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# Knowledge and Practice of Registered Nurses about Patient Safety after Cardiac Catheterization in Punjab Institute of Cardiology Hospital in Lahore, Pakistan

Mariam Feroze<sup>1\*</sup>, Muhammad Afzal<sup>2</sup>, Hajra Sarwar<sup>3</sup>, Amir Galani<sup>4</sup>, Shamila Afshan<sup>5</sup>

- 1. Student of BSc Nursing Degree Program (Post RN), Nursing Hostel, Punjab Institute of Cardiology, Lahore, Pakistan.
- 2. Principal, Department of Nursing, University of Lahore, Pakistan.
- 3. Demonstrator, Department of Nursing, University of Lahore, Pakistan.
- 4. Dean, Department of Nursing, University of Lahore, Pakistan.
- 5. Biostatistician, Punjab Institute of Cardiology, Lahore, Pakistan.

**Background:** Cardiac Catheterization is a critical health status which requires standardized care policies, as well as it needs qualified and skilled health provider to obtain good outcome of management. This study aimed to assess the knowledge and practice of nurses regarding patient safety after cardiac catheterization.

**Material:** This cross-sectional study was conducted in Punjab Institute of cardiology located in Lahore, Pakistan from 01<sup>st</sup> December 2016 to 31<sup>st</sup> March, 2017. 171 female nurses through using convenient sampling technique were included in the study. Questionnaire with multiple choice was used to collect data. Likert scale for multiple choose questionnaires regarding knowledge and practice of the nurses were used. Collected data were analyzed using SPSS version 21.

**Results:** Out of 171 participants, all (N = 171) were female, most nurses had job experience of 2-5 years and 6-10 years, they were represented by 34.5% and 31.0% respectively. Mean of total knowledge was found good, when compared to mean of practice which was poor. This showed that nurses have good knowledge about post cardiac catheterization complication. It was found significant value of P < 0.0001 by applying correlation, that showed there was a good association between knowledge and practice (P < 0.05).

**Conclusion:** There was positive association between the knowledge and practice about patient's safety after Cardiac Catheterization among Pakistanis registered nurses. Nurses those have proper knowledge and practice could help in rehabilitation of patients.

**Keywords:** Registered Nurses, Knowledge, Practices, Patient Safety, Cardiac Catheterization

## Introduction

ardiac Catheterization (CC) is that process which supposed as the golden standard for the diagnosis, evaluation, and treatment of cardiac diseases. Cardiac catheterization process is an extra valuable process for diagnosis and obtaining minute

Corresponding author: Student of BSc Nursing Degree Program (Post RN), Nursing Hostel, Punjab Institute of Cardiology, Lahore, Pakistan. e-mail: shamailalam@gmail.com

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information about the structure and function of the cardiac chambers, valves and coronary arteries. This process also include studies of the right or left sides of the heart and coronary arteries (Mohammed, Said & Salah 2013; Ahmed, 2015).

Many patients suffer from preventable harm during health care in hospitals (Sheikh et al., 2015). Therefore, improving patient safety is at the forefront of policy and practice (Panesar et al., 2015). Moreover, it is responsibility of cardiac nurses to take care of post cardiac catheterize procedure patients with proper standard because it is very contagious to retain infectious diseases (Sutker, 2008). There are

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ideas that most of the threats are relate to patients safety and illness and arise from health care provider and organization system factor. factors such Professional health as professionals' awareness and regarding patient safety have an influence on to patient safety, particularly when health care provider have a deficit level of safety knowledge and skillfulness to deliver secure care for their patients. Hence, the competencies of the cardiac nurses is imperative, little negligence's of cardiac nurses, there is a chance of getting minor and major complication such as hematoma, ecchymosis and oozing, cardiac perforation and abrupt closure etc. Therefore, nurses are playing an extremely important role in post cardiac catheterization patients management (Ahmed, 2015). Moreover, nurses need to develop standard and safe protocol of care for the patients of post cardiac catheterization and percutaneous coronary intervention that protocols should be researched and be evidence based. Hence, Patient outcomes can be improved if there is a greater quantity or quality of nursing care (Ahmed, 2015).

Moreover nurses who work in patient care after post cardiac catheterization procedure should be educated and have vast knowledge and skills to treat patients whose coming from different cardiac catheterizations procedure that require standard operating nursing care (Chen & Crozier, 2014).

Nurses in the Cardiac Catheterization Lab (CCL) play a vital part in providing quality care to their patients. Through knowledge and current evidence based practice, is the key to become an effective and efficient nurse (Incardone, 2011).

CC staff and nurses whose caring for post cardiac catheterization procedure patients should be work together to reduce complications, when possible, and treat these complications when they occur. Careful nurses' assessment and monitoring are required to reach these goals. Nurses with specialized in cardiac training must need to assess, identify and manage the blood vessels (Ahmed, 2015). Given the importance of the discussed issues, this study aimed to assess the knowledge and practice of nurses regarding patient safety after cardiac catheterization.

