

# Cardiac Nurses' Knowledge towards Patient Safety after Cardiac Catheterization; A Cross Sectional Study

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## ABSTRACT

**Background:** Cardiovascular disease is the leading cause of death in UAE. Coronary heart disease is a common term for the buildup of plaque in the heart's arteries that could lead to heart attack. Cardiac catheterization is a procedure to examine how well the heart is working. Patient safety is defined as being free from accidental harm as a result of a health care encounter. Cardiac nurses are responsible for providing patient's safety and minimizing vascular complications after cardiac catheterization procedures. This study explored the knowledge of cardiac nurses working in DHA Hospitals, with regard to patient safety after cardiac catheterization.

**Methods:** This is a descriptive quantitative study which was conducted in DHA Hospitals, UAE between the periods October 2020 till December 2020. A convenience sampling technique was used for this study with 108 cardiac nurses working in DHA.

**Results:** The knowledge percentage of cardiac nurses on patient safety revealed that 64.81% were had moderate knowledge, 15.74% had adequate knowledge level whereas 19.44% were had poor level of knowledge regarding patient safety after cardiac catheterization.

**Conclusion and Recommendation:** The study concluded that cardiac nurses reflected moderate level of knowledge. It was statistically proven that there was a significant association of knowledge regarding patient safety after cardiac catheterization among cardiac nurses with their age, job experience and years of experience in cardiac unit. There is a need to follow innovative approaches in training and consider

to include post cardiac catheterization care in education session.

**Keywords:** [Nurses, Knowledge, cardiac catheterization, Cardiovascular, Patient.]

## INTRODUCTION

Cardiovascular disease is the leading cause of death in United Arab Emirates (UAE) (World Health Organization [WHO], 2018). Coronary heart disease is a common term for the buildup of plaque in the heart's arteries that could lead to heart attack (American Heart Association [AHA], 2015). The Centre for Disease Control and prevention's (CDC's), 2013) report found that about 80 percent of deaths from coronary artery disease were caused by narrowing of the arteries which leads to reduced blood flow to the heart. Preventable factors like obesity, poor physical activity, heavy drinking, eating unhealthy foods and uncontrolled blood pressure and cholesterol are the main risk factors leading to heart disease (CDC, 2013).

Cardiac catheterization is a procedure to examine how well the heart is working (AHA, 2015). A thin, hollow tube called a catheter is inserted into a large blood vessel that leads to the heart. A Coronary Angiography is done during cardiac catheterization. A contrast dye visible in X-rays is injected through the catheter. X-ray image shows the dye as it

flows through the heart arteries (AHA, 2015).

Patient safety is defined as being free from accidental harm as a result of a health care encounter (Babb Joseph,D., & Cook Jody,C., 2016). A well-functioning unit with a culture of safety, demonstrated clinical quality outcomes, and high internal/external customer satisfaction scores can avoid the risks associated with a less reliable unit (Babb Joseph,D., & Cook Jody,C., 2016 ). Cardiac nurses must assess and care for patients with cardiac problems as well as patients undergoing cardiac catheterizations procedures, patient for any deteriorating signs, those during safe transport, administering medication, and help with basic personal care needs, control of bleeding, maintenance of haemostasis. This will help in minimizing the vascular complications in patient (Ismail Keshk, L., & Eaid Elgazzar,S., 2018).

Increased risk for vascular complications was found in patients who were older than 70 years, were female, had renal failure, and underwent percutaneous intervention (Dumont et al., 2006). Cardiac nurses are responsible for providing patient's safety and minimizing vascular complications after cardiac catheterization procedures (S.R., Arathy, 2011).

A health survey study was conducted to assess the knowledge and practices of cardiac nurses about patient safety after cardiac catheterization at SCTIMST, Trivandrum, India. The result of the study was knowledge level is higher in staff nurses who has experience more than 5 years compared to those whose years of experience is less than 5 years. The study concluded that the knowledge level increases with years of experience (S.R., Arathy, 2011).

A descriptive analytical study was conducted to assess the knowledge and practices among nurses regarding patients' care following cardiac catheterization at a tertiary care hospital in Karachi, Pakistan. The study found that majority (54.3%) showed adequate knowledge scores, 28

nurses (40%) had inadequate knowledge scores, while only four nurses (5.7%) reached up to the excellent knowledge level (Yaqoob Adnan et al., 2019).

Descriptive research study on assessment of nurse's knowledge and practice for patients undergoing cardiac catheterization conducted in Assiut University, Egypt. The result concluded that nurses 87.5% had unsatisfactory level of knowledge whereas only 12.5 % had satisfactory level of knowledge (Thabet O. F.et al., 2019).

### **SIGNIFICANCE OF THE STUDY**

This is the first kind of study was conducted across DHA, in United Arab Emirates. This differs from other studies in the field, that UAE is a heterogeneous culture. Moreover, it can set a baseline for further comparison with studies worldwide.

