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A STUDY TO ASSESS THE EFFECTIVENESS OF STRUCTURED TEACHING PROGRAMME ON KNOWLEDGE OF STAFF NURSES REGARDING CARE OF PATIENTS WITH CARDIAC PACEMAKER IN SELECTED HOSPITAL, BANGALORE

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ABSTRACT

Background of the study: *Cardiac conduction disease claims 50% of mortality in each year. In these conditions, implantation of an artificial pacemaker is mandatory. Currently around 8000 pacemakers are being implanted annually in India. Competent management of patients with an invasive pacemaker is an important skill for nurses who provide care for critically ill patients with cardiac disease. Knowledge on pacing physiology, components of pacing system, indications for pacing, post pacemaker implantation care, trouble shooting of pacemaker problems, patient and family teaching and long term follow up are required for providing safe and effective nursing care. Statement of the problem:A study to assess the effectiveness of structured teaching programme on knowledge of staff nurses regarding care of patients with cardiac pacemaker in selected hospital, Bangalore.**Objectives of the study** :To assess the pre-test knowledge scores of staff nurses regarding care of patients with cardiac pacemaker. To determine the effectiveness of structured teaching programme on care of patients with cardiac pacemaker by comparing pre and post-test knowledge scores. To find out the association between pre and post-test knowledge scores with the selected demographic variables.**Methods** An evaluative approach was adopted and a pre-experimental design was used for the study. 50 Staff nurses working in areas like Cardiothoracic ICU, Emergency, Operation Theatre, Recovery Room, Cath Lab and Post-Operative Ward of Sagar Hospital, Bangalore were the samples. The samples were selected by purposive sampling technique. Structured knowledge questionnaire was used to collect the data from staff nurses.* ***Results*** *Findings of the study revealed that the post-test mean score was 27.44 with the standard deviation of 2.29 and the respondents' knowledge were significantly higher than, the mean pre-test knowledge scores 17.28 with a standard deviation of 3.51 and the computed paired 't' value 36.04 is higher than table value 1.68 at $p<0.05$ level. Hence the structured teaching programme on care of patients with cardiac pacemaker was effective and statistically significant. The study reveals that there is a significant association between age, area of working and total years of experience with the pretest knowledge scores of staff nurses at $p< 0.05$ level and there is no association between selected demographic variables like gender, education and previous exposure to the topic in relation with the pre-test knowledge scores of staff nurses.The present study also reveals that there is a significant association between the variable total years of experience with post-test knowledge scores at $p<0.05$, and no significant association has been found between other demographic variables like age, gender, education, area of working and previous exposure to the topic in relation with post-test knowledge scores of staff nurses. Interpretation and* ***Conclusion*** *Findings of the study revealed that there was significant improvement in the knowledge of staff nurses after the structured teaching*

programme on care of patients with cardiac pacemaker. Hence it can be concluded that structured teaching programme is an effective method to improve the knowledge of staff nurses working in hospital.

Keywords : Structured Teaching Programme; Cardiac Pacemaker; Staff Nurses; Knowledge

INTRODUCTION

Less than a century ago heart disease was an extremely rare condition. However, today it is the cause of death of more people in the world than all other deadly diseases taken together.[1]Cardiac conduction disease claims 50% of mortality in each year. In these conditions, implantation of an artificial pacemaker is mandatory.[2]

Competent management of patients with an invasive pacemaker is an important skill for nurses who provide care for critically ill patients with cardiac disease. Such management requires familiarity with normal cardiovascular anatomyand physiology, conduction system defects, basic understanding of pacemaker, sensitivity and capture, observing for changes that would indicate the need for modifications in pacemaker settings, care of insertion site, routine threshold testing, and management of pulse generator.[3]

MATERIALS AND METHOD

NEED FOR THE STUDY

Cardiac pacing was introduced in India in 1966.Currently around 8000 pacemakers are being implanted annually in India.[4]A worldwide cardiac pacing and Implantable Cardioverter Defibrillator survey was conducted in the year 2001 among fifty countries. Survey shows that the United States has the largest number of cardiac implants and Germany has the highest new implants per million population. All countries that participated in the 1997 survey showed significant increase in implant numbers over the past four years.[5]

In an article “Pacemaker Implantation: The Nurse’s Role”, the author takes an in-depth look at the role of a cardiac nurse in a coronary unit of a hospital, where the nurses perform an important part in treating medical emergencies which seriously affect a patient's life. Nurses involve in various duties during pre-operative care, while pacemaker is being implanted, and during post-operative phase. If she detects any complication, she strives to bring an early solution to the problem. In order to carry out these duties, prior knowledge will provide nurses with a sureness of how to act when faced with emergencies.[6]

During the investigator’s clinical experience, it was found that nurses working in cardiac units are encountering difficulties in providing competent care to the patients who are on Cardiac Pacemaker. So, the above listed factors created an interest in the investigator’s mind to assess the knowledge level of staff nurses regarding care of patients with cardiac pacemaker and to administer a Structured Teaching Programme as an organized protocol to offer direction to the nurses, enhancing their efficiency and success in providing care.

