A Study to Assess the Effectiveness of Self-Instructional Module (SIM) on Pre and Post Procedural Care of Cardiac Catheterization among Staff Nurses at Selected Hospital, Udaipur

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ABSTRACT

Cardiac catheterization serves dual purposes, depending on the intended classification. The primary purpose involves diagnostic cardiac catheterization, encompassing coronary angiography, cardiac biopsy, right heart catheterization, ventriculography, and intracoronary ultrasound. The secondary purpose involves interventional cardiac catheterization, which includes procedures such as angioplasty, cardiac stenting, mitral valvuloplasty, as well as repairs for patent foramen ovale or atrial septal defects. Often, both objectives are addressed concurrently. As cardiologists worldwide continue to explore novel diagnostic and therapeutic approaches for cardiovascular diseases, cardiac catheterization remains a pivotal procedure, offering both diagnostic and therapeutic benefits. If a catheter is inserted through the femoral or groin artery, the process is termed left cardiac catheterization, whereas placing the catheter in the right femoral vein to gauge the pressure in the right side of the heart is referred to as right-sided catheterization. Title of the topic "A Study To Assess The Effectiveness Of Self Instructional Module (SIM) On Pre And Post Procedural Care Of Cardiac Catheterization Among Staff Nurses At A Selected Hospital, Udaipur." The objective of the study was to assess the pre-test knowledge of staff nurses regarding pre & post procedural care of undergoing cardiac catheterization. To assess the post-test knowledge of staff nurses regarding pre & post procedural care of undergoing cardiac catheterization. To compare the pre-test and post-knowledge score of staff nurses regarding pre & post procedural care of staff nurses undergoing cardiac catheterization. To assess the pre-test knowledge of staff nurses regarding pre & post procedural care of undergoing cardiac catheterization with selected demographic variables. The method adopted for the present study was quantitative experimental research approach, as the study aimed at nursing intervention (Self instructional modules) for assessing the level of knowledge among staff nurses admitted in Geetanjali hospital & Pacific hospital. This approach would help the investigator to evaluate the effect of specific intervention that is "Self instructional modules" on staff nurses in selected hospitals at Udaipur. In this study samples were drawn by using purposive sampling technique. Data was collected by using standardized structured knowledge questionnaire. Result revealed that In the pre-test or prior to the administration of Self instructional module, majority of the sample had average knowledge i.e. 39 (78%), whereas 11 (22%) had poor knowledge and none (0.00%) participants had good knowledge regarding pre & post procedural care of undergoing cardiac catheterization. In the post-test after to the administration of Self instructional module, majority of the sample had good knowledge i.e. 49 (74%), whereas 11 (26%) had average knowledge and none

(0.00%) participants had poor knowledge regarding pre & post procedural care of undergoing cardiac catheterization. The improvement in level of knowledge from pre-test to post-test the mean was 10.88 to 22.43, SD was 2.04 to 2.30.; mean percentage was 36.25% to 74.78%. The mean difference percentage was 38.01. The data further represent that the, "t" value of 29.972 was significantly higher than the table value 2.00 at 0.05 level. This indicates that there was difference in pre-test and post-test level of knowledge score of participants and the self-instruction module was effective to improve the level of knowledge score regarding pre & post procedural care of undergoing cardiac catheterization among staff nurses. Hence, the research hypothesis H_1 was proved and accepted. There was a significant association between pre-test level of knowledge score with selected demographic variables such as age in years ($\chi2$=17.148), religion ($\chi2$=32.873), educational qualification ($\chi2$=17.1), and attended any in-service educational programs on Cardiac catheterization procedure ($\chi2$=7.413) were significant at 0.05 level and there was no significant association between pre-test knowledge level or gender ($\chi2$=3.337), and years of experience ($\chi2$=1.497) at 0.05 level. Hence, research hypothesis H_2 is accepted.

KEYWORDS: Cardiac Catheterization, Coronary Angiography, Cardiac Biopsy

Need for the study

Cardiac catheterization has been and currently remains the gold standard for the diagnosis of coronary artery disease. It may also reveal the presence of other conditions, including enlargement of the left ventricle; ventricular aneurysms; 4 narrowing of the aortic valve; insufficiency of the aortic or mitral valve; and septal defects that allow an abnormal flow of blood from one side of the heart to the other. The procedure shows the overall shape of the heart, the four heart chambers, and accessory structures inside it which will help to plan for treatment.