### **PURPOSE OF THE STUDY**

1. To assess the knowledge of cardiac nurses towards patient safety after cardiac catheterization.
2. To associate the level of knowledge regarding patient safety after cardiac catheterization among cardiac nurses with their selected demographic variables.

Write Introduction section of your research paper here. Modify this section as applicable according to your research work. Aims/objectives of research article should be included in this section.

Add appropriate original references to the sentences/paragraphs taken from other media/sources.

### **LITERATURE REVIEW**

To assess the Knowledge and Practices among Nurses Regarding Patients' Care Following Cardiac Catheterization at a Tertiary Care Hospital in Karachi, Pakistan. (Yaqoob.A., Barolia.R., Nazar.A(2019). Finding-majority of the nurses, 54.3% showed adequate knowledge scores and

variation in the practices was observed in each of the department.

Cardiovascular disease is the leading cause of death in UAE (WHO, 2018).

Assessment of nurse's knowledge and practice for patients undergoing cardiac catheterization conducted in Assiut University, Egypt. (Thabet.O.F., Ghanem. H.M., Ahmed.A.A., Abd-Elmouhsen.S.A., (2019). Finding-87.5% had unsatisfactory level of knowledge whereas only 12.5 % had satisfactory level of knowledge about nursing care for patients undergoing cardiac catheterization

Creating Learning Guideline for Nurses Caring for Patients Safety Undergoing Cardiac Catheterization. (Lamiaa Ismail Keshk, Samia Eaid Elgazzar., (2018). Finding -Cardiac nurses must assess and care for patients with cardiac catheterizations procedures, and for any negative signs of a change in condition. This will help in minimizing the vascular complications in patients.

Assess Knowledge and Practice of Registered Nurses about Patient Safety after Cardiac Catheterization in Punjab Institute of Cardiology Hospital, Lahore. (Feroze.M., M. Afzal., Sarwar.H., Amir.G., (2017). Finding-there was positive association between the knowledge and practice about patient's safety after Cardiac Catheterization. Nurses those have proper knowledge and practice can help in rehabilitation of patients.

## **MATERIALS & METHODS**

This is a descriptive-quantitative study was conducted in DHA hospitals, UAE between the periods October 2020 till December 2020. Convenience sampling technique was used with a sample size of 108 respondents. The participants were included are Registered Nurses who had an experience in dealing with patients after cardiac catheterization. The instrument of

the study is an adopted questionnaire developed by Ms.Arathy SCTIMST Trivandrum to assess the knowledge of nurses, about post cardiac catheterization care; Permission was obtained from the above institution head through e-mail. Tool consisted two parts with Socio-demographic data, which includes Age, Gender, level of Education, Years of experience and Adopted questionnaire was used to assess the knowledge of nurses who are working in cardiology units. This questionnaire is consisted of 10 multiple choice questions, regarding several aspects of preventing complications after cardiac catheterization. The questionnaire and consent form were sent to the participants by mail who meets the criteria. To score the results of questionnaire, each correctly answered item has assigned with score of (1). Incorrectly answered items have assigned with score of (0); total scores are summed and ranged from (0 to 10). The scores less than 5(<50%) was considered a poor level of knowledge and the scores equal 5 or less than 8 (50- < 80 %) considered moderate level of knowledge and the scores equal or more than 8 ( $\geq 80$  %) considered as adequate level of knowledge.

### **Statistical Analysis**

**The analysis of the study was presented under the following sections.**

**Section A:** Description of socio demographic variables of cardiac nurses

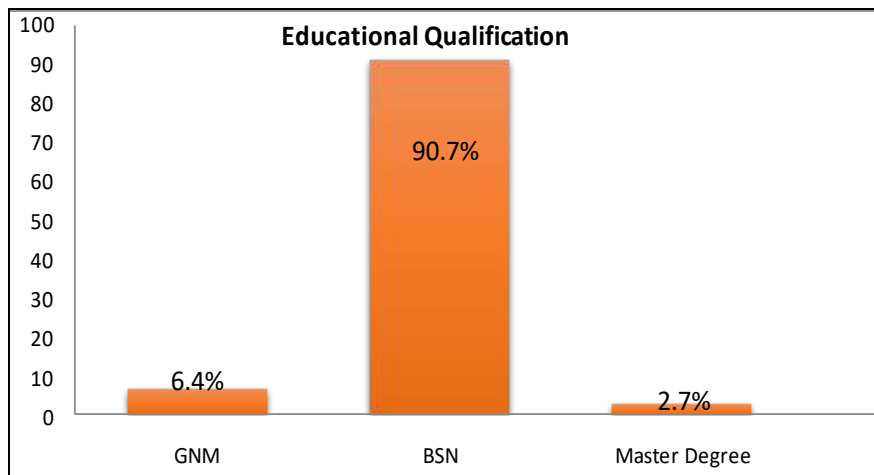
**Section B:** Data on the level of knowledge regarding patient safety after cardiac catheterization among cardiac nurses

**Section C:** Description of the association between levels of knowledge regarding patient safety after cardiac catheterization among cardiac nurses with their selected demographic variables.

