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Assessment of Nurses Knowledge about Patient Safety after Cardiac Catheterization for Adult Patients in Ibn Al - Biter Specialist Center Cardiac Surgery

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Abstract: ***The cardiac catheterization is a procedure that allows a cardiologist to get firsthand information about the patterns of blood pressure and blood flow inside the heart. It may lead to several major and minor complications which may contribute to morbidity and mortality. Objectives: To assess nurses knowledge about patient safety after cardiac catheterizationfor adult patientsand to selection the correlation between demographic data with distinctive knowledge of the nurse. Methodology: A descriptive study was conducted in the period of 1st June2017 to 15thNovember 2017. The intent of (50) nurses who were factor at Ibn Al - Biter Specialist Center Cardiac Surgery, Results: The most of them nurses' ages were (20-25) years old that were accounted for (36%), Most of them are fromfemale were (52%), The level of teaching represented that most of their (40%) were from nursing college ,(96%) of them were married,(58%) were (1-5) yearsfactor in the cardiac catheterization, Majority of them (46) were factor (1-5) years were factor in nursing,(90%) of them have practice session in the cardiac catheterization. Conclusions: Nurses have better information level and their no significant relevance nurses demographic characteristics& levels of knowledge.***

Keywords: Cardiac Catheterization, Nurses, Knowledge.

1. Introduction

Cardiovascular diseases have had the highest morbidity and death-ratein the world since the 1960s, which is one of the main reasons for the hospital stay for long periods and public spending with hospitalization, an economic burden that has seen tremendous growth in recent decades [1].Cardiovascular diseases adversely affect the functions of the circulatory system and the heart, what is the case of coronary artery disease, cerebrovascular disease and peripheral vascular disease. Coronary artery disease is a multifactorial disease. Its occurrence depends generally on the spread of risk factors, therefore, the more frequent risk factors for atherosclerosis,The largest is morbidity and mortality due to this disease [2]. The catheterization is considered of choiceselection method for examine coronary anatomy and to investigate heart disease,which can provide additional information for make resolution. From this perspective, the importance of diagnosis assertive benefits stand out, for perform appropriate treatment and improve the quality of life for the heart patient [3]. Tests and invasive diagnostic interference including right and left cardiac catheterization have become routine diagnostic material in cardiac departments around worldwide. The method includesadmission of sheaths where femoral and radial arteries are the location for admission insertion. However, femoral sheath is the most common location of admission for the sheath. The processmay do own some negative effects and potential complications, which are bloody femoral post-angioplasty or interference considering one common[4].The knowledge of heart pathogens and adequacy related to effective measurement used to prevent pot Percutaneous Coronary Intervention complication believe a value indicator issues. To obtainbalance after sheath withdrawal, cardiac nurses are required to distinguish that difference mechanism can be applied to manage post Percutaneous Coronary Intervention complications.This will enable them to preferable determine the best method and supply a quality nursing care for their patients. However, the literature has no agreement on the best ways that can be used to prevent post sheath withdrawal complications [5].

2. Materials and Methods

Research design: A descriptive study. Sample of the study:The sample was selected purposive (non-probability) of 50 nurses. Location of the study: Ibn Al - Biter Specialist Center Cardiac Surgery were included and collected data from1stNovember2016 to 15thApril 2017. A tools of study: The questionnaire was constructed for the purpose of the study. The tools consisted two parts: Part I:socio demographic characteristic, which includes (7) variables (age, gender, level of education, Material statues ,years of the service in the field of the nursing profession, years of experience in Cardiac Catheterization, training session)**.**Part II: Consists of firs tools: The first tool was a questionnaire for assessing knowledge regarding Cardiac Catheterization which refers to the level knowledge of nurses about patent safety as measured by the correct response to the items through using of two options for answering(where0= Incorrect answer,1=Correct answer). The data is analyzed by using SPSS package which include descriptive statistical approach (frequency, percentage and mean of score) and inferential statistical approach (standard deviation and One way Anova).The level of knowledge was ranked into two levels; (0-0.49) are poor score knowledge, (0.5-1) are good score knowledge.Validity and Reliability of the instrument: Content validity of the questionnaire was determine through a panel of (14) experts. Reliability of questionnaire was determined through test re-test (r=0.82) of pilot study.

3. Results

The most of them nurses' ages were (20-25) years old that were consider for (36%), Most of them (52%) were women, The level of teaching appear that most of them (40%) were from nursing college ,(96%) of them were married,(58%) were (1-5) years factor in the cardiac catheterization, Majority of them (46) were factor (1-5) years were factor in nursing,(90%) of them have training course in the cardiac catheterization [Table 1].

