

Effectiveness of Planned Teaching on Early Signs and Symptoms and Immediate Treatment of Myocardial Infarction in Among Patients

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Abstract: *Aim of study was to assess the Effectiveness of planned teaching on knowledge of early signs and symptoms and immediate treatment of myocardial infarction among patients. Objectives To assess knowledge about early signs and symptoms and immediate treatment of myocardial infarction among patients before and after planned teaching. Methodology one group pretest post test design was used for fifty samples. Findings -Majority of the samples 38 percent were in the age group 51-60 years, majority 82% of them were males 54% of the samples were educated up to the secondary level, spoke and understood Marathi and Hindi; most of them had mixed type of diet. Majority of the samples 54 per cent were in the income group of Rupees 1000-2000 per month. It was found that most of the samples had the habits of tobacco chewing, smoking and alcohol. Seventy two percent of samples were having Ischemic Heart Disease and 28 percent of samples were having Diabetes with Ischemic Heart Disease. 38 percent patients were suffering from Ischemic Heart Disease for less than six months. 18 percent patients were suffering from Ischemic Heart Disease for six months to one year. 16 percent patients were suffering from Diabetes with Ischemic Heart Disease for more than three years. The variation in the percentage of the overall knowledge during the pre-test and posttest showed a marked improvement. In posttest evaluation 80 to 100 percent of the samples were aware of the structure and function of the heart, disease process, risk factors and meaning of the disease. In the posttest evaluation, 90 to 100 percent of the samples were aware of the signs and symptoms, medications, action of drugs, doses of drugs and complications of myocardial infarction. Most of the samples became aware of the modification in diet, exercise, regular medicine and follow up. Conclusion - The planned teaching significantly improves the knowledge and performance among patients. This emphasized that planned teaching plays important and beneficial role in reducing the risk of the disease. Hence nurses must make an attempt to provide health education to patients at risk for myocardial infarction, which would then reduce its incidence and complications*

Keywords: Effectiveness, Teaching, Treatment, Myocardial Infarction, Patients

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]

Myocardial infarction is the leading cause of death in the world. Acute myocardial infarction occurs when the blood supply to any part of heart is interrupted. This is most commonly due to occlusion of coronary artery following the rupture of a vulnerable atherosclerotic plaque, resulting in ischemia and oxygen shortage. If this condition is left untreated for a sufficient period of time it can cause damage and death of heart muscle (myocardium). Myocardial necrosis begins at approximately 30 minutes after coronary occlusion, classic acute myocardial infarction with extensive damage occurs when the perfusion of myocardium is reduced severely below its needs for an extended interval usually at least 2 to 4 hours causing profound, prolonged ischemia and resulting in permanent loss of function of large regions in which cell death has occurred. In contrast if restoration of myocardial blood flow (reperfusion) follows briefer periods of flow deprivation (less than 20 min in the most severely ischemic myocardium) loss of cell viability

can be prevented. This provides the rationale for the very early clinical detections of acute M.I. to permit early therapy such as thrombolysis, establish reperfusion of the area at risk salvage as much ischemic but not yet dead myocardium as possible and consequently minimize infarct size [2].

Acute myocardial infarction is a common cause of death. Most of the deaths are due to ventricular fibrillation occurring soon after the onset of ischemia. Once the patient reaches hospital, the major aim of treatment is to decrease the size of the infarct. Fibrinolytic therapy with streptokinase restores coronary patency and significantly reduces mortality. Aspirin is mandatory unless there is an absolute contraindication [3].

2. Need of the Study

According to a study done in Chicago, school of Nursing, patients experiencing an acute myocardial infarction are known to delay seeking treatment between 2 to 4 hours. Some reasons for delay in seeking medical help are wanting to wait and see, not taking symptoms seriously, not wanting to bother anybody, taking pain medication and asking others for advice [4].

In one small study on 133 patients in an urban community hospital, in Chennai, it was observed that 50% of patients with acute myocardial infarction present to hospital within 3 hours, about 36% delayed seeking treatment by more than 6 hours. Unavailability of transport, treatment by local

practitioners and lack of knowledge of symptoms contributed to this delay [5].

According to another study done by Kentsch, Rodemerk, Muller, and Schnoor, the researchers found that emotional attitudes to Acute Myocardial Infarction (AMI) symptoms like wanting to wait and see, not taking symptoms seriously, not wanting to bother anybody & inadequate coping strategies like asking others for advice, taking pain medications are the determinants of patient decision delay [6].