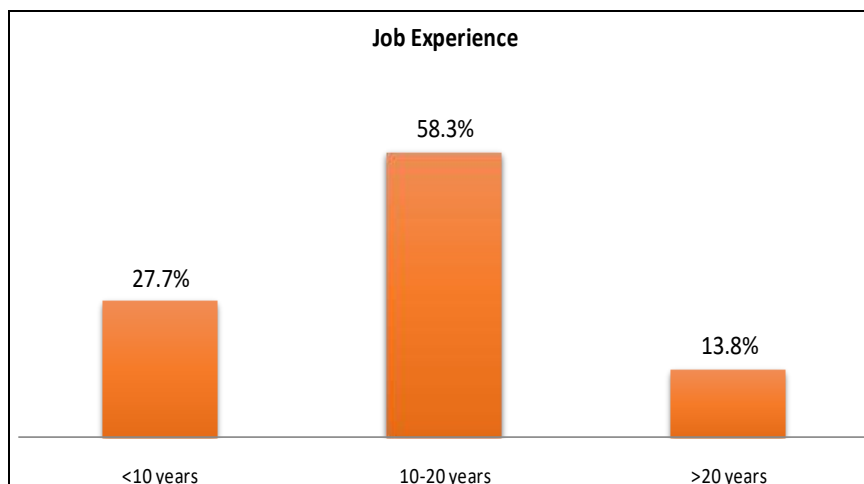
**Section A: Description of socio demographic variables of cardiac nurses.**

**Table: 1. Frequency and percentage distribution with selected socio demographic variables (N=108)**

Sl. No	Socio demographic variables	Frequency (N)	Percentage (%)
<b>1</b>	<b>Age in years</b>		
	a. 20-30years	25	23.14
	b. 31-40years	61	56.48
	c. 41-50years	19	17.59
	d. 51-60years	3	2.77
<b>2</b>	<b>Gender</b>		
	a. Male	11	10.18
	b. Female	97	89.81
<b>3</b>	<b>Marital status</b>		
	a. Married	83	76.85
	b. Single	23	21.29
	c. Divorced	1	0.92
	d. Other	1	0.92
<b>4</b>	<b>Qualification</b>		
	a. GNM	7	6.4
	b. BSN	98	90.7
	c. Master degree	3	2.7
<b>5</b>	<b>Job experience</b>		
	a. < 10 Year	30	27.7
	b. 10-20 Years	63	58.3
	c. >20 Years	15	13.8
<b>6</b>	<b>Years of experience in cardiac unit</b>		
	a. < 10 Year	48	44.4
	b. 10-20 Years	49	45.3
	c. >20 Years	11	10.1



**Figure 1: Percentage distribution according to educational qualification (N=108)**



**Figure 2: Percentage distribution according to Job Experience (N=108)**

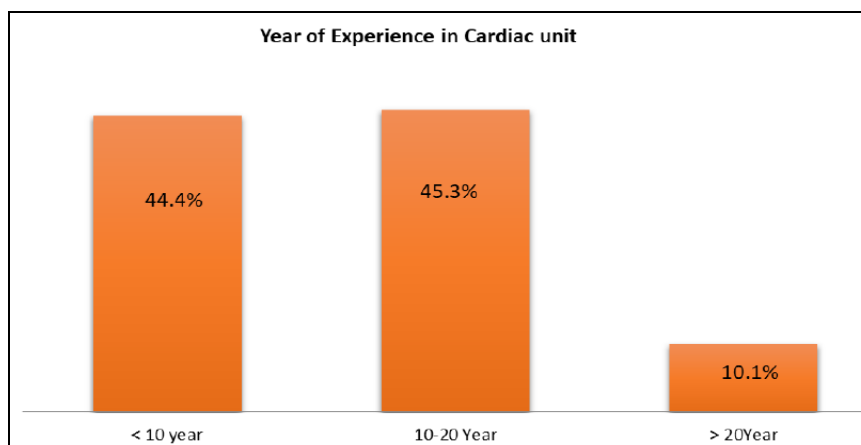


Figure 3: Percentage distribution according to Year of Experience in Cardiac Unit (N=108)

## Section B: Description of the level of knowledge among Cardiac Nurses regarding patient safety after cardiac catheterization

Table 2: Frequency and percentage distribution of the level of knowledge (N= 108)

Level of knowledge	Frequency (n)	Percentage (%)	Mean	SD
Adequate = $\geq 80\%$	17	15.74	1.4	SD 2.6
Moderate = 50- < 80 %	70	64.81	6.84	
Poor = <50%	21	19.44	9.14	

## Section C: Description of the association between the levels of knowledge towards patient safety after cardiac catheterization among cardiac nurses with their selected demographic variables.

