

A study to assess the effectiveness of informational booklet on knowledge regarding early signs and immediate management of myocardial infarction among the undergraduate students in selected colleges in Udupi

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Abstract

Methods: An evaluative approach with pre-experimental, one group pretest posttest design research design, were used to assess the effectiveness of informational booklet on knowledge regarding early signs and immediate management of myocardial infarction among undergraduate students. In the view of nature of the problem and accomplish the objectives of the study, a structured self-administered knowledge questionnaire was prepared to assess the knowledge among undergraduate students regarding early signs and immediate management of myocardial infarction. Reliability of the tool was tested and validity was ensured in consultation with guides and experts in field of Nursing and Medicine. The pilot study was conducted from 7/6/23 to 14/6/23 after obtaining permission from Dr. G Shankar Government Women's First Grade College, Udupi. The final study was conducted from 17/6/23 to 24/6/23 after obtaining permission from the authority of Poornaprajna College, Udupi. Subjects were chosen by purposive sampling technique. The researcher introduced self to the subjects and purpose of the study was explained. She obtained written consent from those who were willing to participate in the study. Instructions were given and the tool was administered. Pretest was conducted on 17/6/23 at 9.00 am onwards. Time to conduct pre test was about 35 mts and on the same day informational booklet was given. The respondents were thanked at the end of the class. Post test was conducted on 24/6/23.

Results: The mean post-test knowledge scores 28, is higher than mean pre-test knowledge scores 11.5. The computed value 22.59 ($p < 0.05$) showed that there is highly significant difference between the pretest and post-test mean knowledge scores 16.5. Hence, hypothesis H1 is accepted. This indicates that the informational booklet is effective in increasing the knowledge scores on early signs and immediate management of myocardial infarction. The chi square value of like variable such as age, gender, religion, class of study, dietary pattern, area of residence, previous information and source of information at 0.05 level of significance does not show any significant association. Hence, the hypothesis H2 is rejected.

Interpretation and conclusion: The study revealed that during pretest majority 83 (83%) undergraduate students had poor knowledge level, 17 (17%) had moderate knowledge on early signs and immediate management of myocardial infarction. During posttest majority of 49 (49%) gained excellent knowledge, 48 (48%) got good knowledge and 3 (3%) undergraduate students gained moderate knowledge. This indicates that the informational booklet is effective in increasing the knowledge scores on early signs and immediate management of myocardial infarction. There was no statistically significant association found between knowledge score and demographic variables.

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Keywords: Effectiveness; Informational booklet; Knowledge; Early signs and immediate management of myocardial infarction; Undergraduate students

1. Introduction

Coronary heart disease (CHD) represents the leading cause of death in adults in the world. Myocardial infarction (MI) is a lethal manifestation of CHD and can present as sudden death. Although MI mainly occurs in patients older than 45, young men and women can suffer MI. The disease carries a significant morbidity, psychological effects, and financial constraints for the person and the family when it occurs at a young age. The protection offered by young age has been slowly taken away by the increased prevalence of risk factors for CHD in adolescents such as smoking, obesity, and lack of physical activity. ¹

Coronary Heart Disease (CHD) is estimated that it will be the single largest cause of disease burden globally by the year 2020. (World Health Organization, (2007). Mortality from cardiovascular disease reached 17.5 million in 2005, which is 30 percent of all global deaths, (Wood, 2005). The World Health Organization (WHO) estimated that if no appropriate action is taken, 20 million people would die from cardiovascular disease every year by 2015, (Ukraine, 2007).²

In India, heart disease is the single largest cause of death with heart attacks being responsible for 1/3rd of all deaths caused by heart diseases. According to the projection by the WHO and the Indian Council for Medical Research (ICMR), India will not only be the heart attack capital but also the capital of diabetes and hypertension by 2020.³ United States, annually. Myocardial Infarction (MI) is a life threatening condition characterized by the formation of localized necrotic areas within the myocardium. Myocardial Infarction usually follows the sudden occlusion of a coronary artery and the abrupt cessation of blood and oxygen flow to the heart muscle. Because the heart muscle must function continuously, blockage of blood to the muscle and the development of necrotic areas can be lethal. Coronary Heart Disease (CHD) is the major cause of death and disability in the world. In the United Kingdom, the incidence rate of MI for men aged between 30 and 69 years of age is about 600 per 100,000 and for women about 200 per 100,000. It affects all aspects of an individual's health - physical mental social and perception of wellbeing. Heart disease forms the leading cause of death in the United States. An estimated one fifth of all deaths in America come as a result of CHD. Over 13 million individuals across the nation suffer from CHD. The prevalence of CAD (Coronary Artery Disease) has progressively increased in India during the latter half of the last century. The risk of CHD among Indians is 3- 4 times higher than among White Americans, 6 times higher than among Chinese and 29 times higher than among Japanese. Indians are prone to coronary heart disease at a younger age than the Western population.⁴