In a study done in Karachi, it was shown that the vast majority of subjects failed to recognize symptoms of AMI. Factors associated with delayed presentation include lack of knowledge of symptoms of AMI and less severe chest pain. Indo-Asian countries are facing an epidemic of cardiac disease. Yet the level of recognition of symptoms is unacceptably low and consequently there is a significant delay in seeking treatment.

The major elements of prehospital care of patients with suspected M.I. include recognition of symptoms by patients, rapid development of an emergency medical team, expeditious transportation of the patient, expeditious implementation of reperfusion therapy. The biggest delay usually occurs between the onset of pain and the patient's decision to call for help [7].

3. Review of Literature

According to Shinde M reviewing of literature is to gain a better understanding and insight necessary to develop a broad conceptual framework in which the problem can be examined. It helps in the formulation of a specific problem and acquaints the researcher about what is already known in relation to the problem under review. ROL also provides a basis for assessing the feasibility of the research problem and gives information on the research approach [8].

3.1 Review of literature related to structured education programme

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 [9]. 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 [10],[11]. 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 [12]. 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, Structured Education were effective on Knowledge and Practice Regarding Venous Access Device Care among Nurses, Structured Education effective Regarding Menstrual Hygiene Practices among Adolescent Girls. Effectiveness of Slow Back Massage was effective on Quality of Sleep among ICU Patient's. Patient's were satisfied with Nursing Care Provided in Selected Areas of Tertiary Care Hospital. Health Workers were satisfied while rendering Health . [13],[26],[27],[28],[29][30].

3.2 Epidemiology and causation of coronary heart disease in India

Cardiovascular diseases are major causes of mortality and morbidity in the Indian subcontinent, causing more than 25% of deaths. It has been predicted that these diseases will increase rapidly in India and this country will be a host to more than half the cases of heart disease in the world within the next 15 years. Coronary heart disease has increased in both urban and rural areas. Case control studies indicated that tobacco use, obesity with high waist: hip ratio, high blood pressure, high Low Density Lipoprotein cholesterol, low High Density Lipoprotein cholesterol, diabetes, sedentary lifestyles and psychosocial stress are important determinants of cardiovascular diseases in India [14]. The age of presentation of acute coronary syndrome is about 5 to 10 years earlier in Indian patients. An Indian multicentre study that analyzed data from 4081 subjects reported that acute coronary syndrome occurred at a mean age of 56.6 ± 12 years in men and 61.8 ± 10 years in women [15]. The World Bank has reported that in India (Disability Adjusted Life Years) DALYs are projected to more than double in the next 20 years. In 1990, CHD was responsible 5.6 million DALYs in men and 4.5 million in women [16].

3.3 Epidemiology worldwide

The World Health Organization (WHO) estimated that in 2002, 12.6 percent of deaths worldwide were from ischemic heart disease. Ischemic heart disease is the leading cause of death in developed countries, third only to AIDS and lower respiratory infections in developing countries [17].

Heart disease is the biggest killer of men and women in the West, accounting for more than 25 per cent of deaths. It remains the UK's single biggest killer, with someone in the country suffering a heart attack every two minutes. Too many people don't know how to recognize the symptoms, and a significant proportion of people, including women, are more at risk of a heart attack than they believe. But there are plenty of things we can do to keep our hearts healthy like regular exercise, diet control, weight control, stress management and cessation of smoking and alcohol consumption [18].

In developed countries the average age of presentation of Acute Coronary Syndrome is higher and the US National Registry of Myocardial Infarction reported an average age of

66.0 \pm 0.05 years [19] One study indicated that approximately half of cardiac deaths occur within 1 hour of symptom onset, before patients reach to hospital [20].

4. Heart Attack Warning Signs and symptoms

A heart attack is a frightening event; nobody wants to think about it. But, if a person learns the signs of a heart attack and what steps to take, they can save a life—may be their own. Many heart attacks start slowly, as a mild pain or discomfort. If a person feels such a symptom, he may not be sure what's wrong. Their symptoms may even come and go. Even those who have had a heart attack may not recognize their symptoms, because the next attack can have entirely different ones.