According to a recent study conducted by **Interventional Cardiology: Principles and Practice, 2021** the prevalence of infection related to cardiac catheterization varies depending on the type of procedure and the patient's risk factors, but is overall 1-3%.[9] Risk factors for infection include diabetes, renal disease, peripheral vascular disease, obesity, chronic obstructive pulmonary disease (COPD), advanced age, emergent procedures, complex procedures, and multiple punctures (**Royal Marsden Manual of Clinical Nursing Procedures, 2020).**

PROBLEM STATEMENT

"A Study to Assess the Effectiveness of Self-Instructional Module (SIM) On Pre and Post Procedural Care of Cardiac Catheterization Among Staff Nurses at Selected Hospital, Udaipur"

OBJECTIVES OF THE STUDY

➢ To assess the pre-test knowledge of staff nurses regarding pre & post procedural care of undergoing cardiac catheterization.

➢ To assess the post-test knowledge of staff nurses regarding pre & post procedural care of undergoing cardiac catheterization.

➢ To compare the pre-test and post-knowledge score of staff nurses regarding pre & post procedural care of staff nurses undergoing cardiac catheterization.

➢ To assess the pre-test knowledge of staff nurses regarding pre & post procedural care of undergoing cardiac catheterization with selected demographic variables.

Methodology

Research approach: - quantitative evaluative research approach.

Research design: - In this present study, pre-experimental (one group pre-test post-test research design) research design was selected for the study.

Setting of the study:- Geetanjali hospital & Pacific hospital

Variables: -

Dependent Variable:

In this study, dependent variable is level of knowledge among staff nurses.

Independent Variable:

In this study, independent variable is self-instructional module among staff nurses.

Demographic Variable:

In this study the selected socio- demographic variables are age in years, gender, religion, educational qualification, years of experience, and attended any in-service educational programs on Cardiac catheterization procedure.

Population of the study

Staff nurses from working in hospitals of, Udaipur.

Accessible population

Staff nurses from selected hospital, Udaipur.

Sample size: -

Sample of the study includes 40 staff nurses from selected hospital, Udaipur.

Inclusion Criteria

➢ Staff nurses who are working in ICU, CCU able

to speak and understand English.
- ➢ Willing to participate in the study available at the time of data collection
- ➢ Staff nurses who can understand Hindi and English

Exclusion Criteria
- ➢ Staff nurses who are working in wards.
- ➢ Are not able tread and write English.

DATA COLLECTION TOOL
The tool used in this study consists of three sections.
Section A: Demographic Variables
This section deals with Demographic variables such as age in years, gender, religion, educational qualification, years of experience, and attended any in-service educational programs on Cardiac catheterization procedure. This section consists of 6 items.

Section B: Structured knowledge questionnaire
The maximum score was 30. The items were developed as to cover 4 different areas, namely

The assessment aspects placed on a rating scale. Total score is dived as:

Aspects	Score	Percentage
Poor Knowledge	0-10	0-33.33%
Average Knowledge	11-20	36.67-66.67%
Good Knowledge	21-30	70-100%

VALIDITY
Content validity of tool was established based on the opinion of six experts comprising of three nursing experts in the field of Medical Surgical Nursing department, two doctors from Neurological department and language expert for establishing the content validity. The tool was found adequate and suggestions given by the experts were incorporate.

ETHICAL CONSIDERATION
Ethical clearance was obtained from ethical committee from Venkteshwar College of Nursing Reference No. VCN/UDR/2023/…... Permission to conduct research study was obtained from the selected schools at Udaipur.

RELIABILITY
The researcher has used the standardizes Structured knowledge questionnaire who assess the level of knowledge in the present study. The reliability coefficient of knowledge was r=0.85. Hence the tool was considered for processing with the study.

PROCEDURE OF DATA COLLECTION
Phase-I (Pre-Test): Pre-test was conducted to assess the existing level of knowledge score of staff nurses.

Phase-II (Intervention): Self-instructional modules

were administered to staff nurses.

Phase-III (Post-Test): Post-test was conducted to assess the level of knowledge score of staff nurses.

