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Original Article

A Study to Assess the Effectiveness of an Information Booklet on Knowledge Regarding Myocardial Infarction Among Nursing Officers Working in New Medical College Hospital, Kota (Raj)

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Abstract

Introduction: The global study of myocardial infarction (MI), or heart attack, in 2025 is marked by an increase in early cases, especially in younger people, as well as a persistent emphasis on established risk factors and the effects of new risk factors like autoimmune diseases and chronic inflammation. With a goal of reaching 50% of eligible people, WHO continues to promote secondary prevention through medication therapy and counseling.

Methodology: A descriptive research approach with a pre-experimental one-group pre-test post-test design was adopted to assess the effectiveness of an information booklet on knowledge regarding myocardial infarction among Nursing Officers working in New Medical College Hospital, Kota (Rajasthan). A total of 60 Nursing Officers were selected using a purposive sampling technique. Data were collected using a structured questionnaire consisting of demographic variables and a 30-item knowledge questionnaire related to myocardial infarction. The information booklet was administered after the pre-test, followed by a post-test to evaluate the change in knowledge level.

Results: The average pre-test score (14.85; 49.49%) showed that nursing officers had insufficient prior knowledge of myocardial infarction. The mean score rose to 24.10 (80.35%) following the instructional booklet, with 70% achieving adequate knowledge and none remaining inadequate. The largest gain in MI management and the considerable t value (19.89) attested to the educational booklet's efficacy.

Conclusion: According to pre-test results, the majority of respondents (73.33%) did not know enough about myocardial infarction. 70% of participants had sufficient knowledge following the educational booklet, and their mean scores significantly increased from 14.85 to 24.10 (t = 19.89). The findings support the educational booklet's efficacy in raising nursing officers' level of knowledge.

Keyword: Effectiveness, Information booklet, knowledge, Myocardial Infarction Nursing Officers.

Introduction

For fifty years, coronary angiography has been used extensively to assess various vascular diseases and assign patients to therapeutic measures.[1] Many intravascular imaging modalities have been developed as a result of conventional angiographic techniques' inability to directly examine the arterial wall. The burden, makeup, and functionality of atherosclerotic plaque, neointimal hyperplasia, and allograft vasculopathy that develop within coronary arteries may be more thoroughly described using these methods. A deeper understanding of the elements that underpin the illness process and direct therapeutic interventions has been made

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possible by the capacity to employ various modalities in vivo and sequentially.[2]

There has never been a report on the angiographic characteristics of non-Q-wave acute myocardial infarction (AMI) shortly after the beginning of symptoms. As a result, this study examined the coronary angiographic results of 86 AMI patients who were examined within six hours after the beginning of symptoms: 28 had non-Q-wave AMI and 58 had Q-wave AMI. Clinical features, the prevalence of 1-vessel disease, and the location of the infarct-related artery were similar in patients with Q-wave and non-Q-wave AMI. About 49 patients (84%) with Q-wave AMI and 12 patients (43%) with non-Q-wave AMI had thrombus ($p = 0.0002$). Only 11 patients (39%) with non-Q-wave AMI had entire coronary occlusion, compared to 53 patients (91%) with Q-wave AMI who had complete blockage of the infarct-related artery ($p = 0.0001$).[3]

There has been worry that the prognosis for men and women with coronary artery disease differs and that women are treated differently from men. A sizable database of well-characterized patients with extended follow-up is the Coronary Artery Surgery Study (CASS) registry.[4]

A prognostic high-risk angiographic subset of individuals with chronic ischemic heart disease is defined by the combination of severe proximal left anterior descending and proximal left circumflex coronary artery disease, or left main equivalent (LMEQ) illness. Relatively few observational studies examined surgical and medical therapy in patients with LMEQ disease, despite the fact that several observational and randomized clinical trials demonstrated longer survival in surgically treated than medically treated patients with left main coronary artery illness. The current study of 912 patients with LMEQ disease in the Coronary Artery Surgery Study (CASS) Registry allows for the examination of LMEQ patient subgroups and expands the previously published 5-year surgical and medical group survival analysis to more than 16 years of follow-up.[5]

Coronary artery bypass graft (CABG) surgery extends life in the majority of patients with left main coronary artery disease (LMCD), according to observational and randomized studies comparing surgical and medicinal therapy. The current study of 1484 LMCD patients in the Coronary Artery Surgery Study (CASS) Registry allows for the examination of LMCD patient subgroups and expands the previously published 5-year surgical and medical group survival analysis to more than 16 years of follow-up.[6]

