



**EVALUATION OF NURSES KNOWLEDGE ABOUT PREPARATION OF PATIENT
UNDER- GOING CARDIAC CATHETERIZATION AT EL-MEK- NIMER UNIVERSITY
HOSPITAL SHENDI UNIVERSITY-2019**

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ABSTRACT

Background: Cardiac catheterization is widely used for diagnostic evaluation and therapeutic intervention in the management of patients with cardiac disease. The nurse's role in pre catheterization teaching and intra catheterization and post catheterization care is well recognized. **Objectives:** To evaluate knowledge of nurses about preparation of patients undergoing cardiac catheterization in the period extended from July to the October 2014. **Methods:** This descriptive cross sectional study was conducted in almek Nimer, 30 nurses were participated in this study, The data was collected by structured questionnaires which composed of 28 questions and, It analyzed by stastical program social science (SPSS). **Results and Conclusion:** It was concluded that the 20candidate (63.3%) of study group the qualification was bacaloia, 15candidate (50%) have poor knowledge about meaning of cardiac catheterization, and most of study group have good knowledge about complication and home self care. **Recommendation:** It was recommended that Nurses should train to deal with patient undergoing cardiac catheterization and Increase nurse awareness about preparation of patients undergoing cardiac catheterization to reduce risk of complication and improve quality of care through in-services educational programs, workshops, continuous training and conference committee in and outside of Sudan.

KEYWORD: Patient, Comparison, blood glucose, efficiency, Elmek Nimer.

INTRODUCTION

Cardiac catheterization is widely used for diagnostic evaluation and therapeutic intervention in the management of patients with cardiac disease. Cardiac catheterization is usually accomplished by percutaneous methods (the Seldinger technique). Direct exposure of the vein and artery (Sones technique) may also be used. The percutaneous method is used for the femoral artery and vein; direct exposure is used for the brachial artery and basilica vein. All chambers and vessels may be cannulated using either approach, and both approaches have high degrees of safety. Although physician preference often dictates which approach is used, specific factors may favor the use of one approach over the other. The percutaneous femoral approach is preferred because of its speed and repeatability and because arteriotomy and arterial repair are not required. Its use is indicated in cases of decreased or absent radial or brachial pulse. When tight aortic stenosis makes retrograde catheterization difficult or impossible, the percutaneous transseptal approach is used for left heart

catheterization. The direct brachial approach is indicated in cases of known vascular disease of the abdominal aorta or iliac or femoral arteries, or thrombotic disease of the femoral veins or inferior vena cava. Severe hypertension, a wide pulse pressure due to aortic regurgitation, and anticoagulant therapy are associated with an increased risk of bleeding when the percutaneous approach is used. In cases of severe obesity, the direct approach is used for better visualization and control of bleeding. A disadvantage of the direct approach is that it can be repeated only once or twice. Arterial thrombosis occurs more frequently with this approach, and the patient must return for removal of the sutures. The nurse's role in precatheterization teaching and intracatheterization and post catheterization care is well recognized.^[1]

Important advances related to cardiac catheterization included the development of quantitative angiography for determination of cardiac output (CO) and ejection fraction; therapeutic interventions, including

percutaneous transluminal coronary angioplasty (PTCA), laser therapy, atherectomy, stent placement, electrophysiologic mapping, and catheter ablation for the management of arrhythmias; and valvuloplasty. Although noninvasive diagnostic techniques have an important role, cardiac catheterization remains the most definitive procedure for the diagnosis and evaluation of coronary disease.^[1]

Cardiac catheterization, also called an angiogram, is a test that uses long, thin, hollow tubes called catheters to make x-ray pictures of your heart and its blood vessels. The test also determines how well your heart muscle and its valves are performing. Cardiac catheterization helps your physician to diagnose diseases of your heart—clogged arteries, heart valve defects, or heart muscle damage. Sometimes, a cardiac catheterization confirms that the heart is normal and provides reassurance that symptoms are not related to the heart. If problems are identified by the catheterization procedure, the test will help your physician develop a treatment plan. To better understand why the test is being performed, you need to know the basic workings of the heart and understand the diseases that can affect and threaten your heart.^[3]