#### **Methods and Material**

This cross sectional study included 171 consecutive female registered nurses selected for

the period of 1st December, 2016 to 31st March 2017 from Punjab Institute of Cardiology (PIC), Lahore, Pakistan.

Nurses who working in emergency ward, CCU and cardiology ward of PIC Hospital were included while medical doctors and paramedical staff of PIC were excluded from study.

Data were collected using the structured questionnaire which was comprised of three sections. Section A was about socio demographic data, section b was a structured knowledge questionnaire which contained knowledge questions and section C was a structured practice questionnaire which contained practice questions. All questionnaires were attached to this manuscript.

The questionnaire contains thirty one questions were presented in a multiple choice response format with a single correct answer.

A score of 1 was awarded for each correct answer. Therefore,  $\leq 40\%$  correct responses were considered as poor knowledge/ practice and > 40% correct responses were considered as good knowledge/practice.

## **Statistical Analysis**

Data were analyzed by using Statistical Package for the Social Sciences (SPSS) version 21.0. Frequencies and percentages analysis were given for qualitative variables. Correlation of the knowledge and practice of the studied nurses were analyzed by using Spearman correlation coefficient. Level of significance was taken as  $\leq 5\%$ .

## Results

All the studied nurses were women. According to qualification distribution, the present study showed that most of the nurses were B.sc nursing diploma (48.5%), and the rest were post RN BSc (22.8%) and also specialized in CCU (28.7%). The majority of theme (41%, N = 71) were in age range between 26 and 30 years old. Figure 1 shows the frequency rate of other age groups. The distribution of the studied nurses in terms of job experience is shown in Figure 2. As this Figure shows, the most participants (35%, N = 59) had job experience between 2 and 5 years. According Figure 3, the most participants were unmarried (33%, 64).

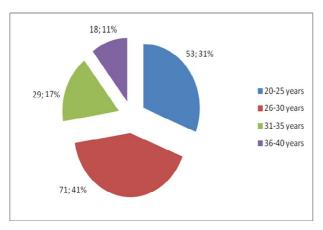


Figure 1. Demographic information of the participants with respect to age group.

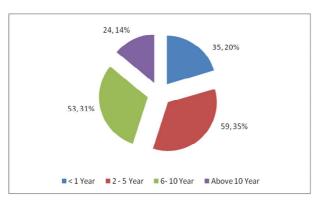


Figure 2. Distribution of the sample according to job experience.

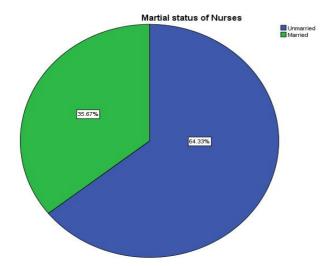


Figure 3. Graphical Distribution with respect to marital status.

The correlation between knowledge and practice is shown in Table 1. As this Table shows, there is positive correlation between knowledge and practice of the studied nurses (P < 0.0001). Furthermore, the correlation between

nurse's qualification and knowledge is shown in Table 2. This correlation at P = 0.024 is significant.

Table 1. Correlation Test applied on Knowledge and Practice.

	Value	P-value.
Correlation	0.877	< 0.0001

Table 2. Correlation Test applied on nurse's qualification and knowledge.

	Value	P-value.
Correlation	0.070	0. 024

## Discussion

Nursing care is important in patients' survival and prevents the patients from post cardiac catheterization complications. Thus, the competence of nurses due to their knowledge and practice regarding patient care after cardiac catheterization is very crucial. The current study assessed the nurse's knowledge and practice regarding patient's safety after cardiac catheterization.

The findings regarding age groups and job experiences of the studied nurses of this study revealed that most of nurses were in age group of 26-30 years and with less than 5 years' experience. This finding indicated that most of the nurses were juniors. The advantages of nurses in young age group are being hyperactive which is always required in such crucial /vital wards. This justification discussed in previous study (Arathy, 2011). According to findings regarding the marital status distribution, was also in the line of both previous findings regarding age group and job experience. Furthermore, this study indicated that most of nurses working in the PIC, were highly educated and qualified that is a kind of benefit for CC wards.

In current study, the studied nurse's knowledge about post cardiac catheterization complication was assessed. The results showed the most nurses had good knowledge about post cardiac catheterization complication. Similar study that was done in Al-Najaf city to determine the nurses knowledge found that nurses had good knowledge about cardiac patient care (Nahla Shaaban, 2015). Nurses' knowledge sufficient about good and cardiac catheterization procedure. In consistent to the present study, a study conducted in cardiac unit Feroze M. et al. DOI:

to determine the nurses knowledge about pacemaker implantation showed the similar results (Hadi, 2016). This study conducted to determine the nurses' knowledge about caring patient who had intra-aortic balloon pump. However, previous research reported unsatisfactory nurses knowledge regarding caring of patients with cardiac procedure (Rushdy et al., 2015). In current study nurses have a good knowledge about patient care after cardiac catheterization procedure.