- **Chest discomfort-** most heart attacks involve discomfort in the center of the chest that lasts for more than a few minutes, or goes away and comes back. This discomfort can feel like uncomfortable pressure, squeezing, fullness, or pain.
- **Discomfort in other areas of the upper body-** can include pain or discomfort in one or both arms, the back, neck, jaw, or stomach.
- **Shortness of breath-** often comes along with chest discomfort. But it also can occur before chest discomfort.
- **Other symptoms-** May include breaking out in a cold sweat, nausea, or light-headedness. Learning the signs is important but persons need to remember: even if a person is not sure it's a heart attack, he/she should still have it checked out. Fast action can save lives—maybe your own [21].

4.1 Knowledge regarding early signs and symptoms

In one small study on 133 patients an urban community hospital in India, Rajgopalan and colleagues (2001) observed that 36% delayed presentation to the hospital by more than 6 hours. Unavailability of transport, treatment by local practitioners, and lack of knowledge of symptoms contributed to this [5].

A survey was conducted in 18 communities in Beijing between Mar-June 2006. The survey was designed to collect knowledge of heart attack symptoms from sampled adults in each community. A total of 4627 respondents participated and 50.29% of them were female. Sixty-four percent of respondents reported chest pain as a symptom of heart attack and 20.36% correctly reported four or more symptoms; only 7.4% knew all the correct heart attack symptoms and 28.94% knew about reperfusion therapy for heart attack. Public knowledge of common heart attack symptoms as well as less common heart attack symptoms was deficient in Beijing residents. But their knowledge of calling emergency medical services when someone is having heart attack was relatively adequate [22].

According to a state-based telephone survey, in a sample of 61,018 participants in 17 states and the U.S. Virgin Islands, most persons (95%) recognized chest pain as a heart attack symptom. However only 11% correctly classified all

symptoms and knew to call 9-1-1 when someone was having heart attack. Symptom recognition and need to call 9-1-1 was lower among men than women and persons with less education. Persons with high blood pressure, high cholesterol, diabetes mellitus, or prior heart attack were not appreciably more likely to recognize heart attack symptoms than were persons without these conditions [23].

4.2 Women's prodromal and acute symptoms of heart attack

Understanding women's knowledge of risk factors and health promotion behavior is critical because CHD may be prevented or delayed if women practice appropriate risk factor modifications. A recent study conducted by Thanavaro et al., identified health promotion behavior (HPB) and predictors of HPB in women without previous history of CHD. The study involved 119 women who completed surveys regarding their CHD knowledge, HPB, and perceived benefits and barriers to CHD risk factor modification. The results of this study revealed that the women did not practice HPB regularly, had low CHD knowledge levels, and a moderate level of perceived barriers to CHD risk modification. Clearly, there was an obvious disconnect between awareness of risk factors and preventive strategies. This indicates that a better understanding of what women perceive as their barriers to a healthy lifestyle is vital in developing health promotion interventions that are effective in reducing life-threatening risk factors. The researchers suggest that the generalizations of this study are limited because the women were all from the same city and had no prior history of CHD. It is essential to develop a list of women's common and predictive symptoms of CHD so that they may be included into educational materials to assist both women and nurses to recognize their importance. Early recognition, diagnosis, and treatment are vital to improving mortality and disability rates.

4.3 Prehospital delay in acute myocardial infarction-time and causes

In a study done in Rochester it was found that, thirty percent of people who experience symptoms of acute myocardial infarction (AMI) do not seek care until more than 2-6 hours after onset of symptoms, increasing their risk for morbidity and mortality. Using a model based on two frameworks, the common sense model of illness representation (CSM) and goal expectancy, variables associated with delay were examined to identify the most salient predictors of delay in seeking care for AMI. Hierarchical regression analysis revealed that the set of illness representation components from the CSM was a significant predictor of time to seek care, but individually, only recognition of symptoms as being caused by the heart was significant. Providing accurate information on symptoms of AMI may lead to early recognition, reduced delay, and reduced morbidity and mortality [24].

Studies have shown that women delay seeking help longer than men, resulting in higher rates of mortality and morbidity among women. Fifty-two semi-structured interviews were conducted in which women were asked to describe their

experiences from the onset of symptoms to their arrival at the hospital. The reported average delay time of 4 hours was influenced by four factors including social support, personal control, perceived heart disease threat, and neuroticism [25].