Table 1: Ratio of Intensive Care nurses (n=50 nurses) depending on whether demographic characteristics

No	Variable	F.	P.	C.P
1	Age (Years)			
1.1	20-25Years	18	36.0	36.0
1.2	26-30Years	6	12.0	48.0
1.3	31-35Years	8	16.0	64.0
1.4	36-40Years	12	24.0	88.0
1.5	>41Years	6	12.0	100.0
2	Gender			
2.1	Main	24	48.0	48.0
2.2	Women	26	52.0	100.0
3	Level of teaching			
3.1	Minor Nursing School	**14**	**28.0**	**28.0**
3.2	Medical Institute	**15**	**30.0**	**58.0**
3.3	Nursing College	**20**	**40.0**	98.0
3.4	Post gradated	1	2.0	100.0
4	Years of factor incardiaccatheterization			
4.1	1-5 Years	29	58.0	58.0
4.2	6-10 Years	16	32.0	**90.0**
4.3	11-15 Years	3	6.0	**96.0**
4.4	>16Years	2	**4.0**	**100.0**
5	Years of factor in Nursing			
5.1	1-5 Years	23	46.0	46.0
5.2	6-10 Years	14	28.0	74.0
5.3	11-15 Years	**11**	**22.0**	96.0
5.4	16-20 Years	2	**4.0**	**100.0**
6	Training course cardiac catheterization			
6.1	Yes	45	**90.0**	**90.0**
6.2	No	5	10.0	**100.0**
7	No. of training in cardiac catheterization			**100.0**
7.1	No courses	5	10.0	10.0
7.2	1-5 courses	38	76.0	86.0
7.3	6-10 courses	**7**	**14.0**	100.0
8	Marital status			
8.1	single	20	40.0	40.0
8.2	Married	28	56.0	96.0
8.3	Absolute	2	4.0	100.0

Frequency, Percent, Cumulative percent

This table shows The majority of nurses' ages were (20-25) years old that were accounted for (36%), Most of them (52%) were female, The level of education represented that most of them (40%) were from nursing college ,(96%) of them were married,(58%) were (1-5) years employee in the cardiac catheterization, Majority of them (46) were employee (1-5) years were employment in nursing,(90%) of them have training session in the cardiac catheterization.

Table 2: The Knowledge Scores of cardiac catheterization Unit Nurses (n=50)aboutpatient safety for Adult Patients in Ibn Al - Biter Specialist Center Cardiac Surgery.

No	Knowledge questions	True		False		M.S	Ass.
		F.	%	F.	%		
1	What are the local complications occurring in patients after cardiac catheterization?	49	98.0	1	2.0	.98	Good
2	How will you detect pseudoaneurysm after cardiac catheterization?	7	14.0	43	86.0	.14	Poor
3	When should you check the serum creatine level of patients after cardiac catheterization?	10	20.0	40	80.0	.20	Poor
4	What is the complication of delayed sheath removal?	37	74.0	13	26.0	.74	Good
5	Development of contrast-induced nephropathy occurs	8	16.0	42	84.0	.16	Poor
6	Who is at risk for developing renal failure after cardiac catheterization?	14	28.0	36	72.0	.28	Poor
7	What is the sign of thrombus formation after cardiac catheterization?	37	74.0	13	26.0	.74	Good
8	How should the patient's affected extremity to be kept immobilized after cardiac catheterization?	22	44.0	28	56.0	.44	Poor
9	Who is at risk for developing pulmonary edema after cardiac catheterization?	45	90.0	5	10.0	.90	Good
10	When you detect a hematoma at the puncture site after cardiac catheterization.	44	88.0	6	12.0	.88	Good
	Total	273		227		.54	Good

F= Frequency, %= Percent, **MS= mean of score,Ass=**(0-0.49) are poor knowledge, and (0.5-1) are good

Table revealed that99%of nurses tells that it's local complication occurring in patient after cardiac catheterization , 14% of them said that detect pseudoaneurysm after cardiac catheterization, 20% of nurses answering that check the serum certain level of patients after cardiac catheterization, 74% of nurse's said complication of delayed sheath removal,16% only of them answer development of contrast-induced nephropathy occurs,28% of them at risk for developing renal failure after cardiac catheterization,74% of nurses said the sign of thrombus formation after cardiac catheterization,44 % only of nurses said that the patient's affected extremity to be kept immobilized after cardiac catheterization,90%,of them saidat risk for developing pulmonary edema after cardiac catheterization, 88%most of them detect a hematoma at the puncture site after cardiac catheterization.