Table 3. Association between the level of knowledge regarding patient safety with selected demographic variables. (N= 108)

Sl.NO	Demographic variables	Level of knowledge			Statistical value
		Poor	Moderate	Adequate	
1	<b>Age</b>				P = 0.013* $\chi^2 = 16.16$
	a. 20-30years	9	13	3	
	b. 31-40years	8	41	12	
	c. 41-50years	0	15	4	
	d. 51-60years	0	1	2	
2	<b>Gender</b>				P=0.171 $\chi^2=3.53$
	a. Male	3	8	0	
	b. Female	14	62	21	
3	<b>Qualification</b>				P= 0.238 $\chi^2=5.52$
	a. GNM	3	3	1	
	b. BSN	13	65	20	
	c. Master degree	1	2	0	
4	<b>Job experience</b>				P= 0.014* $\chi^2=12.45$
	a. < 10 Year	10	17	3	
	b. 10-20 Years	7	43	13	
	c. >20 Years	0	10	5	
5	<b>Years of experience in cardiac unit</b>				P= 0.002* $\chi^2=16.45$
	a. < 10 Year	15	27	6	
	b. 10-20 Years	2	35	12	
	c. >20 Years	0	8	3	

\*Significant at 0.05 level

It is inferred from table that there was a statistically significant association of knowledge with age, job experience and years of experience in cardiac unit at 0.05 levels.

## RESULT

The analysis of the study revealed that among the 108 cardiac nurses 64.81%

were having moderate knowledge and 15.74% had adequate knowledge level whereas 19.44% were having poor level of knowledge regarding patient safety after cardiac catheterization.

It was statistically proven that there was a significant association of knowledge regarding patient safety after cardiac catheterization among cardiac nurses with

age, job experience and years of experience in cardiac unit.

## DISCUSSION

Study was conducted in 108 nurses in DHA Hospitals in UAE to assess the level of knowledge regarding patient safety after cardiac catheterization. The analysis of the study revealed that among the 108 cardiac nurses 64.81% were having moderate knowledge and 15.74% had adequate knowledge level whereas 19.44% were having poor level of knowledge regarding patient safety after cardiac catheterization. It was statistically proven that there was a significant association of knowledge regarding patient safety after cardiac catheterization among cardiac nurses with age, job experience and years of experience in cardiac unit. There was no statistically significant association between knowledge and other selected socio personal variables namely gender and qualification.

This finding can be supported by another study similar to this study conducted at selected hospitals Guwahati, Assam, India, to evaluate the knowledge and practice among staff nurses regarding patient safety after cardiac catheterization. The findings of the study revealed that majority of the staff nurses had average knowledge level (52%), and 4% had the poor score whereas 44% have the good knowledge (Sheema, C.L. et al., 2018).

In contrary to these results, a study done on Assessment of nurse's knowledge and practice for patients undergoing cardiac catheterization conducted in Assiut University, Egypt. The result showed that nurses 87.5% had unsatisfactory level of knowledge whereas only 12.5 % had satisfactory level of knowledge about nursing care for patients undergoing cardiac catheterization. The study concluded that nurses showed inadequacy of their knowledge and practice regarding care of patients undergoing cardiac catheterization (Thabet, O.F. et al., 2019).

Consistent with the present study a descriptive cross-sectional study was

conducted to assess nurses' knowledge regarding cardiac catheterization and associated factors at general hospital in Rania city, India, study found the association between nurse's knowledge and some socio- demographic characteristics of the sample for sixty nurses and the result showed that there are significant relationship among Age, Gender, Years of employment and number of training course with nurse's knowledge except level of education (Sharif, B.O. et al., (2018).

Another descriptive survey approach study was conducted to assess nurse's knowledge about patient safety after diagnostic cardiac catheterization at Azadi teaching hospital in Kirkuk City. The socio-demographic characteristic (Age, Gender, Level of Education, Years of experience) of the sample of the study has no significant relationship with knowledge at (P value <0.05) (Younus, S.F., 2018).

## CONCLUSION

The study concludes that cardiac nurses reflected moderate level of knowledge regarding patient safety after cardiac catheterization. Study statistically proven that there was a significant association of knowledge regarding patient safety after cardiac catheterization among cardiac nurses with age, job experience and years of experience in cardiac unit. There is a need to follow innovative approaches in training and consider including post cardiac catheterization care in education session.

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**Conflict of Interest:** None

**Source of Funding:** None

**Ethical Approval:** Approved

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