Cardiac catheterization can also be useful in diagnosing congenital heart problems that are present at birth. For example Septal defects are “holes in the heart” that allow the blood to move abnormally from the left side of the heart to the right side (or vice versa). Congenital valvular lesion like Valve problems can also be congenital and other indication.^[3]

The incidence of coronary artery disease to grow as majority of death from the disease. Early detection of risk factor and disease reduce patient risk of complication. Tran catheter aortic valve replacement (TAVR) via the transfemoral (TF), transapical (TA), or even the transaortic (TAO) approach in high-risk or inoperable patients is quickly becoming a safe and effective modality for the treatment of symptomatic severe aortic stenosis (AS). However, in this selected group of patients, those with anatomical or physiologic constraints preventing TF, TA, and conventional TAO TAVR, alternative sites of access must be explored. Here, we report a successful TAVR in an inoperable patient with severe AS using a distal abdominal TAO approach via a synthetic graft-conduit. © 2013 Wiley Periodicals.^[2]

MATERIAL AND METHODS

Study design: This study Was Descriptive, cross-sectional hospital-based study, done from the period from April to November 2014.

Study area: This study was conducted in Elmek Nimer University Hospital which located at River Nile state in Shendi town.

Study population: Include all nurses' work in Elmek Nimer during the three shifts.

With the following are Inclusion criteria

- Work in the cardiac unit.
- Both sexes.
- Exclusion criteria:
- Any nurses not work in cardiac unit.

Sampling method and sample size: Total coverage sample, was used, 30 nurses work were participated during the study.

Data collection tool: Data was be collected by closed ended questionnaire to fulfill the purpose of the study. It compose from (28) question. It included the following parts:

Part 1 Concerned with Gathering Data in Relation to Characteristics: (Sociodemographic data)

Including (Age, sex, qualification, years of experience, course attendance, area of course attendance) The knowledge of nurses were assessed regarding meaning, purpose, indication, contraindication of cardiac catheterization, high risk group for catheter and accesses point of cardiac catheter.

Part two (pre cardiac catheter preparation

Including consent form, hours of patient fasting, physical preparation, nursing assessment, nursing teaching diagnostic study and pre medication.

Part three (complication)

The knowledge of nurses was assessed regarding complication which may occur.

Part four:-(home-self care)

Including activity, hygiene, follow up and monitor catheter site for (Painful, swelling, Bleeding, swelling in the calf or thigh and Drainage of pus.)

Data collection technique: The data was collected during interview between researcher and participator.

Data management and analysis: Data were coded and transferred into special designed formats for data entry then data were analyzed and computed using the statistical package for social sciences (SPSS version 16.0). And presented in forms of table and figure.

Ethical consideration: The study was approved by the research committee of faculty of nursing then permission was taken from the hospital manger, An explanation of the aim of the study was given to every nurse before their enrolment in the study. An oral consent was obtained; each study subject was individually interviewed using the previously mentioned study tools. They were assured that all the gathered data will be used for research purpose only. Participants', confidentiality, privacy, safety and protection were secured.

RESULT**Table (1): The distribution of the study group according to course attendance N=30.**

Items	Frequency	Percentage
Course attendance		
Yes	12	40.0%
No	18	60.0%
Total	30	100.0%
Area of course attendance		
Local	4	13.3%
National	8	26.7%
Total	12	40.0%

Table (2): The distribution of Study Population According To Knowledge About Cardiac Catheterization Meaning, Indication, Contraindication, Purpose, High Risk Group of Catheter, Access Point).

