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A STUDY TO ASSESS THE EFFECT OF INFORMATION BOOKLET ON KNOWLEDGE REGARDING CARDIAC DIET AMONG THE PATIENTS WITH CARDIAC DISORDERS IN SELECTED HOSPITALS OF METROPOLITAN CITY

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ABSTRACT

Cardiovascular diseases (CVDs) are the leading cause of death globally, accounting for an estimated 17.9 million deaths each year. Four out of five CVD-related deaths are due to heart attacks and strokes, and one-third of these occur prematurely in individuals under 70 years of age. Individuals at risk of CVD may present with raised blood pressure, diabetes, dyslipidemia, overweight, and obesity, which can be easily identified in primary care settings. Early identification and appropriate management of high-risk individuals can prevent premature mortality. **Objectives:** (1) To assess the effect of an information booklet on knowledge regarding cardiac diet among patients with cardiac disorders; (2) To assess the existing knowledge regarding cardiac diet; (3) To determine the association between knowledge and selected demographic variables. **Methodology:** A quantitative research approach was adopted using a pre-experimental one-group pre-test post-test design. A total of 70 patients from cardiology and cardiothoracic units were selected using a non-probability sampling technique. Knowledge was assessed using a structured questionnaire consisting of 26 items on cardiac diet. Data were analyzed using descriptive and inferential statistics. Paired t-test was used to determine the mean difference between pre-test and post-test scores, and chi-square test was used to assess the association between knowledge and selected demographic variables. **Results:** The study finding shows that, the mean pre-test score was 10.43 ± 3.52, while the mean post-test score was 17.67 ± 2.60. The calculated t value (19.348) was higher than the tabulated value (2.02) at 69 degrees of freedom and 0.05 level of significance, indicating a statistically significant difference. A significant association was found between knowledge and variables such as gender and education. **Conclusion:** The study concluded that patients initially had poor knowledge regarding cardiac diet; however, there was a significant improvement in post-test knowledge following the intervention. The information booklet was found to be an effective tool for improving knowledge and can be utilized by nurses to enhance patient care.

KEYWORDS

Cardiac Diet, Cardiovascular Diseases, Knowledge, Information Booklet, Patients, Effectiveness

INTRODUCTION

Cardiovascular diseases (CVDs) remain the leading cause of death worldwide, accounting for nearly 17.9 million deaths each year. Conditions such as coronary artery disease, stroke, and heart failure are closely linked to lifestyle factors including unhealthy diet, lack of physical activity, obesity, hypertension, and dyslipidemia. Many of these risk factors can be prevented or controlled with appropriate lifestyle changes and timely management.[1]

Diet plays a key role in maintaining heart health and preventing complications in individuals with cardiac disorders. A cardiac diet encourages the intake of fruits, vegetables, whole grains, and healthy fats, while reducing the consumption of salt, sugar, and saturated fats. Following such dietary practices helps in controlling blood pressure, cholesterol levels, and overall cardiovascular risk.[2]

In routine clinical settings, it is often observed that patients with cardiac disorders do not have adequate knowledge regarding appropriate dietary practices. This lack of awareness can affect disease management and recovery. Educational strategies such as information booklets are simple, cost-effective, and easy to use for improving patient knowledge. Hence, the present study was undertaken to assess the effectiveness of an information booklet on knowledge regarding cardiac diet among patients with cardiac disorders.

Background of the Study

Journal of American College of Cardiology (2020) suggests that high amounts of processed meat, sugar-sweetened beverages, and refined grain consumption are associated with greater incidence of cardiovascular diseases, whereas moderate coffee and alcohol intake and higher consumption of fruits, vegetables, low-fat dairy, whole grains, fish, and nuts are associated with lower incidence. Marine fish is rich in long-chain omega-3 fatty acids, which help reduce arrhythmias, thrombosis, inflammation, blood pressure, and improve lipid profile. Elke A. Trautwein et al. (2020) reported that plant-based dietary patterns have a positive impact on dyslipidemia and prevention of cardiovascular diseases, and also contribute to environmental sustainability.[3]

Cardiovascular diseases have become the leading cause of mortality in India, accounting for a significant proportion of deaths, with ischemic heart disease and stroke responsible for more than 80% of cases. The Global Burden of Disease study indicates a higher age-standardized death rate in India compared to the global average, with increasing premature mortality.[4] cardiovascular diseases are also the leading cause of death globally, particularly in low- and middle-income countries, and are largely preventable through addressing behavioral risk factors such as unhealthy diet, tobacco use, obesity, physical inactivity, and harmful alcohol use. Early detection, management, and implementation of preventive strategies are essential to reduce the burden of cardiovascular diseases.