5. Statement of Problem

Effectiveness of planned teaching on knowledge of early signs and symptoms and immediate treatment of myocardial infarction in selected high-risk patients in selected hospital of Mumbai

Objectives of the Study

1. To assess knowledge about early signs and symptoms and immediate treatment of myocardial infarction in selected high-risk patients before planned teaching.
2. To administer planned teaching on knowledge of early signs and symptoms and immediate treatment of myocardial infarction in selected high-risk patients.
3. To evaluate the effect of planned teaching on knowledge of early signs and symptoms and immediate treatment of myocardial infarction in selected high-risk patients.
4. To assess the knowledge of early signs and symptoms and immediate treatment of myocardial infarction in relation to education, age and gender.

5.1 Hypothesis

H₀ - There is no significant difference in the pretest and post test mean knowledge scores on early signs and symptoms of myocardial infarction and its immediate treatment in relation to a) education b) gender c) age.

H₁ - Post test mean knowledge scores is significantly higher than pretest mean knowledge scores on early signs and symptoms of myocardial infarction and its immediate treatment in relation to a) education b) gender c) age.

5.2 Assumptions

- High-risk patients may have some knowledge regarding myocardial infarction.
- Factual information given to a patient may enhance his/her knowledge.

5.3 Delimitations

- The study is limited to the selected high-risk patients of myocardial infarction who have history of Angina, Diabetes with Hypertension, Ischemic heart disease and /or Coronary artery disease.
- The study is limited to only one hospital in Mumbai.

5.4 Ethical Aspect

The research committee and the ethical committee approve the research problem and the objectives. Written informed consent will be taken from the samples who will have full right for information regarding the purpose of the study. The privacy and the confidentiality of the information will be ensured. Due permission will be obtained from the authorities. The individual participants have full right to

walk away from the study without assigning any reason to the investigator.

5.5 Research Approach

According to Shinde M (2007), Research approach refers to the overall plan for obtaining answers to the research questions and for testing the hypothesis. The research designs spells out the strategies that the researcher adopts to develop information that is accurate, objective and interpretable⁶⁰ and it helps the researcher in selection of subjects, manipulation of independent variable, observation of a type of statistical analysis to be used to interpret the data[8]. The research approach selected in this study, is a descriptive evaluatory approach, the design adopted for the study was one group pretest, posttest design.

a) Dependent variable

Knowledge regarding early signs and symptoms and immediate treatment of myocardial infarction.

b) Independent variable

Planned teaching on early signs and symptoms and immediate treatment of myocardial infarction.

c) Research Setting

In order to carry out the study and to get an adequate number of samples, the investigator selected one Government Hospital in Mumbai. This hospital is a training institute for medical, paramedical and nursing students. This institute has various speciality and super speciality departments for treatment like plastic surgery, neurology, neurosurgery, cardiac catheterization lab, cardiac surgery, etc.

d) Population

In this study the population consisted of all the high-risk patients admitted in the medical and cardiology wards in the selected Government hospital in Mumbai.

e) Target population

In this study target population consisted of selected high risk patients of angina, diabetes with hypertension, ischemic heart disease and/or coronary artery disease.

f) Accessible population

In this study the accessible population consisted of patients admitted with angina, diabetes with hypertension, ischemic heart disease and/or coronary artery disease in the medical and cardiology wards in the selected Government hospital in Mumbai.

g) Sample

In this study the sample consisted of selected high-risk patients admitted in the medical and cardiology wards and who fulfilled the selection criteria.

h) Sample size

The sample size consisted of fifty selected high-risk patients in the cardiology and medical wards. Criteria for selection of sample

- Patients with angina and / or Diabetes with hypertension and/or IHD and/or CAD.
- Patients who understand and speak Hindi, Marathi or English.
- Patients who are willing to participate in the study.
- Patients who are admitted in the cardiology /medical ward.

i) Sampling technique

- The sampling technique employed for the study was the non-probability purposive sampling. Technique and tool for Data collection
- The technique used for the data collection was interviewing.
- The tool used for the study was a semi structured interview schedule. **The tool consisted of the following parts:**

Section I

The first part of the interview schedule included the demographic data and the family background. The items included were age, sex, education, income, occupation, marital status, type of diet and habits

Section II

This part induced the medical data consisting of diagnosis, tests done to confirm the diagnosis and any other associated conditions.

Section III

This part of the interview schedule consisted of 34 items and related to knowledge of early signs and symptoms and immediate treatment of myocardial infarction.

Section III was further divided into four parts.

IIIA This part consisted of questions related to structure and function of heart.

IIIB In this part included questions related to development of Coronary Artery Disease.