Items	Frequency	Percentage
Meaning of cardiac catheterization		
Good knowledge	10	33.3%
Fair knowledge	5	16.7%
Poor knowledge	15	50.0%
Total	30	100.0%
Indication of cardiac catheterization		
Good knowledge	10	33.3%
Fair knowledge	13	43.3%
Poor knowledge	7	23.3%
Total	30	100.0%
Contraindication of catheter		
Good knowledge	11	36.7%
Fair knowledge	12	40.0%
Poor knowledge	7	23.3%
Total	30	100.0%
Purpose of cardiac catheterization		
Diagnostic	1	3.3%
Therapeutic	2	6.7%
Diagnostic\therapeutic	26	86.7%
I don't know	1	3.3%
Total	30	100.0%
Higher-risk patients for catheter		
Good knowledge	9	30.0%
Fair knowledge	8	26.7%
Poor knowledge	13	43.3%
Total	30	100.0%
Accesses point		
Femoral artery	4	13.3%
Brachial artery	5	16.7%
Femoral-brachial	7	23.3%
Femoral-radial	30	100.0%
Total		

Table (3): The distribution of study group according to knowledge about preparation of patient before procedure (consent form, fasting, and physical preparation).

Items	Frequency	Percentage
Consent form		
Written consent	29	96.7%
Verbally	-	00.0%
Without consent	1	3.3%
Total	30	100.0%
Fasting		
4 hours	5	16.7%
6-8 hours	18	60.0%
12hours	2	6.7%
Without fasting	5	16.7%
Total	30	100.0%
Physical preparation		
Good knowledge	10	33.3%
Fair knowledge	14	46.7%
Poor knowledge	6	20.0%
Total	30	100.0%

Table (4): The Distribution of Study Group According To Knowledge About, Nursing Assessment.

Items	Always	Usually	Sometime	Never	Total
heart rate and rhythm, blood pressure	28 (93.3%)	2 (6.7%)	-	-	30 100%
evaluation of the peripheral pulses of the arms and legs	27 (90%)	3 (10%)	-	-	
Assessment of the heart and lung sound	18 (60%)	5 (16.7%)	6 (20%)	1 (3.3%)	
Evaluation of the patient's emotional status and attitude toward catheterization	21 (70%)	6 (20%)	2 (6.7%)	1 (3.3%)	

Table (5): The distribution of study group according to knowledge about, nursing teaching, diagnostic study and premedication.

Items	Knowledge			Total
	Good	Fair	Poor	
Nursing teaching	17 (56.7%)	7 (23.3%)	6 (20%)	30
Diagnostic study	11 (36.7%)	7 (23.3%)	12 (40%)	(100%)
Pre medication	15 (50%)	8 (26.7%)	7 (23.3%)	

Table (6): The distribution of study group according to knowledge about complication and home self care (activity, hygiene follow up, monitor site of catheter, other complication.

Percentage	Frequency	Items
Common complication occurs		
Good knowledge	16	53.3%
Fair knowledge	6	20.0%
Poor knowledge	8	26.7%
Total	30	100.0%
Activity		
Good knowledge	16	53.3%
Fair knowledge	6	20.0%
Poor knowledge	8	26.7%
Total	30	100.0%
Hygiene		
Catheter site care	25	83.3%
Partial bath	2	6.7%
Complete bath	3	10.0%
Tub bath	-	00.0%
Total	30	100.0%
Follow up		
Good knowledge	13	43.3%
Fair knowledge	8	26.7%
Poor knowledge	9	30.0%
Total	30	100.0%
Monitor catheter site for		
Good knowledge	16	53.3%
Fair knowledge	6	20.0%
Poor knowledge	8	26.7%
Total	30	100.0%
Other complication		
Good knowledge	14	46.7%
Fair knowledge	11	36.7%
Poor knowledge	5	16.7%
Total	30	100.0%

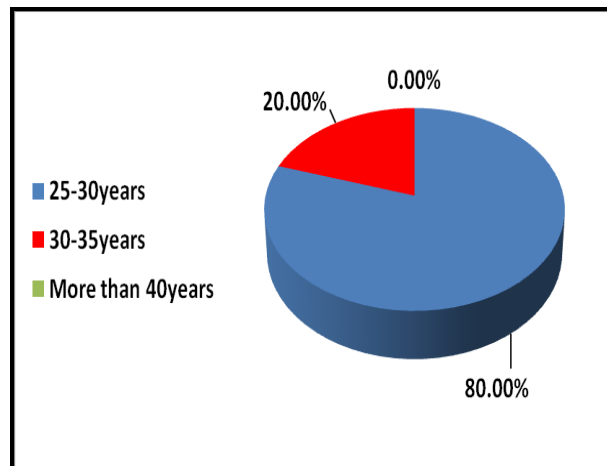


Figure (1): Distribution of study group according to their age (n=30).