Need of the Study

According to WHO (2021), cardiovascular diseases are the leading cause of death globally, accounting for 17.9 million deaths and 32% of total global mortality. Most deaths occur in low- and middle-income countries, and a large proportion of premature deaths are due to heart attack and stroke. Cardiovascular diseases can be prevented by addressing behavioral risk factors such as tobacco use, unhealthy diet, obesity, physical inactivity, and harmful use of alcohol.[5] In India, cardiovascular diseases continue to increase with a high burden of premature mortality, and dietary risk factors such as low intake of fruits, vegetables, grains, and nuts and high intake of sodium, trans-fat, and red meat contribute significantly to disease burden. Dyslipidemia is an important risk factor for coronary artery disease, with increasing prevalence observed in both urban and rural populations.[6]

Diet and lifestyle play a major role in the prevention and management of cardiovascular diseases. Unhealthy dietary habits, high cholesterol levels, obesity, and poor lifestyle practices increase the risk of cardiovascular disorders. Studies have shown that individuals often have average knowledge but poor practices regarding lifestyle modification, and there is a need for educational interventions to improve awareness. It has been observed that patients with cardiovascular disorders have poor knowledge regarding cardiac diet and are unaware of its complications.[7] Therefore, there is a need to provide knowledge regarding cardiac diet among patients with cardiac disorders with the help of an information booklet.

Review of Literature

Andrew P et al. (2022) conducted a survey addressing food access, diet quality and composition, nutritional understanding, and attitudes towards research among adults with heart failure within an integrated health system. Adults aged ≥18 years with diagnosed heart failure and at least one prior hospitalization within the last 12 months were included. The median (IQR) range of correct responses was 8 (6–9) out

of 13 questions. Respondents with higher income (> $50,000) and higher education levels answered more questions correctly, whereas lower income and education levels were strongly associated with food insecurity and poorer understanding of basic nutritional concepts. The findings suggest that there is scope for improvement in nutritional understanding, and interventions focusing on food access, diet quality, and education should target high-risk populations, particularly those of lower socioeconomic status. [8]

Paulos W and Loha E (2023) conducted a study to identify dietary patterns and their association with cardiovascular risk factors among adults in urban and rural areas of southern Ethiopia. A total of 2,483 participants aged 25–64 years were selected using a three-stage random sampling technique. Data were collected using structured questionnaires, 24-hour dietary intake assessment, anthropometric measurements, blood pressure, and biochemical analysis. Three major dietary patterns were identified. The western dietary pattern, characterized by consumption of meat, sweets, refined foods, and butter, was positively associated with urban residence, obesity, hypertension, blood glucose, and total cholesterol levels. The traditional dietary pattern, including tubers, whole grains, legumes, and sweet potatoes, showed a positive association with rural residence and physical activity and a negative association with hypertension. The study suggested that promoting healthy and traditional dietary patterns along with physical activity may help in preventing cardiovascular risk factors such as obesity, hypertension, and type 2 diabetes.[9]

Hypothesis

Will be tested at 0.05 level of significance.

Primary Hypothesis

- H_0= There is no significant difference between pre-test and post-test mean knowledge score regarding knowledge of cardiac diet among patients with cardiac disorders.
- H_{01} = There is no significant association between knowledge regarding Cardiac Diet with selected demographic variables.

Other Hypothesis

- H_1=There is a significant difference between pre-test and post-test mean knowledge score regarding cardiac diet among patients with cardiac disorders.
- H_2=There is a significant association between knowledge regarding cardiac diet and selected demographic variables.

Objective of the Study

Primary Objective

1. To assess the effect of Information Booklet on knowledge regarding cardiac diet among patients with cardiac disorders.