Quality of life is the overall sense of wellbeing including aspects of happiness and satisfaction with life as a whole. The quality of life represents the effects of illness and treatment as perceived by the patient and is important as a primary outcome measure. The measurement of quality of life in clients after MI is important as it examines treatment outcome in a holistic manner, not just in the physical direction. The challenge facing health care professionals today is how to encourage people to be physically active and to maintain health promoting behaviors.⁵ Following Myocardial Infarction, there are things that can do to reduce the risk of further heart problems. Everyone is different and individual circumstances will vary. The health related practices such as quitting smoking it is the single most effective way to reduce your risk of having a further Myocardial Infarction. The chemicals in cigarette smoke affect the arteries. ¹¹If stop smoking, the risk of a further heart attack is roughly halved (compared to the risk if you continue to smoke). Angina is also more likely to develop in smokers. Changes in diet can make a big difference.⁶ According to the World Health Organization, coronary heart disease is now the leading cause of death worldwide, accounting for 30.8% of all deaths annually and with about 80% of all cardiovascular deaths occurring in developing countries. Approximately, 75% of the cardiovascular diseases (CVDs) are due to conventional risk factors which have a high prevalence in many populations and whose treatment and control reduces the burden of CVDs. In India alone, there were approximately 46.9 million patients with CVDs during the year 2010. Deaths from CVD in people aged 35-64 years cause the highest loss in potentially productive years of life in India when compared to other countries of the world.⁷

Objectives

- To assess the knowledge regarding early signs and immediate management of myocardial infarction among the undergraduate students.
- To evaluate the effectiveness of informational booklet on knowledge regarding early signs and immediate management of myocardial infarction among undergraduate students.
- To find-out the association between the pre test knowledge score regarding early signs and immediate management of myocardial infarction and selected demographic variables.

2. Methodology

2.1. Research approach

A research approach tells us what data to collect and how to analyze it. It also suggests possible conclusions to be drawn from the data. The research approach adopted for this study is evaluative approach to assess the effectiveness of informational booklet on knowledge regarding early signs and immediate management of myocardial infarction.

2.2. Research design

The research design is the backbone or the structure of the study. The design used for this study is Pre experimental one group Pre test Post test design. The researcher compares the pre test and post test knowledge to assess the effectiveness of informational booklet.

2.3. Research settings

Setting refers to the area where the study is conducted. The study was conducted in Poornaprajna college, Udupi.

The selection of area was done on the basis of

- Geographical proximity
- Feasibility of conducting study
- Availability of sample

2.4. Population

According to Talbot, "a population is a group whose members possess specific attributes that researcher is interested in studying". The target population for the study is undergraduate students studying in Poornaprajna college, Udupi

2.5. Sample and sample size

According to Talbot, "A sample is a portion of the population that has been selected to represent the population of interest, by observing the characteristics of the population from which it drawn."

In this study samples were drawn by using non probability Purposive sampling technique, the samples were undergraduate students and the sample size is 100.

2.6. Sampling technique

According to Perten, "An optimum sample in survey is one which fulfills the requirements of efficiency, representativeness, reliability and flexibility". The sample of the present study comprised of 100 undergraduate students. The samples were selected by non probability purposive sampling technique.

3. Results

3.1. Presentation of data

The data obtained were entered in a master data sheet for tabulation and statistical processing. The analysis of data is organized and presented under the following sections.

3.1.1. Section A

Demographic variable of undergraduate students with respect to age, gender, religion, class of study, area of residence, dietary pattern, previous knowledge and source of information regarding myocardial infarction.

3.1.2. Section B

Assessment of pretest and posttest level of knowledge of undergraduate students regarding early signs and immediate management of myocardial infarction.

- Part I: Distribution of subject's overall knowledge regarding early signs and immediate management of myocardial infarction
- Part II: Area-wise analysis of pretest and posttest knowledge of undergraduate students regarding early signs and immediate management of myocardial infarction

3.1.3. Section C

Effectiveness of informational booklet regarding early signs and immediate management of myocardial infarction.

3.1.4. Section D

Association of pretest level of knowledge with demographic variables.