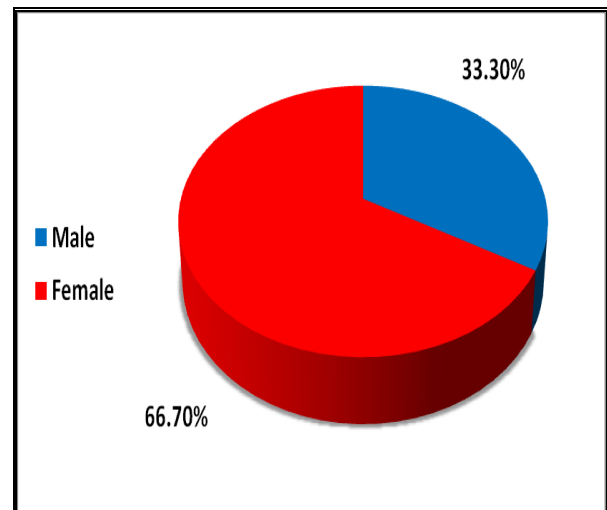


Figure (2): Distribution of study group according to their sex (n=30).

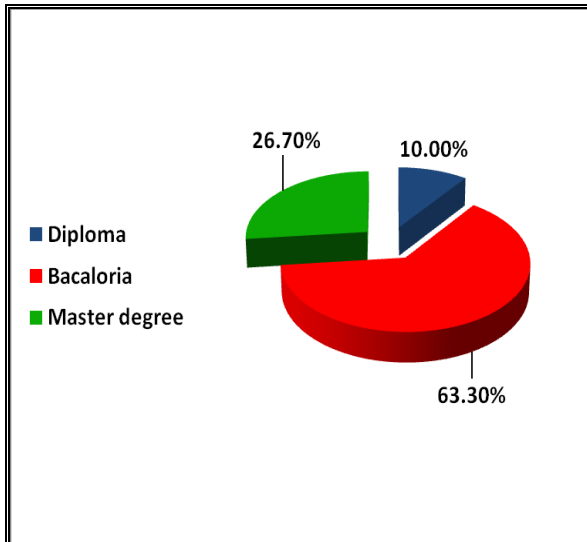


Figure (3): Distribution of study group according to their qualification (n=30).

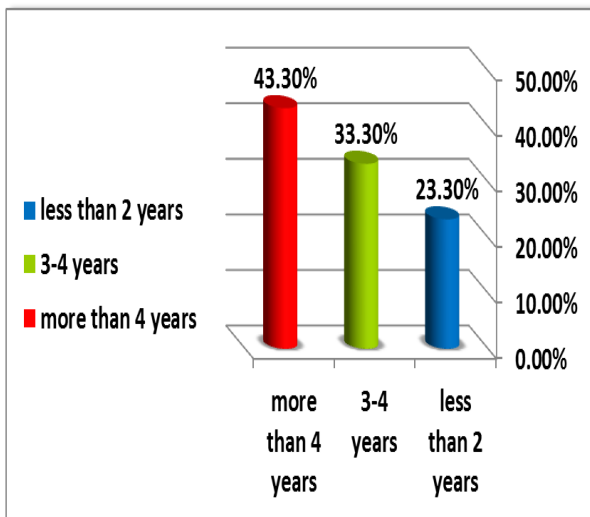


Figure (4): Distribution of study group according to their years of experience (n=30).