Secondary Objective

1. To assess the existing knowledge regarding cardiac diet among patients with cardiac disorders.
2. To find out the association between knowledge regarding cardiac diet with selected demographic variables.

METHODOLOGY

Research Approach

A quantitative research approach was adopted to assess the effectiveness of information booklet on knowledge regarding cardiac diet among patients with cardiac disorders in selected hospitals of the metropolitan city.

Research Design

A Pre-experimental one group Pre-Test Post-test, was used to assess the effectiveness of information booklet on knowledge regarding cardiac diet among the patients with cardiac disorders.

Setting of the Study

The study was conducted in selected hospitals of the metropolitan city.

Target Population

The target population comprised the Patients with cardiac disorders in selected hospitals of a metropolitan city.

Accessible Population

The accessible population comprises of patients with cardiac disorders in selected hospitals of a metropolitan city available at the time of data collection.

Sample Size and Sampling Technique

A sample of 70 patients with cardiac disorders was selected using Non-probability purposive sampling technique.

Inclusion Criteria

In this study inclusion criteria is:

1. Patients who are diagnosed with cardiac diseases such as Hypertension, dyslipidaemia and coronary artery diseases and who are admitted in cardiovascular and cardiothoracic units.
2. Patients who are willing to participate in the study.
3. Patients who can read and write in Hindi, Marathi or English.

Exclusion Criteria

In this study exclusion criteria is:

1. Patients who are getting discharged.
2. Patients with cardiac disorders who are critically ill.
3. Patient participated in pilot study.

Tool For Data Collection

The structured questionnaire was developed to assess knowledge regarding cardiac diet among patients with cardiac disorders in selected hospitals of a metropolitan city. The tool consisted of two sections.

Section I: Demographic Data: included demographic data comprising five items such as age, gender, educational qualification, dietary pattern, and duration of the disease diagnosed.

Section II: Structed Questionnaire:consisted of 26 structured knowledge questions related to cardiac diet, including subtopics such as fat, omega-3 fatty acids, fiber, sodium, protein, and carbohydrates. The questionnaire was developed based on an extensive review of literature, clinical observation, and expert opinion from medical-surgical nursing specialists, nursing educators, dieticians, cardiologists, and physicians. Each correct response was awarded one mark, while incorrect responses received zero.

Reliability

Reliability for knowledge questionnaire by Test-retest is 0.88 is well above 0.7 hence it is reliable. This showed that the tool was highly reliable. Pearson correlation steps calculated from the group mean.

Pilot Study

The pilot study was conducted from 8 May 2023 to 14 May 2023 on 10% of samples were selected using a non-probability purposive sampling method.

Data Collection Procedure

Data collection is a systematic process of gathering information relevant to the research objectives and hypothesis. Prior to data collection, formal administrative permission was obtained, and the investigator visited the selected hospital of a metropolitan city. Data were collected from 13 June 2023 to 21 June 2023 from patients with hypertension, dyslipidemia, and coronary artery disease who met the inclusion criteria.

The investigator introduced herself, explained the purpose of the study, assured confidentiality, and obtained informed written consent from the participants. A total of 70 samples were selected using a non-probability purposive sampling technique. Demographic data were collected, and knowledge regarding cardiac diet was assessed using a structured questionnaire, which took approximately 20 minutes for each participant. After completion of the pre-test, an information booklet was administered to provide knowledge regarding cardiac diet. A post-test was conducted after 7 days using the same questionnaire to assess the change in knowledge and the effectiveness of the intervention. At the end of data collection, participants and hospital authorities were thanked for their cooperation.

RESULT

The study findings showed that the majority of participants were aged 41–50 years (31.40%), followed by 51–60 years (28.60%), with most being male (52.90%) and having HSC education (45.75%). Most participants were non-vegetarian (84.30%) and had been diagnosed with cardiac disease for less than one year (54.28%). In the pre-test, 55.71% of participants had poor knowledge, 35.71% had good knowledge, and 8.58% had very good knowledge regarding cardiac diet. In the post-test, 74.28% had very good knowledge, 17.14% had good knowledge, and 8.58% had excellent knowledge. The mean pre-test score was 10.43 ± 3.52, while the mean post-test score increased to 17.67 ± 2.60. The paired t-test value ($t = 19.348$) was higher than the tabulated value (2.02) at 0.05 level of significance, indicating a

statistically significant improvement in knowledge and effectiveness of the information booklet. Chi-square analysis showed a significant association between pre-test knowledge and variables such as age and education ($p < 0.05$), whereas no significant association was found with gender, dietary pattern, and duration of disease ($p > 0.05$).