Data collection is a systematic gathering of information (data) relevant to the research purpose. Formal permission was obtained from the nursing superintendent of Pacific Institute of Medical Science Hospital. The data was collected from 20/05/2023 to 27/06/2023. The patient who fulfills the inclusion criteria were selected from the hospital by non-probability sampling technique. Out of 60 staff nurses selected from Pacific institute of medical sciences, Umarda, Udaipur. Their demographic variables were collected by structured questionnaire. The pre-test was done by using structured knowledge questionnaire to assess the level of knowledge. After pre-test in investigator administer the self-instructional modules for 45 minutes. The post-test was done at 7th day after the administration of pre-test or self-instructional modules by using the same structured knowledge questionnaire. All the samples were cooperated during the data collection.

Analysis and interpretations
Section I: Description of demographic variables.
Age in years: According to age group the majority of participants were belong to 25 years i.e. 25 (41.67%), whereas 18 (30%) were belong to 31-40 years of age group and 17 (28.33%) were belong to 41 years and above of age group.

Gender: According to gender most participants were male i.e. 40 (66.67%), whereas 20 (33.32) were female.

Religion: Most of the participants 31(51.67) were Hindu, 21(35%) were Muslims, 8(13.33%) Christian and none of from other.[50]

Educational qualification: The majority of participants i.e. 21(35%) were belongs to GNM, 15 (25 %) were belongs to P.B.B.Sc. Nursing, 9 (15%) were belongs to specialization, 8 (13.33%) were belongs to masters and above and 7(11.67%) were from B.Sc. Nursing,

Year of experience: Many participants i.e. 30 (50 %) had ≤ 1 year, 21 (35%) had ≥ 4 years, and 9 (15%) had 2-3 years.

Attended any In service educational programs on Cardiac catheterization procedure: According to Attended any In service educational programs on Cardiac catheterization procedure the majority of participants have no attended any seminar or workshop i.e. 53 (88.33%), whereas 7 (11.67%) were have attended any in service educational programs on Cardiac catheterization procedure.

Section II: Distribution of samples based on their level of knowledge score regarding pre & post procedural care of undergoing cardiac catheterization

In the pre-test or prior to the administration of Self-instructional module, majority of the sample had average knowledge i.e. 39 (78%), whereas 11 (22%) had poor knowledge and none (0.00%) participants had good knowledge regarding pre & post procedural care of undergoing cardiac catheterization. In the post-test after to the administration of Self-instructional module, majority of the sample had good knowledge i.e. 49 (74%), whereas 11 (26%) had average knowledge and none (0.00%) participants had poor knowledge regarding pre & post procedural care of undergoing cardiac catheterization.

Section III: Evaluate the effectiveness of self-instructional module regarding pre & post procedural care of undergoing cardiac catheterization among staff nurses.

The improvement in level of knowledge from pre-test to post-test the mean was 10.88 to 22.43, SD was 2.04 to 2.30.; mean percentage was 36.25% to 74.78%. The mean difference percentage was 38.01. The data further represent that the, "t" value of 29.972 was significantly higher than the table value 2.00 at 0.05 level. This indicates that there was difference in pre-test and post-test level of knowledge score of participants and the self-instruction module was effective to improve the level of knowledge score regarding pre & post procedural care of undergoing cardiac catheterization among staff nurses. Hence, the research hypothesis H_1 was proved and accepted.

Section IV: Association between pre-test knowledge with demographic variables regarding pre & post procedural care of undergoing cardiac catheterization

There was a significant association between pre-test level of knowledge score with selected demographic variables such as age in years ($\chi2$=17.148), religion ($\chi2$=32.873), educational qualification ($\chi2$=17.1), and attended any in-service educational programs on Cardiac catheterization procedure ($\chi2$=7.413) were significant at 0.05 level and there was no significant association between pre-test knowledge level or gender ($\chi2$=3.337), and years of experience ($\chi2$=1.497) at 0.05 level. Hence, research hypothesis H_2 is accepted.

Conclusion

This study concluded that there was improvement in level of knowledge among staff nurses which indicates that the self-instructional modules were effective. The demographic variables of staff nurses were significantly associated with the pre- test level of knowledge score. The self-instructional modules will help the staff nurses to improve the level of knowledge.

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