IIIC In this part included questions related to indicative signs and symptoms.

IIID This part consisted of questions related to immediate treatment of myocardial infarction

f) Income: Fiftyfour percent of the samples were in the income group of Rs. 1001-2000 per month, 32 percent had an income of Rs.<1000. Only 14 percent had an income Rupees >2000.

g) Occupation: It was found that 58 percent of the samples were doing some jobs like driver, watchman, carpenter, peon, some clerical work. The main cause of stress on them was absentism and irregularities on duties due to disease condition.

h) Habits: It was noticed that majority of the samples i.e. 72 percent were having unhealthy habits. Total number of smokers was six percent. Tobacco chewing was found in 26 percent of the samples, out of which 10 percent were heavy and chronic chewers. Nearly 12 percent of the samples had more than one of these unhealthy habits (which were mostly smoking, tobacco, and alcohol)

i) The findings of the investigators study can be related to the study done by 'Lindsay & Gaw' (2004) on the Coronary artery disease, consequences of smoking, which highlights those smokers, are at a high risk for Coronary Artery Disease.

Present complaints: Seventy percent of samples were having Ischemic Heart Disease. Twenty eight percent of samples were having Diabetes with Ischemic Heart Disease. Thirty eight percent patients were suffering from Ischemic Heart Disease for less than six months, 18 percent patients were suffering from Ischemic Heart Disease for six months to one year and 16 percent patients were suffering from Diabetes with Ischemic Heart Disease for more than three years.

All the samples were on medication according to their disease condition.

II. Knowledge regarding location and function of the heart

Structure and function of heart: It was observed that 68 percent of the samples were aware of the position of the heart, 56 percent of the samples were aware of function of the heart and only 2 percent were aware of the fact that arteries supply blood to the heart muscle. In the post test taken after teaching marked improvement was observed The revised percentages were 100,92,and 76 respectively.

III. Knowledge Regarding meaning, Effect on blood vessels, Risk factors, Effect of unhealthy habits.

A remarkable improvement in the knowledge regarding the meaning, effects on blood vessels, risk factors and effect of unhealthy habits was observed during the post-teaching phase. The improvement found in above-mentioned areas was as follows:

- Knowledge regarding meaning of CAD changed from 16 percent to 70 percent.
- Knowledge regarding meaning of Atherosclerosis changed from 6 percent to 98 percent.
- Knowledge regarding meaning of Myocardial Infarction changed from 36 percent to 98 percent.
- Regarding the effect of atherosclerosis on blood vessels the change was from 12 percent to 100 percent.

6. Findings and Discussion**I. Demographic Data**

- Age:** It was observed that majority of the samples i.e. 36 percent and 38 percent was in the age group 41-50 years and 51-60 years respectively. Only 20 percent were in the age group of 61 years and above. None of the samples were less than 30 yrs of age. The findings of the investigators study can be related to the study done by Enas EA, Garg A, Davidson MA, Nairs VM, Huet BA, Yusuf S. (2003). The findings of the study were the prevalence of Coronary Artery Disease (CAD) in the age group of 40-50 years in urban India is higher than in the United States (10% v. 2.5%).
- Sex:** Findings showed that majority of samples, 82 percent were male and the remaining 18 percent were females.
- Educational status:** It was evident that 18 percent were educated up to primary and 54 percent were educated up to secondary level. Only 12 percent were educated up to higher secondary and six percent were graduates.
- Diet:** Majority of the samples 82 percent were taking mixed type of diet and the rest 18 percent were pure vegetarian.
- Language:** Majority of the samples i.e.68 percent spoke Marathi and 30 percent spoke Hindi. Only 2 percent understood and spoke English.

e) Awareness regarding effect of unhealthy habits- very few samples were aware of effects of alcohol, tobacco chewing, and smoking on coronary artery disease. Posttest results showed 70 to 80 percent increase in knowledge. Those samples that were heavy smokers, drinkers and tobacco chewers agreed to stop smoking, tobacco chewing and alcohol consumption after gaining the knowledge of effect of tobacco and alcohol. Majority of samples were aware about effect of fried food on health. Majority of samples were eager to know regarding diet pattern, what to eat and what not to eat.

The effect of planned teaching on the knowledge regarding the disease condition was analyzed using 't' test and the calculated value of $t = 14.33$, which was significant at $P \leq 0.01$ level.