Table No 1: General assessments of knowledge regarding category of cardiac diet among patients with cardiac disorders (Pre-Test Vs Post-Test) (n=70)

Knowledge Category on	Pretest		Posttest	
	Mean	SD	Mean	SD
Fat	4.11	1.97	6.91	1.38
Omega 3 fatty acid	1.54	1.02	2.71	0.80
Protein	1.37	0.90	1.84	0.93
Fibre	1.04	0.71	1.64	0.87
Sodium	1.59	0.88	3.06	0.93
Carbohydrate	0.77	0.95	1.50	0.97
Fat	4.11	1.97	6.91	1.38
Omega	1.54	1.02	2.71	0.80

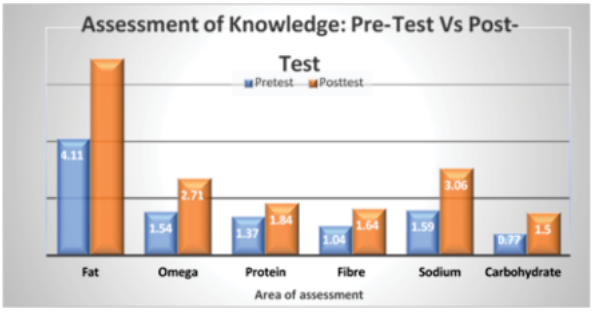
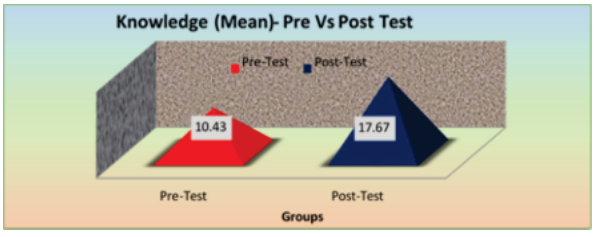


Figure No- 1: General assessments of knowledge regarding category cardiac diet among patients with cardiac disorders (Pre-Test Vs Post-Test) (n=70)

Table 4.12: Comparison of the knowledge regarding cardiac diet (paired t test) (n=70)

Test	N	Mean	SD	t value	Significance (2 tailed)
Pre-Test	70	10.43	3.52	19.348	0.000
Post test	70	17.67	2.60		



DISCUSSION

The findings of the present study are supported by previous studies that reported the need for educational interventions to improve knowledge regarding cardiac diet. A study conducted by Abin P Simon et al. (2018) showed that clients with hypertension had moderate knowledge and required interventional programmes to improve awareness of heart smart diet. Similarly, Chamilya et al. (2019) reported that knowledge regarding dietary management was poor and significantly associated with education level. In the present study, the majority of participants initially had poor knowledge in the pre-test, whereas in the post-test, most participants demonstrated very good and excellent knowledge levels. The mean knowledge score increased from 10.43 ± 3.52 in the pre-test to 17.67 ± 2.60 in the post-test, with a statistically significant difference ($t = 19.348$, $p < 0.05$). These findings indicate that the information booklet was effective in improving knowledge regarding cardiac diet among patients with cardiac disorders.

CONCLUSION

The study revealed that patients with cardiac disorders had poor knowledge regarding cardiac diet in the pre-test, whereas post-test scores showed marked improvement after administration of the information booklet. The majority of participants shifted from poor knowledge (55.71%) in the pre-test to very good knowledge (74.28%) in the post-test. The mean knowledge score increased from 10.43 ± 3.52 to 17.67 ± 2.60, indicating a statistically significant improvement. A significant association was found between knowledge and variables such as age and education, leading to rejection of the null hypothesis. The findings confirm that the information booklet was effective in improving knowledge regarding cardiac diet among patients with cardiac disorders, and further studies on a larger scale are recommended.

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