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A Study To Assess The Effectiveness Of Structured Teaching Programme On Knowledge Regarding Newer Modalities Of Angioplasty Among Students At Selected Schools Of Nursing, Bangalore

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ABSTRACT :

BACKGROUND OF THE STUDY

Cardiovascular disease is the leading global cause of death, the number of deaths is expected to grow to more than 23.6 million by 2030. Angioplasty is the treatment of choice for patients with cardiovascular diseases in acute or chronic stages. Various new technical devices are available for effective angioplasty, Like excimer laser for photo ablation of plaque (blockage) and rotational atherectomy for mechanical ablation of plaque. Both are very effective for complicated disease conditions of arteries.

Nurses are playing a critical role in Cardiac Catheterization Lab to deliver high quality care to the patients. So for nursing students its essential to have knowledge of these newer modalities of angioplasty to develop personal abilities, they should have access to and be active participants in certain health care situations, and they should have the opportunity to reflect on acting personally in professional environment.

Objectives of the study:

To assess the knowledge regarding newer modalities of angioplasty among students at selected schools of nursing.

To evaluate the effectiveness of structured teaching programme on knowledge regarding newer modalities of angioplasty among students

To determine the association between post test knowledge on newer modalitiesof angioplasty among students and selected demographic variable

HYPOTHESIS:

H1 – There is a significant improvement in knowledge regarding newer modalities ofangioplasty.

H2 – There is significant association between knowledge scores and selected socio-demographic variables.

METHODS

A Quasi experimental design was used to evaluate the effectiveness of structured teaching programme regarding newer modalities of angioplasty among students at selected schools of nursing Bangalore.

The data was generated by using structured questionnaire. Simple random sampling technique was adopted to select 60 subjects from New Sarvodaya School of Nursing, Bangalore. The data was obtained from the study; subjects were analyzed and interpreted in terms of the objectives and hypothesis of the study. Descriptive and inferential statistics were used for the data analysis and the P value set at 0.05 levels.

INTRODUCTION :

Health is related deeply to life-style. Supreme health will however, always remains an illusion, because the whole thing in our life is subject to change. Health may be described as a potentiality or the aptitude of an individual or a social group to modify him continually, in the face of changing conditions of life not only, in order to function better in the present but also to prepare for the future. If the person is unhealthy, there's nothing much that he could do to be productive in life. His actions as limited since he will have a lot of things which he is prohibited to do.

NEED FOR THE STUDY

Coronary heart disease (CHD) is the single largest cause of death in the developed countries and is one of the leading causes of disease burden in developing countries. In 2001 there were 7.3 million deaths due to CHD worldwide. Three-fourths of global deaths due to CHD occurred in the low- and middle-income countries.[20] cardiovascular disease (CVD) currently accounts for nearly half of non-communicable diseases (NCDs). NCDs have overtaken communicable diseases as the world's major disease burden, with CVD remaining the leading global cause of death, accounting for 17.3 million deaths per year, a number that is expected to grow to >23.6 million by 2030. [21]

Currently, the key challenges that face cardiac care in India are inadequate facilities, poor accessibility, the price tag attached to efficient and effective treatment, lack of awareness of non-communicable diseases. Apparently, demographic projections suggest a major increase in cardiovascular disease mortality as life expectancy increases and the age structure of the growing population changes. Out of 30 million heart patients in India, 14 million reside in urban areas and 16 million in rural areas. If the current trend continues, by the year 2020, the burden of atherothrombotic cardiovascular diseases in India will surpass that of any other country in the world.[5]

A study presented at the 67th Annual Conference of the Cardiological Society of India, reported that, among 310 patients who presented with acute coronary syndrome (ACS) during a two-year period to the emergency department of Sir Sunderlal Hospital and the frightening statistic is that the average age of these patients was only 30 years old and 90% of them the were male, with the youngest ACS patient is having 15 years of age.[22]

In India, there has been a steady 25-30 percent annual increase in the number of coronary procedures over the past several years.[2] Approximately 70,000 angioplasties done in 2007 and 73% were drug eluting stents. Out of these, 10% of the patients were less than 40 years and another 10% older than 70 years of age.[23]

A report on work package II, Comparing activities and performance of the hospital sector in Europe reported that the use of angioplasty has increased rapidly since 1990 in all European countries, overtaking coronary bypass surgery as the preferred method of revascularization around the mid 1990s . In most European countries, angioplasty now accounts for at least 75% of all revascularizations. In Spain and France, it reaches almost 90%. The EU average is close to 80%, up from 60% in 2000. Countries such as Romania, Spain and Sweden, which had low rates of angioplasty in 2000, have observed high annual growth rates since then. Many countries have trapped up with the early adopters of this technology.[24]

