were married.

Section II

Assessment of existing knowledge of clients with coronary artery disease regarding cardiac rehabilitation

Table 2: Existing knowledge of clients with CAD regarding cardiac rehabilitation, N=50

Area	Maximum score	Pre test	
		Mean	Mean Percentage
Disease condition and manifestation	2	1.3	65%
Dietary Management	6	2.02	33.66%
Exercises	9	3.62	40.22%
Resumption of sexual activity	2	0.58	29%
Prevention of risk factors	2	0.9	45%
Medication and complications	5	2.2	44%
Follow up	4	1.74	43.5%

Findings from Table 2 shows that in pretest majority (65%) of client with CAD were having knowledge regarding Disease condition and manifestation, whereas only 45% of client with CAD were having knowledge regarding prevention of risk factors, 44% of client were having

knowledge on medication and its complications, 43.5% client were having knowledge about follow up, 40.22% clients were having knowledge on exercise, 33.66% of clients with CAD were having knowledge on dietary management and 29% of client with CAD were having knowledge on resumption of sexual activity.

Section III

Assessment of knowledge of clients with coronary artery disease regarding cardiac rehabilitation after the administration of information booklet

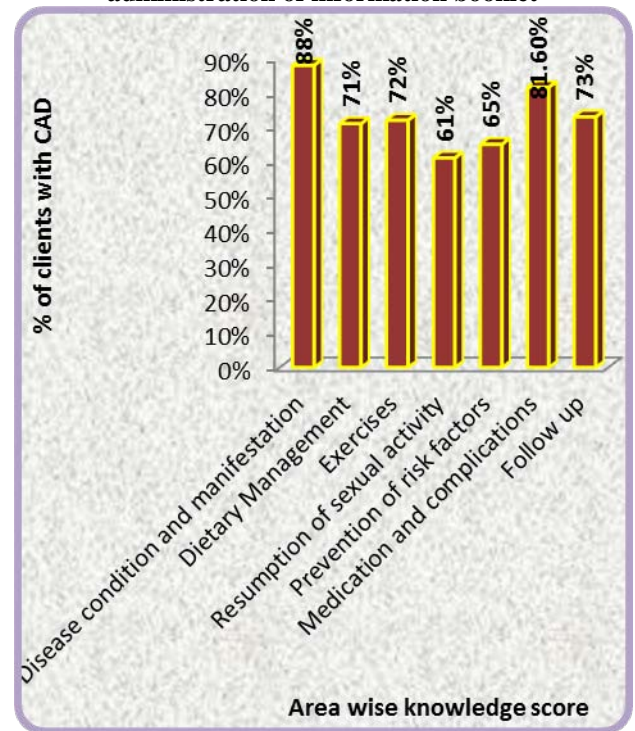


Figure 1: Knowledge of clients with CAD regarding cardiac rehabilitation after administration of information booklet

Section IV

Efficacy of information booklet on knowledge of clients with coronary artery disease regarding cardiac rehabilitation

Table 3: Overall Comparison of pre test and post test knowledge score of CAD patients regarding cardiac rehabilitation

Area	Pre test			Post test			Mean gain percentage
	Mean	Mean Percentage	SD	Mean	Mean Percentage	SD	
overall	12.36	41.20	2.06	22.02	73.40	2.60	32.2%

Data in Table no.3 depicts the comparison of pre test and post test knowledge score of CAD patients regarding cardiac rehabilitation. Mean percentage of pre test knowledge score was 41.2% and post test knowledge score was 73.4%. The mean percentage gain from pre test to post test was 32.2%.

Table 4: Comparison of pre test and post test score according to knowledge level, N=50

Level of knowledge score	Knowledge Score	
	Pre Test (%)	Post Test (%)
Poor (Upto 50%)	47(94%)	1(2%)
Good (51-75%)	3(6%)	28(56%)
Excellent (>75%)	0(0%)	21(42%)
Minimum score	9	15
Maximum score	17	27
Mean score	12.36±2.06	22.02±2.60
p-value	P<0.0001, Significant	

Table no 4 shows that in pre test 47(94%) of clients with CAD were having poor level of knowledge and 6% were having good level of knowledge score. The minimum score in pretest was 9 and the maximum score was 17, the mean score for the pretest was 12.36±2.06 whereas in post test 1(2%) of clients with CAD were having poor level of knowledge, 56% were having good level of knowledge score and 42% were having excellent level of knowledge score. The minimum score in pretest was 15 and the maximum score was 27, the mean score for the pretest was 22.02±2.60. The p- value is <0.0001, that is significant Thus the information booklet helped the client to improve their knowledge level.

5. Conclusion

After the detailed analysis, this study leads to the following conclusion:

There was a significant increase in the knowledge of subjects after the administration of information booklet. To find the effectiveness of information booklet 'z' test was applied and 'z' value was calculated, the mean post test score were significantly higher than their mean pre test score as evidenced from structured knowledge test 'p' <0.05 level of significance. Thus it was concluded that information booklet on cardiac rehabilitation was found to be effective teaching strategy.