Table 4: The correlation between nurses' knowledge and some socio demographic variables

Variable Nurses information	Sum of squares	Df	Mean Square	F	Sig.
Age	.001	1	.001	.001	.981
Between Groups	107.519	48	2.240		
Within Groups	107.520	49			
Total					
Gender	.302	1	.302	1.189	.281
Between Groups	12.178	48	.254		
Within Groups	12.480	49			
Total					
Level of Education	.007	1	.007	.009	.924
Between Groups	36.713	48	.765		
Within Groups	36.720	49			
Total					
Years of employment in catheterization.	.195	1	.195	.311	.580
Between Groups	30.125	48	.628		
Within Groups	30.320	49			
Total					
Years of Employment In Nursing	.659	1	.659	.790	.379
Between Groups	40.061	48	.835		
Within Groups	40.720	49			
Total					
Training Course	.008	1	.008	.086	.771
Between Groups	4.492	48	.094		
Within Groups	4.500	49			
Total					

Sum of squares, Degree of freedom, Mean squares, Significant

This table shows there is no correlation association between nurses knowledge and age, sex ,level of teaching , years of work in cardiac catheterization, training course.

4. Discussion

Throughout the course of the data analysis of the present study, the findings shows The majority of nurses' ages were (20-25) years old that were accounted for (36%), Most of them (52%) were female, The level of education represented that most of them (40%) were from nursing college ,(96%) of them were married, Fifty eight percent of the study samples are (1-5) years were employee in cardiac catheterization unit, Majority of them (46) were employee (1-5) years were employment in nursing,(90%) of them have training session in cardiac catheterization unit.

This finding can be supported by another study the findings who reported that study the findings of the mean age of female is 7.8 and the standard deviation is 1.47 whereas mean age of males is 7 and the standard deviation is 1.2. The found out that samples with less than 5 years of experience have got a mean of 6.8 and a standard deviation of 1.22.The samples with age more than 5 years has got a mean of 8.8 and a standard deviation of 1.32.The p value attained on analysing these two is 0.015,which is significant. From this we can infer that knowledge level is more in those whose experience is more than 5 years.[(6)].

These findings disagreement with that obtain by other researcher who stated nurses with low 1 year of practice had the lowest average scores of 46.6% and the nurses with one to three years of practice had the second lowest average scores of 53.3%. The nurses who had four to seven years of practice scored higher overall (71.3%) than those nurses who had seven to ten years of practice (64%). Finally, the nurses who had eleven to fifteen years of practice scored slightly higher (80%) than the nurses who had major than fifteen years of practice (78.5%)[7].

Single of the study objectives, in order to assess cardiac catheterization unit nurse's knowledge, about patient safety for adult patients .This study show that 99% of nurses speak that it's local complication occurring in patient after cardiac catheterization, 14% of them said that detect pseudo aneurysm after cardiac catheterization, 20% of nurses answering that check the serum certain level of patients after cardiac catheterization, 74% of nurse's said complication of delayed sheath removal,16% only of them answer development of contrast-induced nephropathy occurs,28% of them at risk for developing renal failure after cardiac catheterization,74% of nurses said the sign of thrombus formation after cardiac catheterization, 44 % only of nurses said that the patient's affected extremity to be kept immobilized after cardiac catheterization,90%,of them said at risk for developing pulmonary edema after cardiac catheterization, 88% most of them detect a hematoma at the puncture site after cardiac catheterization.

This outcome correspond with the another investigator who reported only about 6% of the sick person had hematoma. This reference that the successfulness of sheath withdrawal measured by complications such as hematoma and early discharge or motivation has to be believed carefully. For example, manual sheath removal need bed comfort for prolonged that mechanical and invasive ones. In this study 95% of the patient had to comfort for at 6 hrs post sheath withdrawal. This would indicate that the post sheath complication such hematoma has been effect by the prolonged of bed comfort therefore; only 5% of the patients had hematoma [8].

This result agrees with that of the other researcher who reported cardiac catheterization staff and nurses caring for these patients must work together to prevent complications, when possible, and treat complications when they occur. Nurses with specialized training are needed to assess, identify and manage vascular[9].

According to the findings of the study that display in table (4,5) there are no significant relationship between nurses knowledge and sociodemographic variables such as (age, sex ,level of teaching , years of factor in cardiac catheterization, training Course .

This study correspond with past studies, here is who had average scores of 61.3%. Pearson coefficient was -0.035 (p=.853, 2 tailed) which display there were no statistically significant findings between educational planning and knowledge of heart failure guidelines [8].

5. Conclusions

This particular study shows similar results to the two studies previously done thatexamined nurses' knowledge about patient safety after cardiac catheterization , which demonstrate that nurses may t be sufficiently knowledgeable regarding patient safety after cardiac catheterization . The results of this study show statistically no significant findings regarding gender ,age , level of education ,years of experience in hospital ,training and nurses' knowledge domains .

6. Recommendations

1) Educational program for cardiac catheterization unit nurses to improve knowledge about patient safety and avoid complication aftercardiac catheterization.
2) The selfsame study would be frequent in other cardiac catheterization units and increasing the size of the sample at other teaching hospitals in the Iraq.
3) Nurses have to use a particular protocol in next to catheterization unit.

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