IV. Knowledge Regarding Early signs and symptoms of Myocardial Infarction.

Signs and symptoms: It was found that majority i.e. 96 percent of the samples were aware of chest pain as a symptom of myocardial infarction. Twelve percent were aware regarding nausea and vomiting symptom and 68 percent were aware about shortness of breath as many of them experienced during their ischemic attack. Fourteen percent were aware regarding profound weakness. The posttest result showed marked improvement in the knowledge from 70 to 80 percent.

Characteristics of chest pain

It was noticed that 44 percent of the samples were aware of characteristics of chest pain. In posttest result 82 percent increase in the knowledge was seen. Knowledge of samples regarding location of pain was 78 percent. In posttest result 100 percent increase in the knowledge was seen. It was observed that 42 percent of samples were aware of radiation of pain. Post test results showed 94 percent of the samples became aware of it.

Common test for diagnosis: It was noticed that 76 percent of the samples were aware of electrocardiogram, which is the common test used for diagnosis. In post test the percentage increased to 98 percent.

Majority of samples thought chest pain was due to indigestion or gas trouble. Among the samples those who have angina attack also remained at home in spite of seeking medical help or taking any medication. Some drank soda as a treatment. Some sat in the chair whole night. After teaching samples understood associative symptoms of heart attack and they agreed to seek medical help soon after symptoms. There was significant improvement in the knowledge regarding early signs and symptoms after planned teaching which was statistically proved by 't' test, the $t = 11.42$ that was significant at ($P \leq 0.01$) level which was greater than table value.

V. Knowledge regarding immediate action after chest pain and medication.

Immediate action after chest pain: Though 96 percent of the samples were aware of chest pain as indicative symptom of myocardial infarction, 54 percent of the samples said 'chest massage' as the first action after chest pain. Four percent of the samples said 'resume the work' and 36 percent said 'stop activity immediately'. But in post test result marked improvement of 96 percent was observed in the knowledge of samples.

Medication: Only 26 percent and 18 percent of the samples were aware about tablet Sorbitrate and tablet Aspirin respectively which is to be taken immediately after chest pain. Though some of the samples have Ischemic heart disease for more than 5 years. In post test result 100 percent of the samples showed increase in knowledge about tablet Sorbitrate and 94 percent of the samples showed increase in knowledge about tablet Aspirin.

Eight percent of the samples were aware about the dosage of the Sorbitrate and when to be repeated and 100 percent of the samples showed increase in knowledge about dose of the Sorbitrate and when to be repeated. Eighty percent of the samples were aware about medical help should be taken immediately after chest pain but many of the samples had never gone to doctor after ischemic attack. Post test result showed 98 percent improvement in the knowledge.

Knowledge regarding effect of tablet Sorbitrate and Aspirin was observed 20 and 8 percent respectively. In the post test result only 46 and 28 percent of the samples showed improvement in knowledge respectively. The majority of the samples showed interest in name of the tablets, how to take it and dosage of the tablets. Knowledge regarding advantages of immediate treatment after chest pain was observed in 58 percent where as the post test result showed a remarkable improvement of 94 percent in knowledge. The overall knowledge regarding immediate treatment after chest pain was statistically proved significant through calculated value of $t = 16.61$ that was significant at ($P \leq 0.01$) level which was greater than the table value.

7. Conclusion

This study revealed that there was significant difference in the knowledge regarding early signs and symptoms and immediate treatment of myocardial infarction before and after planned teaching. It was evident that planned teaching significantly improves the knowledge regarding myocardial infarction. Thus this planned teaching programme was found to be effective in increasing the knowledge of the patients at high risk for myocardial infarction.

8. Scope of the study

As coronary artery disease is increasing, risk of myocardial infarction is also increasing. Nurses can play an important role by increasing the awareness in high-risk patients regarding recognizing early signs and symptoms and

immediate treatment of myocardial infarction. It can be done in indoors setting, outdoor patients and in the community. This will help the patients and family members to identify early signs and symptoms and can seek medical care. It will prevent damage to myocardium and complications like ventricular fibrillation. Patients can be benefited by thrombolytic therapy if patients are admitted in the first few hours after the onset of symptoms. The findings will help the hospital team to educate the high-risk patients regarding importance of recognizing early signs and symptoms and immediate treatment of myocardial infarction. The findings will be beneficial to the nursing educators, to strengthen this aspect of importance of recognizing early signs and symptoms and immediate treatment of myocardial infarction in high-risk patients in the training programme.

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