Demographic variables did not show a major role in influencing the pre test and post test knowledge score among CAD clients. Hence, based on the above cited findings, it was concluded undoubtedly that the information booklet effectively increased the knowledge of the CAD client regarding cardiac rehabilitation.

6. Implications of the Study

The investigator has drawn the following implications from the study which is of vital concern to the field of nursing education, nursing service, nursing administration and nursing research.

1. Nursing Practice:

- The present study implies information booklet to be an effective strategy to educate the patient regarding cardiac rehabilitation.
- Learning materials of such kind can be used in hospitals and in communities for client's education.

- Copies can be distributed to the patients in hospital, wards and OPD's.
- Nurses can conduct teaching session for clients during their visits to the hospital and hospitalization which will help in improving the knowledge of clients in restoring and promoting their health.
- Nurses can counsel patients at risk for CAD on the benefits of exercise.
- Nurses can include an exercise component in health and wellness programmes for patients with CAD.
- Specialization courses in Cardiac rehabilitation to be given.
- Continuing and In service education programs can be conducted for the nurses in improving their knowledge and updating with the recent ones and they in turn can create awareness to the clients by teaching/educating.
- In collaboration with the regulation bodies, educational institutions can arrange and conduct workshops and seminars on cardiac rehabilitation as cardiovascular diseases are major cause for morbidity and mortality.
- Nurses should be stressed or emphasized on their exposure to cardiac nursing and to learn regarding the various aspects of cardiac rehabilitation which makes them well equipped with the knowledge to meet the needs of the clients.

2. Nursing Education:

- Rehabilitation is one of the major components of nursing care. Thus every nurse should be educated on cardiac rehabilitation.
- The student nurses from School of Nursing and College of Nursing should be encouraged to attend specialized courses and seminars regarding Cardiac rehabilitation.
- Indian Nursing Council and Universities should include Cardiac rehabilitation as one of the main educational aspect in the nursing curriculum.
- Student Nurses should be well exposed to areas of cardiac rehabilitation during their clinical postings which enhances their knowledge.
- Topics on Cardiac rehabilitation can be included as continuing education programmes for the student nurses.

3. Nursing Administration:

An administrator plays a key role in an organization for the staff development program. Nursing is a rapidly growing profession. In this period of growth of advanced technology, recent advances in care there is always a need and demand for quality and competent care to be provided. So, it is the main responsibility of the nursing administrative authorities to initiate, conduct and carry out education programmes in various areas of cardiac rehabilitation for the benefit of the clients.

- Nursing leaders should utilize available resources which are technologically sound in teaching the clients with coronary artery disease through mass health education programme. Nursing leaders should enhance nursing services through reinforcement of teaching through the readymade video package.
- Nurse administrators should take up leadership roles in training and providing health education programmes to nursing personnel in health care settings so that these

personnel take up active role in educating the clients by making the most use of media and audio visual aids.

- Specialized teaching package in specific topics create interest among public and serves as reference material.
- Professional interaction between the nurses and the public will help to improve professional standards and creates better image in the community.

4. Nursing Research:

- There is a need for extensive and intensive research in this area so that strategies for educating nurses and public regarding various aspects and phases of cardiac rehabilitation can be promoted.
- Nurse researchers should take efforts to conduct interactive sessions with coronary artery disease clients for promoting their health and also to disseminate the findings of research on benefits of cardiac rehabilitation that promotes their cardiac fitness.
- This study will serve as a valuable reference material for future investigators.

7. Personal Experience

The entire study gave an enriching experience to the investigator. It helped him to develop his skill in critical thinking and analysis and realize the importance of effective communication with respondents. The entire study was varied and rich learning experience which enabled the investigator to develop his skill in dealing with different personalities. The concept clarity about research as a whole increased. At every stage, the investigator received guidance and support from his guide. This boosted confidence to go ahead and carry out the planned activities and the co-operation from study subject was remarkable. The research was a great learning opportunity for the investigator.

8. Recommendations

On the basis of the findings of the study, it is recommended that the following studies can be conducted.

1. A similar study may be conducted on a larger population for generalization of findings.
2. Studies may be conducted to evaluate the effectiveness of information booklet versus other methods of teaching on knowledge regarding cardiac rehabilitation.
3. A similar study can be conducted and evaluated using alternative teaching strategies like interactive learning sessions, structured teaching programme.
4. A similar study can be conducted and evaluated using alternative teaching strategies like interactive learning sessions, structured teaching programme.
5. A study may be conducted to assess the existing knowledge and practice regarding cardiac rehabilitation.
6. A comparative study can be done among clients with first and second heart attack regarding knowledge on cardiac rehabilitation.
7. A descriptive study can be done among clients with coronary artery disease regarding knowledge on cardiac rehabilitation.
8. A structured teaching programme may be used in the hospitals, so that the entire clients with CAD can

participate in improving the knowledge regarding cardiac rehabilitation.

9. Instead of self-instructional module, planned teaching can be used.

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