It is well established that individuals with ambulatory electrocardiographic (AECG) ST-segment depression and critical coronary narrowing are more likely to experience unfavorable outcomes; however, less is known regarding patients with AECG ST-segment depression who do not have critical coronary narrowing.[7]

Between 1 and 12% of individuals with acute coronary syndrome (ACS) who undergo coronary angiography have normal or near-normal coronary angiography (NONCA). Previous research revealed contradictory findings about the characteristics and prognosis of these patients. For the analysis and characterization of this cohort along the entire spectrum of ACS, we used the Acute Coronary Syndrome Israeli Survey (ACSIS), a biannual nationwide ACS survey, as a source of an unselected population representative of general clinical practice.[8]

The failure of myocardial reperfusion in the absence of mechanical coronary occlusion is the hallmark of the no-reflow (NR) phenomenon. NR has a detrimental impact on patient outcomes, highlighting the significance of management and prognosis. Evaluating the prevalence and independent predictors of NR in patients with ST-elevation myocardial infarction (STEMI) was the goal.[9]

Although drug-eluting stents (DES) are intended to prevent restenosis, the long-term therapeutic success may be compromised by a higher risk of stent thrombosis, which is linked to delayed re-endothelialization or poor stent implantation. Additionally, local chronic endothelial dysfunction has been linked to DES implantation. On the other hand, Trapidil is a powerful anti-inflammatory, vasodilator, and antiproliferative medication. Numerous studies have demonstrated anti-restenotic effects, indicating significant clinical benefits from the use of Trapidil-eluting DES.[10]

The use of drug-eluting stent systems (DES) raises safety concerns primarily because insufficient stent endothelial coverage might lead to late stent thrombosis. To improve the idea of antiplatelet medication following DES implantation, specific details regarding the duration and extent of endothelial strut coverage of each DES are needed. For endovascular imaging of stents, atherosclerosis development, susceptible plaque, and neointimal proliferation, optical coherence tomography (OCT) is becoming a new gold standard.[11]

Objectives of The Study

- To assess the pre-test knowledge regarding Myocardial Infarction among Nursing Officers working in New Medical College Hospital, Kota (Raj.)
- To prepare and implement an Information Booklet regarding Myocardial Infarction among Nursing Officers working in New Medical College Hospital, Kota (Raj.)
- To assess post-test knowledge regarding the Myocardial Infarction.
- To assess the effectiveness of the Information Booklet on knowledge regarding Myocardial Infarction by comparing pre-test & post-test knowledge scores.
- To determine the association between pre -test knowledge score and selected socio-demographic variables.

Methodology

Research Approach

Descriptive research approach used for this study.

Research Design

A pre-experimental one-group pre-test post-test research design was adopted.

Setting of the study

New Medical College Hospital, Kota (Raj), selected for presenting New Medical College Hospital, Kota

Sample

In this study, the sample consists of Nursing Officers working in New Medical College Hospital, Kota (Raj), who fulfilled the inclusion criteria.

Sample size

A sample size is a small portion of a population selected for the study. It constitutes a subset of the total population. A sample of the present study comprised 60 Nursing Officers working in New Medical College Hospital, Kota (Raj).

Sample Technique

Purposive sampling technique, a type of non-probability sampling approach, was used to select the sample of 60Nursing Officers.

Description of the tool

The tool consists of two parts.

Part I

The semi-structured questionnaire consists of demographic variables of Nursing Officers. It consists of 7 items regarding gender, age, religion, professional qualification, exposure to educational media, years of experience and types of family.

Part II

structured knowledge questionnaire consists of 30 items regarding Myocardial Infarction, which were divided into 4sections-

- Section: A- Knowledge regarding the anatomy and physiology of the heart.
- Section: B- Knowledge regarding myocardial infarction, risk factors, types, classification, Pathophysiology and clinical manifestation.
- Section: C- Knowledge regarding diagnostic evaluation.
- Section: D- Knowledge regarding management of myocardial infarction.

Results

Section I: Sample Characteristics

The results are arranged into Tables 1-5.

Section Ii: Effectiveness of information booklet in terms of gain in knowledge score

With a mean pre-test score of 14.85 (49.49%), the study's results demonstrated that the majority of nursing officers initially lacked sufficient information about myocardial infarction. A mean post-test score of 24.10 (80.35%) indicates that knowledge greatly improved following the distribution of the information booklet, with 70% of participants achieving adequate knowledge and none remaining in the inadequate category. A statistically significant improvement was shown by the computed t value of 19.89. The information booklet's usefulness in improving nursing officers' knowledge was confirmed by an area-wise analysis that revealed the greatest knowledge improvement in MI management.