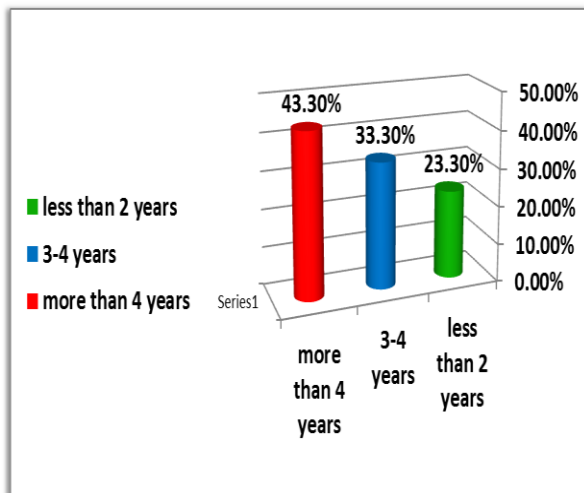


Figure (5): Distribution of study population according to their years of experience (n=30).

DISCUSSION

Nurses Knowledge about cardiac catheterization is the major role that aiding in preparation of patients before catheterization and complication occurrence.

The present study showed that the (80.0%) of study group age between (25-30) years this indicate that most of them are young, and (66.7%) of them are female.

The study revealed that the (63.3%) of the study group had bacaloria certificate and (43.3%) of them their experience more than 4years, this will enable them to improve their care about cardiac catheterization and preparation of patients undergoing catch lab.

This study revealed that the (60.0%) of study group have not attend any course during years of experience but only (40.0%) had attended course this result is may be related to low hospital apportuinity for course attend, work shop and conferences committee and absence of nursing round. (26.7%) of them had attended national course. This result also shows that low percentage of courses and training for nurses. Regarding knowledge the present study finding showed that the (50.0%) of study group had poor knowledge about meaning of cardiac catheterization, and the (86.7%) of study group know the purpose of catheterization. (43.3%) of them have fair knowledge about indication of catheterization, (40%) of them have fair knowledge about contraindication, and the (40.3%) of them have poor knowledge about high risk group. This result show that low percentage of knowledge in spite of the (43.3%) years of experience more than 4years this indicate that the study group highly skill without knowledge and may be related to no resident cardiologist available and catheter can be done 2-3 time per month and needed more training and courses about cardiac catheterization and present of resident cardiologist play important role in teaching and learning.

Furthermore The present study results showed that the (46.7%) of study group knew the femoral artery as the most access point. This result is inconsistent with Thorsten M, Matthew L, Michael P.^[2] As regard to preparation of patients The present study showed that the (96.7%) of patients have assent consent form and (60.0%) knew fasting about (6-8 hours) before procedure. (46.7%) of study group have fair knowledge about physical preparation of patients, and (93.3%) of them always assess the heart rate, rhythm, and blood pressure, (90%) evaluated the peripheral pulses of the arms and leg, (60%) of them assess of the heart and lung always done, (70%) of them always evaluation of the patient's emotional status and attitude toward catheterization. corresponding to (56.7%) of them had good knowledge about nursing patient teaching. (40.0%) of them had poor knowledge about diagnostic study and (50.0%) of them had good knowledge about pre procedure medication, results indicate that the study group had good knowledge about consent form,

diagnostic study, pre medication and nursing teaching and assessment and This information will be used for comparison in evaluating peripheral pulses after the catheterization procedure. but needed more education and rehabilitation about physical preparation. The study revealed that the (53.3%) of study group had good knowledge about complication, (40.0%) of them had good knowledge about activity. (83.3%) of them did hygienic care to catheter site, (43.3%) of them had good knowledge about follow up. (53.3%) of them had good knowledge about monitoring catheter site. (46.7%) of them had good knowledge about other complication. This results indicate that study group had good knowledge.

Conclusion and recommendation

Half of study group had poor knowledge about meaning of cardiac catheterization, and needed more training and courses about cardiac catheterization. And most of them had good knowledge about complication and home self care. and the study recommended to Further study should be done about preparation of patient under going cardiac catheterization. Nurses should train to deal with patient undergoing cardiac catheterization, Increase nurse awareness about preparation of patients undergoing cardiac catheterization to reduce risk of complication and improve quality of care through in-services educational programs, workshops, and continuous training.

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