REVIEW OF LITERATURE

A study was conducted to explore and review the evidence behind current practice regarding wound management and lead displacement after cardiac device implantation. No national/international guidelines address postoperative care and controversy exists regarding wound management and arm movement following cardiac device implantation. An electronic search of the databases EMBASE,

British Nursing Index, CINAHL, Cochrane and PubMed were done to identify evidence regarding wound management and lead displacement. Results reveal that certain aspects of established practice are based on tradition rather than evidence.[7]

An experimental, multi-centre, randomized study with a nurse-led intervention was conducted with the aim of evaluating the effects on health-related quality of life, of a ten-month self-care program for pacemaker patients in Sweden. Results show that there is a significant decrease in the symptoms that were the reason for pacemaker implantation and a higher level of perceived exertion in a one-and-a-half-minute stair test compared with patients who had standard check-ups. Results reveal that, it is important to actively include pacemaker patients in a self-care program while still in the acute phase in the hospital. Nurses should support the patient in a kind and professional manner by providing clear, relevant information, and planning a self-care program based on the nurse's assessment of the patient's needs. To enable patients to manage their life situations, training and continued education for nurses is necessary so that their efforts will be based on a holistic approach to nursing care.[8]

A cross-sectional descriptive study was performed on nurses of Kerman University affiliated hospitals in 2007. Data was collected by a researcher-made questionnaire with 36 questions on nursing care. They concluded that considering the nurses' lack of information on patient education and the critical situation of these patients, establishing nursing re-education courses and adding courses with functional content to nursing curriculum are suggested.[9]

RESEARCH HYPOTHESIS

H1: There will be a significant difference between pre and post-test knowledge scores of staff nurses on the care of patients with cardiac pacemaker.

H2: There will be a significant association between pre and post-test knowledge scores of staff nurses with selected demographic variables

CONCEPTUAL FRAMEWORK

The conceptual frame work selected for this study is based upon the general system theory developed by Ludwig Von Bertalanffy (1968).

VARIABLES

Independent variable

The independent variable in this study is the structured teaching programme on care of patients with cardiac pacemaker.

Dependent variable

The dependent variable in this study is the knowledge of staff nurses regarding care of patients with cardiac pacemaker.

DEVELOPMENT OF THE TOOL

After an extensive review of literature, discussion with the guide and various experts in the field of medical surgical nursing and based on the investigators personal experience, the structured knowledge questionnaire on care of patients with cardiac pacemaker was developed.After validation, the tool was subjected to test for its reliability.

Tool consists of two sections, section A and section B. Section A consists of demographic variables

like age, gender, education, experience, working area of the participants and previous exposure to the topic and source of information. The section B consists of 35 items regarding the knowledge on the care of patients with cardiac pacemaker.

DEVELOPMENT OF STRUCTURED TEACHING PROGRAMME

The first draft of the structured teaching programme on the care of patients with cardiac pacemaker was developed based on the objectives of the study and was given to ten experts along with objectives and the criteria rating scale. Based on their suggestions and recommendation the final draft of the structured teaching programme was developed.

DATA ANALYSIS

Descriptive Statistics Percentage, mean, median and standard deviation was used to explain demographic variables and compute pre-test and post- test knowledge scores.

Inferential Statistics:

Parametric test:Paired't' test was used to compare pre-test and post-test knowledge scores.

Non-parametric test:Chi-square (χ^2) test and Fisher's exact Probability test was used to study the association between pre-test and post-test knowledge scores with selected demographic variables.

PILOT STUDY

The pilot study was conducted to find out the feasibility of the tool. The pilot study revealed that the overall post-test mean knowledge score 23.5 was higher than the overall pre-test mean knowledge score 16.2. The time taken for conducting pre-test and post-test was 35 minutes and for the structured teaching programme was given for 45 minutes. Hence the study was considered feasible.

DATA COLLECTION PROCEDURE- INTERVENTION

The structured teaching programme was administered at the end of the pre-test and the post-test was carried out seven days later using the same tool as that of the pre-test.