Interventional cardiology appeared with the development of balloon angioplasty about 20 years ago, and has undergone wonderful changes since then. The coronary balloon was brought to a mature development stage, being the major "workhorse" of interventional cardiology. Various atherectomy techniques, like rotational atherectomy and laser angioplasty, aimed at removing plaque material, have been developed and showed immediate beneficial effects on the angioplasty results. Atherectomy are emerging as a breakthrough technology which has been proven to prevent restenosis and provide an important adjunctive device for suboptimal results following balloon angioplasty. In summary, interventional cardiologists today are provided with a set of tools from which they can select the appropriate ones for each lesion subset.[25]

A study investigated the advantage of immediate cardiac catheterization with percutaneous transluminal coronary angioplasty (PTCA), when appropriate, over the

procedures performed 18 to 48 hours later. All patients were treated with intravenous recombinant tissue—type plasminogen activator within four hours of the onset of acute myocardial infarction. Percutaneous transluminal coronary angioplasty of the infarct-related artery was attempted in 72% of the 195 patients assigned to immediate PTCA; 84% of the attempts were judged to have shown improvement. Percutaneous transluminal coronary angioplasty was attempted in 55% of the 194 patients assigned to 18- to 48-hour PTCA; 93% of the attempts were judged to have shown improvement.[26]

In an article, published in Istanbul, reported that rotational atherectomy clears blockages in the coronary arteries in order to improve blood flow to the heart and relieve symptoms of coronary artery disease. The procedure may be performed instead of or in addition to other procedures and can improve both the immediate and long-term success of balloon angioplasty and stenting although it is no longer a common procedure, it does play an important role in interventional cardiology. When the challenging atherosclerotic coronary artery lesions cannot be crossed by a balloon or cannot be adequately dilated even with non- compliant balloon, such lesions may be better treated by rota-ablation.[27]

A study was conducted to make comparison between either excimer laser or rotational atherectomy can improve the initial angiographic and clinical outcomes compared with balloon angioplasty alone. Total 685 patients with symptomatic coronary disease warranting elective percutaneous revascularization for a complex lesion were randomly assigned to balloon angioplasty (n=222), excimer laser angioplasty (n=232), or rotational atherectomy (n=231).The results showed patients who underwent rotational atherectomy had a higher rate of procedural success than those who underwent excimer laser angioplasty or conventional balloon angioplasty (89% versus 77% and 80%, P=.0019), but no difference was observed in major in-hospital complications (3.2% versus 4.3% versus 3.1%, P=.71).

Procedural success of rotational atherectomy or excimer laser angioplasty is superior to balloon angioplasty.[28]

OBJECTIVES :

Statement of the Problem:

"A study to assess the effectiveness of structured teaching programme on knowledge regarding newer modalities of angioplasty among students at selected Schools of Nursing, Bangalore ''

Objectives of the study:

1. To assess the knowledge regarding newer modalities of angioplasty among students at selected schools of nursing.

2. To evaluate the effectiveness of structured teaching programme on knowledge regarding newer modalities of angioplasty among students.
3. To determine the association between post-test knowledge on newer modalities of angioplasty among students and selected demographic variable

Operational definiton

1. **Effectiveness:** It Refers to the extent to which the structured teaching program me has helped in gaining knowledge on newer modalities of angioplasty e.g. rotational and laser angioplasty after administering structured teaching programme among students assessed by response to structured knowledge questionnaire.

2. **Structured Teaching Programme:** It refers to the systematic planned group instructions designed to provide information on anatomy and physiology of cardio vascular system, definition, indications, contraindications, procedure, pre and post procedural nursing care of newer modalities of angioplasty by lecture cum discussion method for 45 minutes using AV aids such as LCD projector, flash cards and charts.

3. **Angioplasty**: coronary angioplasty or simply angioplasty, is a non-surgical procedure used to treat the stenotic (narrowed) coronary arteries of the heart found in coronary heart disease. These stenotic segments are due to the buildup of the cholesterol-laden plaques that form due to atherosclerosis.

4. **Newer Modalities Of Angioplasty:** It refers to newly developed techniques of angioplasty, which are used for reopening of narrowed or blocked arteries in the heart (coronary arteries) without major surgery. In this study researcher includes two types of newer modalities of angioplasty. They are rotational atherectomy and laser angioplasty.