Discussion

The results of the survey showed that most nursing officers were male, between the ages of 26 and 30, had 6 to 10 years of work experience, were GNM qualified, and were from nuclear households. Television was their main source of instructional exposure. Pre-test results showed that most people (73.33%) did not know enough about myocardial infarction. Knowledge significantly increased after the educational booklet was distributed, with 70% of participants attaining adequate knowledge and none falling into the deficient category. The

Table 1: Frequency and percentage distribution of sample characteristics
N = 60

S. No.	*Socio-demographic variables*	*Categories*	*Frequency*	*Percentage (%)*
1.	Age (years)	21-25	16	26.66
		26-30	29	48.33
		31-35	10	16.66
		Above 35	05	8.33
2.	Gender	Male	39	65.00
		Female	21	35.00
3.	Religion	Hindu	36	60.00
		Muslim	14	23.33
		Christian	08	13.33
		Sikh & others	02	3.33
3.	Professional Qualification	GNM	32	53.33
		B.Sc. Nursing	18	30.00
		M.Sc. Nursing	08	13.33
		Ph.D. Nursing	02	3.33
4.	Type of Family	Joint family	22	36.66
		Nuclear family	38	63.33
5.	Work experience in years	0-5 years	16	26.66
		6-10 years	28	46.66
		11-15 years	11	18.34
		Above 15 years	05	08.34
6	Exposure to educational media	Television	30	50.00
		Internet	15	25.00
		News paper	09	15.00
		Text Book	06	10.00

Table 2: Knowledge scores obtained by the nursing officers were arbitrarily graded as

Level of knowledge	*Scoring range*
Inadequate (<50%)	1–15
Moderately adequate (51-75%)	16–23
Adequate (>75%)	24–30
TOTAL	30

Table 3: Grading of pre-test and post-test knowledge scores among Nursing officers regarding Myocardial Infarction N = 60

Grade	*Range*	*Pre-test*		*Post-test*	
		Frequency	*%*	*Frequency*	*%*
Adequate	24–30	04	06.66	42	70.00
Moderately adequate	16–23	12	20.00	18	30.00
Inadequate	1–15	44	73.33	0	00.00

Table 4: Mean, median and standard deviation of pre-test and post-test Knowledge Scores N = 60

Knowledge scores	*Mean*	*Mean %*	*Median*	*SD*	*t value*
PRE-TEST	14.85	49.49%	13	3.95	19.89
POST-TEST	24.10	80.35%	24	2.67	

Table 5: Area-wise pre and post-test knowledge scores among nursing officers Regarding MI N = 60

Area	*Max. Score*	*Mean % knowledge score*		*Mean % actual gain*
		Pre-test	*Post-test*	
Question related to Anatomy & Physiology of Heart	08	48.64	83.50	34.86
Question related to classification, risk factors, pathophysiology, and clinical manifestation of myocardial infarction	10	54.34	73.50	19.16
Question related to the diagnostic evaluation of MI	06	51.50	80.00	28.50
Question related to the management of MI	06	43.50	84.40	40.90
Total	30	49.49	80.35	30.86

mean knowledge score increased from 14.85 (49.49%) in the pre-test to 24.10 (80.35%) in the post-test, with a statistically significant t value of 19.89. The substantial associations between knowledge scores and age, professional qualification, work experience, and exposure to educational media validated the informational booklet's effectiveness in improving nursing officers' knowledge.

Conclusion

According to pre-test findings, just 6.66% of respondents had sufficient knowledge of myocardial infarction, while the majority (73.33%) did not. Knowledge considerably increased following the distribution of the instructional booklet, with 70% of respondents achieving adequate knowledge and none remaining in the deficient group. With a statistically significant t value of 19.89, the mean knowledge score rose from 14.85 (49.49%) to 24.10 (80.35%), demonstrating the informational booklet's efficacy. The greatest post-test improvement in myocardial infarction management was shown by area-wise analysis. Knowledge levels were significantly correlated with age, professional qualification, work experience, and exposure to educational media, but not with gender, religion, or family type.

Recommendations

On the grounds of the findings of the study following recommendations have been made:

- A similar study may be replicated on a larger sample; thereby, findings can be generalized for a larger population.
- A comparative study can be carried out among nursing officers of different health settings.
- An individual case study can be done regarding Myocardial Infarction and its prevention.

Conflict of Interest

None.

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