RESULTS AND DISCUSSION

- With respect to age, majority 88% of the respondents were in the age group of 21- 25 years.
- With respect to gender, majority 86% of the staff nurses were females.
- With respect to education, majority 40% of staff nurses were qualified with GNM.
- With respect to the area of working of staff nurses, 30% have experience in Cardiothoracic ICU and another 30% in Cath lab / Post-Operative Ward respectively.
- With respect to the work experience of the respondents, majority 48% of staff nurses have 1-3 yrs work experience.
- With respect to previous exposure to the topic, majority of staff nurses 74% do not have previous knowledge on care of patients with cardiac pacemaker.
- With respect to the source of knowledge, 76.9% got knowledge from In-service Education.

The present study found that among 50 respondents, 30(60%) had inadequate knowledge, 20(40%) had moderate knowledge and none of them had adequate knowledge regarding care of patients with cardiac pacemaker.

The present study found that among 50 respondents 33(66%) had adequate knowledge scores, 17(34%) had moderate knowledge and no subjects had inadequate knowledge after the structured teaching programme on care of patients with cardiac pacemaker.

In the present study, the respondents overall post-test knowledge score 27.44 with standard deviation of 2.296 was significantly higher than the overall mean pre-test knowledge scores 17.28 with a standard deviation of 3.517 and computed paired't' value 36.04 is higher than table value 1.68, which shows the structured teaching programme was effective at $p<0.05$ level.

The study result revealed that the structured teaching programme was effective in terms of gain in knowledge of staff nurses regarding care of patients with cardiac pacemaker.

Hence, the first hypothesis **H_1-**There will be significant difference between pre-test and post-test knowledge scores of staff nurses on the care of patients with cardiac pacemakeris accepted.

The obtained pre-test chi-square value of the variable area of working (χ^2=4.089, $p < 0.05$), total years of experience (χ^2=16.343, $p < 0.05$) and age (Fisher's exact probability = 0.046, $p< 0.05$), of the staff nurses is significant at 0.05 level of significance. Hence the research hypothesis **H_2** is accepted. Other variables like the gender (χ^2= 2.387, $p > 0.05$), education (χ^2=0.691, $p > 0.05$) and previous exposure to the topic (χ^2= 2.627, $p> 0.05$) are not significant at 0.05 level of significance.

The present study also reveals that there is a significant association between the variable total years of experience with computed χ^2=5.824 at 1 df with post-test knowledge scores at $p<0.05$, and no significant association has been found between other demographic variables like age, gender, education, area of working and previous exposure to the topic in relation with post-test knowledge scores of staff nurses.

Hence, the second hypothesis, **H_2-**There will be a significant association between pre and post-test knowledge scores of staff nurses with selected demographic variables is accepted.

LIMITATIONS The study was confined to a small number of subjects and was conducted on a purposive sampling, working in a selected hospital, which limits the generalization of findings.

RECOMMENDATIONS

In the light of the above findings and personal experience of the investigator the following recommendations are offered:

The study can be replicated on a larger sample; thereby findings can be generalized for a larger population.

A similar study can be conducted using other strategies like SIM, booklets and pamphlets.

IMPLICATIONS OF THE STUDY

The findings of the study can be used in the areas of nursing practice, nursing education nursing administration, and nursing research.

Nursing practice

Constant updating and growth are essential to keep abreast of scientific and technological change within the nursing profession. In service education programs are designed to upgrade the knowledge of employees. The findings of the study could be utilized as basis for orientation programs and in-service education of the nurses so that constant awareness and clear understanding may be created regarding pacemaker therapy. This will increase the knowledge and improve the practices of RNs

regarding various aspects of pacemaker therapy.

Nursing education

In India, the existing curriculum for various nursing courses include contents regarding care of patients with pacemaker, but the updated guidelines can be incorporated in the curriculum. An effective education/guidance to nursing students will have better impact and positive attitude towards caring for patients with cardiac pacemaker. The nurse educators have the responsibility to update the knowledge of RNs and thereby improve their knowledge through various educational programs.

Nursing administration

Nurses are challenged to play the role of efficient administrators as well as practitioners. Administration in both private and government sectors should take initiative action to update the knowledge of health personnel regarding care of patients with cardiac pacemaker by in-service education. Administrators must provide adequate supply of audio-visual aids for conducting awareness programmes. After training, the nurses should be provided with adequate facilities and supervision to maintain the standards of knowledge regarding pacemaker therapy.

Nursing research

The importance of research in nursing is to build the body of knowledge. Today nurses are actively generating, publishing and applying research in practice to improve client care and enhance scientific knowledge base of nursing. The study throws light on the areas of nurse's knowledge regarding care of patients with cardiac pacemaker. The findings of the present study serve as the basis for the professionals and the students to conduct further studies.

CONCLUSION

The result shows that the staff nurse's knowledge level improved after implementation of the structured teaching programme on the care of patients with cardiac pacemaker. The study concludes that the structured teaching programme is an effective method in providing moderate to adequate level of knowledge regarding health topics to the staff nurses working in hospitals.

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