5. **Rotational atherectomy angioplasty:** Atherectomy is a procedure in which plaque is removed from the inside of an artery. Different methods are used to perform atherectomy. One method, called rotational atherectomy, involves the use of a special burr or drill on thetip of a catheter that rotates to shave the plaque into tiny pieces.
6. **Laser angioplasty**: In this technique, a flexible plastic tube (a catheter), connected to a laser, is inserted though the leg and into the circulation. It is moved to the site of the blockage and the laser then used to burn away the deposits. This procedure may be done on its own or with other techniques to help remove the deposits and/or keep the blood vessel open.

7. **Students:** It refers to the students who are studying for 2nd and 3rd year General Nursing and Midwifery course (G.N.M) in selected school of nursing at Bangalore
8. **Selected School Of Nursing:** New Sarvodaya School of nursing, Bangalore.

Review of literature :

Review of literature provides the basis for the future investigations justifies the need for replication, throws light up on feasibility of the study, and indicates constraints of data collection and help to relate findings of one another.

Review of literature is the systematic and critical review of the most important published scholarly literature on a particular topic. This helps the investigator to find out what is already known, and what problems remain to be solved. Since effective research is based upon past knowledge, this exercise provides useful hypothesis and suggestions for significant investigation.

The review of the work conducted in an area of general interest can help in the formulation or clarification of a research problem. Scrutiny of previous work acquaints the researcher with what has been done in a field there by, minimizing the possibility that a new study will make a distinctive contribution to knowledge. With the review work the researcher may be in a better position to assess the feasibility of a proposed study by familiarity with related work.

The literature review was based on an extensive survey of books, journals, and international nursing studies. A review of search helped the investigator to develop deeper insight in to the problem and gain information on what has been done in the past. The review of the literature related to the purpose of the study has been given under the following headings.

Review is categorized under following headings:

Review related to

1. INCIDENCE, PREVELANCE AND RISK FACTORS RELATED TO CARDIOVASCULAR DISEASE
2. PERCUTANEOUS TRANSLUMINAL CORONARY ANGIOPLASTY (PTCA)
3. ROTATIONAL ANGIOPLASTY
4. LASER ANGIOPLASTY
5. NURSES KNOWLEDGE AND PRACTICE REGARDING ANGIOPLASTY

METHODOLOGY :

Research methodology is a systematic way to solve the research problem (1990). It consists of all general and specific activities from identification of the problem to final interpretation, direction and conclusion. The role of methodology is to carry on the research work in a scientific and valid manner. It includes research approach, research design, setting, sample, criteria for sample selection, sampling technique, development and description of the tools, development of structured teaching program, pilot study, data collection procedure,plan for data analysis and protection of human subjects.

The present study aims to assess the effectiveness of structured teaching programme on knowledge regarding newer modalities of Angioplasty among students at selected schoolsof nursing Bangalore.

Research Approach

A research approach tells the researcher what data to be collected and how to analyse it. It also suggests possible conclusion to be drawn from the data.

In view of the nature of the problem selected for the study and objectives to be accomplished, an evaluative research approach was considered as appropriate for the present study **Research Design**

The research design has been considered a "blueprint" for research, dealing with at least four problems: what questions to study, what data are relevant, what data to collect, and how to analyse the results.

One group pre-test-post-test research design, (O1XO2) which belongs to Qausi-experimental design was selected to assess the knowledge of nursing students on newer modalities of

angioplasty. The quasi-experimental design consists of pre-test and post-test observations made on different days with only one of selected group and without a control group.

: Outline of study design

01: Administration of Structured questionnaire to assess the knowledge on newer modalitiesof angioplasty.

X: Administration of structured teaching program on newer modalities of angioplasty.

02: Administration of Structured questionnaire after intervention on 7th day to assess the knowledge of nursing students on newer modalities of angioplasty.

RESULTS :

This section presents the analysis and interpretation of data collection from 60 students in order to assess the effectiveness of structured teaching program about newer modalities of angioplasty. The data collected from the nursing students before and after the structured teaching programme was organized, tabulated, analysed and interpreted by using descriptive and inferential statistics. The data collection was done based on the objectives of the study.