3.2. Section A Demographic variables of undergraduate students

Table 1 Frequency and percentage distribution of undergraduate students n=100

S.N	Demographic variables	Options	Frequency (f)	Percentage (%)
1	Age in years	18-20 years	56	56%
		21-22 years	23	23%
		Above 23 years	21	21%
2	Gender	Male	38	38%
		Female	62	62%
3	Religion	Hindu	83	83%
		Muslim	9	9%
		Christian	8	8%
4	Class of study	1 st year	35	35%
		2 nd year	35	35%
		3 rd year	30	30%
5	Dietary pattern	Vegetarian	12	12%
		Non vegetarian	43	43%
		Mixed diet	45	45%
6	Area of residence	Urban	53	53%
		Rural	47	47%
7	Previous information	Yes	12	12%
		No	88	88%
8	Source of information	Teacher	6	6%
		Friends/ Family members	2	2%
		Magazine/newspaper/ Internet	4	4%
		None	88	88%
Total			100	100%

3.3. SECTION B Assessment of pretest and posttest level of knowledge of undergraduate students regarding early signs and immediate management of myocardial infarction

3.3.1. PART I

Table 2 Distribution of overall knowledge regarding early signs and immediate management of myocardial infarction. N=100

Overall knowledge of undergraduate students	Frequency (f)		Percentage (%)	
	Pre test	Post test	Pre test	Post test
Poor	83	0	83%	0
Moderate	17	3	17%	3%
Good	0	48	0%	48%
Excellent	0	49	0%	49%
Total	60	60	100%	100%

According to Table 2, during pretest majority 83 (83%) undergraduate students had poor knowledge level, 17 (17%) had moderate knowledge on early signs and immediate management of myocardial infarction.

During posttest majority of 49 (49%) gained excellent knowledge, 48 (48%) got good knowledge and 3 (3%) undergraduate students gained moderate knowledge. None of them belongs to poor knowledge category.

3.3.2. PART II

Table 3 Area-wise analysis of pretest and posttest knowledge of undergraduate students regarding early signs and immediate management of myocardial infarction N=100

Sl.No	Area	Max. score	Mean		Mean percentage		Standard Deviation	
			Pre	Post	Pre	Post	Pre	Post
1	Definition	02	0.98	1.92	49%	96%	0.913	0.427
2	When to suspect/recognise	04	1.6	3.62	40%	90%	0.602	0.415
3	Early signs and symptoms	04	0.78	2.44	20%	61%	0.951	0.486
4	Diagnostic criteria & investigations	05	1.94	3.59	39%	72%	0.982	0.562
5	Treatment & referral criteria	15	4.56	12.3	30%	82%	0.861	0.437
6	Prevention	05	1.6	3.8	32%	76%	0.833	0.198
Total		35	11.5	28	35%	80%	5.142	2.525

The table 3 shows area-wise analysis of pretest and posttest knowledge of undergraduate students regarding early signs and immediate management of myocardial infarction. It shows that overall pretest knowledge mean was 11.5 with mean percentage of 35% and posttest knowledge mean was 28 with mean percentage of 80%.

3.4. SECTION C

Effectiveness of informational booklet on early signs and immediate management of myocardial infarction

Table 4 Comparison of pretest and posttest knowledge score N=100

Knowledge assessment	Mean	Difference of mean	SD	Df	Paired 't' value	p-value
Pre-test	11.5	16.5	5.142	47	22.59	P<0.05
Post-test	28		2.525			

To see the significance difference between the two tests, hypothesis is formulated and tested by using paired 't' test.

H1: There is significant improvement in mean post-test knowledge score of undergraduate students will be significantly higher than their mean pre-test knowledge score.

The data in Table 4 illustrates that the mean post-test knowledge scores 28, is higher than mean pre-test knowledge scores 11.5. The computed value 22.59 ($p < 0.05$) showed that there is highly significant difference between the pretest and post-test mean knowledge scores 16.5.

Hence, hypothesis H1 is accepted. This indicates that the informational booklet is effective in increasing the knowledge scores on early signs and immediate management of myocardial infarction.

3.5. SECTION D

Association of pretest level of knowledge with selected demographic variables

Table 5 Association between selected demographic variables and pre-test knowledge scores N=100

S. N	Demographic variables	Chi-square value	df	p- value	Significance
1	Age	0.027	1	0.869	NS
2	Gender	0.303	1	0.582	NS
3	Religion	0.451	1	0.502	NS
4	Class of study	0.303	1	0.582	NS
5	Dietary pattern	0.563	1	0.819	NS
6	Area of residence	0.469	1	0.638	NS
7	Previous knowledge	0.075	1	0.512	NS
8	Source of information	0.257	1	0.526	NS

To see the association between the pretest level of knowledge score with selected demographic variables, hypothesis is formulated and tested by using chi square test.