OBJECTIVES OF THE STUDY :

1. To assess the knowledge regarding newer modalities of angioplasty among students atselected schools of nursing.
2. To evaluate the effectiveness of structured teaching programme on knowledge regarding newer modalities of angioplasty among students.
3. To determine the association between posttest knowledge on newer modalities of angioplasty among students and selected demographic variable

Major findings of the study :

The findings of the study are discussed under the following headings:

SECTION - 1: Demographic Characteristics of Respondents

SECTION – 2A: Overall and Aspect wise Pre-test Knowledge Scores of Respondents onNewer Modalities of Angioplasty

SECTION – 2B: Overall and Aspect wise Post-test Knowledge Scores of Respondents onNewer Modalities of angioplasty

SECTION – 2C: Overall and Aspect wise Pre-test and Post-test Knowledge Scores ofRespondents on Newer Modalities of Angioplasty

SECTION - 3: Association between Demographic variables and Post-test Knowledge levelon Newer Modalities of Angioplasty

DISCUSSION :

Structured teaching programme is an effective teaching strategy and should be encouraged. The pre-test STP was prepared with the aim of improving knowledge of studentson newer modalities of angioplasty.

The study was quasi experimental with one group pre-test- post-test design (O1 X O2).The sample consisted of 60 students from New Sarvodaya school of nursing, Bangalore. Simple random sampling by lottery method was used this study was conducted over a period of 4 weeks from 15-02-16 to 15-03-16.

Demographic variable according to age of 60 samples shows 22 (36.7percent) were in the age group of 19-20 years, and 20 (23.3 percent) participants were in the age group of 20- 21 years, and 18(30.0 percent) were in the age group of 23+ years .In this study out of 60 participants 19 participants (31.7 percent) were males and remaining participants 41(68.3 percent) were females. 47(78.3 %) participants are from Hindu religion and remaining 13(21.7%) are from Christian religion. 16(26.7%) participants are non-vegetarian and 44(73.3%) respondents are having mixed diet pattern. Out of60 participants 2 participants (3.3%) had the habit of smoking and other 2 participants (3.3)% had the habit of alcoholism.22 participants (36.7%) are having previous source of information regarding newer modalities of angioplasty, the sources of information are newspaper for 3 participants (5%), educational seminar for 8participants (13.3%), television for 7participants (11.7%) and
relatives for 4participants (6.7%) .Remaining 38(63.3%) participants didn't have information regarding the newer modalities of angioplasty.

CONCLUSION :

Objectives of the study:

1. To assess the knowledge regarding newer modalities of angioplasty among students at selected schools of nursing.
2. To evaluate the effectiveness of structured teaching programme on knowledge regarding newer modalities of angioplasty among students.
3. To determine the association between posttest knowledge on newer modalities of angioplasty among students and selected demographic variable.

On the basis of the findings of the study the below said conclusion were drawn. It also brings out the limitations of the study in to picture. The implications given on various aspects like nursing education, nursing practice, nursing administration and also gives insight in to future studies.

- The knowledge of students regarding newer modalities of angioplasty was inadequate as assessed during the pre-test and the inadequate knowledge score was 42, moderately adequate score was 18.
- The knowledge has considerably improved during post-test and there were 40 adequate knowledge scores and only 20 moderately adequate knowledge scores structured teaching programme regarding newer modalities of angioplasty was effective in improving theknowledge.
- The significant difference between the pre-test and post-test knowledge scores was demonstrated by using the "t test". The analysis of Mean, SD of the knowledge scores in pre-test and post test revealed that the mean pre-test knowledge score was 12.72whereas the post-test mean score was 25.02.This shows high mean difference (12.30) in the effectiveness of STP. Overall area wise findings revealed that the effectiveness of theSTP was more when compared to the pre-test knowledge.
- This study shows that there was no significant association between the pre-test knowledge scores and demographic variables such as age, religion and habits.
- There was significant association between the pre-test knowledge scores and demographic variables such as gender, type of diet, previous source of information, source of information.

SUMMARY :

The purpose of the study is to assess the knowledge of students regarding newer modalities of angioplasty. Structured teaching programme is an active teaching strategy and should be encouraged. The study was quasi experimental with one group pre-test- post-test design with evaluative approach was implemented to assess the effectiveness of Structured teaching programme on newer modalities of angioplasty. A structured questionnaire was prepared and used to collect the data and to assess the level of knowledge of students of New Sarvodaya school of Nursing.
The prepared questionnaire was validated by the subject experts and the reliability of the test was tested by using Spearman Brown prophecy formula. The data obtained were analyzed and interpreted in terms of the objectives and hypothesis of the study. Descriptive and inferential statistics were used for data analysis; the level of significance was set at 0.05. The sample consisted of 60 students from New Sarvodaya School of Nursing, Bangalore. Simple random sampling technique was used. The study was conducted over a period of four weeks, from 15-02-16 to 15-03-16.

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