H2: There will be significant association between the mean pre-test knowledge score of undergraduate students and the selected demographic variables.

The table 5 showed association of pretest level of knowledge score with selected demographic variables. The variable such as age, gender, religion, class of study, dietary pattern, area of residence, previous information and source of information at level of significance does not show any significant association. Hence, the hypothesis H2 is rejected.

4. Discussion

4.1. SECTION A: Demographic variables of undergraduate students

- In the present study it was found that the majority of subjects 56 (56%) were belongs to age group of 18-20 years, then 23 (23 %) were belongs to age group of 21-22 years and 21 (21 %) were above 23 years.
- In regarding with gender, majority of the sample 62 (62%) of the samples were female and remaining 38 (38 %) were males.
- In relation to religion, majority of the 83 (83%) were Hindu, 9 (9%) were Muslim and 8 (8%) were Christian.
- In regarding with class of study, majority 35 (35%) were 1st years and 2nd year undergraduate students and remaining 30 (30%) were 3rd year undergraduate students
- In regarding with dietary pattern, majority of the 45 (45%) were consuming mixed diet, 43 (43%) were non vegetarian and remaining 12 (12%) were vegetarian.

- In regarding with area of residence, majority of the 53 (53%) were residing in urban area and remaining 47 (47%) were residing in rural area.
- In relation to previous information, majority of the 88 (88%) did had previous knowledge about MI and only 12 (12%) had previous knowledge about MI.
- In relation to source of information, majority of the 88 (88%) had no information, 6 (6%) got information from teachers, 4 (4%) got information from magazine/ newspaper/ internet and only 2 (2%) got information from friends/ family members.

4.2. Section B: Assessment of overall knowledge scores of the undergraduate students

- First objective is to assess knowledge regarding early signs and immediate management of myocardial infarction among the undergraduate students.

During pretest majority 83 (83%) undergraduate students had poor knowledge level, 17 (17%) had moderate knowledge on early signs and immediate management of myocardial infarction.

During posttest majority of 49 (49%) gained excellent knowledge, 48 (48%) got good knowledge and 3 (3%) undergraduate students gained moderate knowledge. None of them belongs to poor knowledge category.

- Assessment of area-wise analysis of knowledge scores of undergraduate students regarding early signs and immediate management of myocardial infarction.

Area-wise analysis of pretest and posttest knowledge of undergraduate students regarding early signs and immediate management of myocardial infarction. It shows that overall pretest knowledge mean was 11.5 with mean percentage of 35% and posttest knowledge mean was 28 with mean percentage of 80%.

4.3. SECTION C: Effectiveness of informational booklet on knowledge regarding early signs and immediate management of myocardial infarction

- The second objective is to evaluate the effectiveness of informational booklet on knowledge regarding early signs and immediate management of myocardial infarction among undergraduate students.

The mean post-test knowledge scores 28, is higher than mean pre-test knowledge scores 11.5. The computed value 22.59 ($p < 0.05$) showed that there is highly significant difference between the pretest and post-test mean knowledge scores 16.5. Hence, hypothesis H1 is accepted. This indicates that the informational booklet is effective in increasing the knowledge scores on early signs and immediate management of myocardial infarction.

4.4. SECTION D: Association between knowledge score with selected demographic variables

- Third objective is to find-out the association between the pre test knowledge score regarding early signs and immediate management of myocardial infarction and selected demographic variables.

The chi square value of like variable such as age, gender, religion, class of study, dietary pattern, area of residence, previous information and source of information at 0.05 level of significance does not show any significant association. Hence, the hypothesis H2 is rejected.

4.5. SECTION D: Association between knowledge score with selected demographic variables

Third objective is to find-out the association between the pre test knowledge score regarding early signs and immediate management of myocardial infarction and selected demographic variables.

The chi square value of like variable such as age, gender, religion, class of study, dietary pattern, area of residence, previous information and source of information at 0.05 level of significance does not show any significant association. Hence, the hypothesis H2 is rejected.

5. Conclusion

The study revealed that during pretest majority 83 (83%) undergraduate students had poor knowledge level, 17 (17%) had moderate knowledge on early signs and immediate management of myocardial infarction. During posttest majority of 49 (49%) gained excellent knowledge, 48 (48%) got good knowledge and 3 (3%) undergraduate students gained

moderate knowledge. This indicates that the informational booklet is effective in increasing the knowledge scores on early signs and immediate management of myocardial infarction. There was no statistically significant association found between knowledge score and demographic variables.

Compliance with ethical standards

Disclosure of conflict of interest

No conflict of interest to be disclosed.

Statement of informed consent

Informed consent was obtained from all individual participants included in the study.

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