Furthermore, the present study showed, the nurses' practice regarding patient care after cardiac catheterization was poor. similar Α conducted in Cairo university hospitals to determine the nurses' practice about patient caring regarding connected intra-aortic balloon pump was very unsatisfactory (Rushdy et al., 2015). In current study nurses had good practice about some post procedurals items like explain post procedure care, removal of sheath, apply firm pressure over catheter site, assess stability for pain, assess skin color or temperature and instruct the patient for self-management at home. A study conducted in Sulaimani city and found that nurses hah good practice about post cardiac procedure (Aziz, 2014).

Current study assessed the knowledge and practice performance of nurses about post cardiac catheterization complication and different post cardiac catheterization care procedure provided by the cardiac nurses. The overall outcome has shown that, there was a

variation between knowledge and practice in some procedures. Overall knowledge about post cardiac catheterization complication was better as compared to practice, but practice was found good and near to knowledge only among some post procedure items like explain post procedure care, removal of sheath, apply firm pressure over catheter site, assess stability for pain, assess skin color or temperature and instruct the patient for self-management at home but the overall practice was poor. In current study it was found that nurses had good knowledge and poor practice.

Out of 28 standard items of knowledge and practice which were assessed, only 2 items were significant that is the qualification of nurses through crosstab with knowledge and also the correlation between knowledge and practice was significant. A similar study conducted in Egypt and reported similar findings of insignificant relationships between age, job experience and other variables (Nahla Shaaban, 2015). In current study there was no significant correlation existed between gender, age, job experience and marital status. There were negative correlation between practice and years of experience.

Moreover, there was a significant relationship between knowledge and practice, knowledge and qualification. This result showed that qualification has great effect on the nurse's knowledge and nurses and can develop their knowledge through the experience.

## Questionnaire to assess the Knowledge and Practices among Registered Nurses about Patient Safety after Cardiac Catheterization in Punjab Institute of Cardiology Hospital

# Section-A Socio Demographic Data

For each question please circle one answer that best reflects the extent to which you agree.

Organization		Designation:		
Gender	1- Male	Marital Status	1- Married	
	2- Female		2- Unmarried	
Age Group	1- 20-25ears	Qualification	1- General Nursing Diploma +	
	2- 26-30years		Midwifery	
	3- 31-35 years		2- BSN/Post RN	
	4- 36-40years		3- MSN	
			4- Specialization	
Job Experience	1- < 1 Year	Years Of Experience in	1- < 1Year	
	2- 1-5 Years	cardiac unit	2- 1-5Years	
	3- 6-10 Years		3- 6-10Years	
	4- Above 10 Years		4- Above 10Years	

**Section-B Structured Knowledge Questionnaire.** 

# **NOTE:** Encircle the most appropriate answer.

1. What are the local complications occurring in patients after cardiac	anth starigation? Mark all that apply			
1- Hematoma 🗆	2- AV fistula 🗆			
3- Thrombus formation □	4- Stroke			
5- Renal failure □	6- AORTIC dissection□			
2. How will you detect pseudo aneurysm after cardiac catheterization?				
1- Pain at the puncture site □	2- Severe bleeding from the puncture site $\square$			
3- Pulsatile swelling and bruit □	4- Fever □			
3. When should you check the serum creatine level of patients after ca	rdiac catheterization?			
1- Immediately after the procedure □	2- One day after the procedure □			
3- One week after the procedure □	4- No need to check □			
4. What is the complication of delayed sheath removal?				
1- Bleeding □	2- Thrombus formation □			
3- Air embolism □	4- Tachypnea □			
5. Development of contrast-induced nephropathy occurs				
1- One week after the procedure □	2- 5 days after the procedure □			
3- 2-3 days after the procedure $\square$	4- One the day of procedure □			
6. Who is at risk for developing renal failure after cardiac catheterizati	on?			
1- Young adult □	2- Hypertensive patients □			
3- Elderly □	4- Dyslipidemia □			
7. What is the sign of thrombus formation after cardiac catheterization	?			
1- Absence of distal pulse □	2- Pain at the puncture site □			
3- Swelling at the puncture site □				
8. How should the patient's affected extremity to be kept immobilized after cardiac catheterization?				
1- 1-3 hour □	2- 4-6 hours □			
3- 6-8 hour □	4- above 8 hours □			
9. Who is at risk for developing pulmonary edema after cardiac catheterization?				
1- LV failure □	2- RV failure □			
3- AORTIC Regurgitation □	4- Pulmonary AV fistula □			
10. When you detect a hematoma at the puncture site after cardiac catheterization, you should not.				
1- Elevate the bruised extremity □	2- Apply ice □			
3- Lower the bruised limb □	4- Apply pressure bandage □			

# Answer Key: 1, 3, 2, 2, 3, 3, 1, 3, 1, 3: Coded into Correct and Incorrect. Section-C Structured Practice Questionnaire.

S. No	Items	Always	Sometimes	Never
1	Explain the post procedure care			
2	Remove the sheath			
3	Observe the catheter site insertion for bleeding or hematoma			
4	Assess the skin color or temperature			
5	Assess the vital sign for (15-30) minutes for (2) hours initially and less frequently			
6	Assess for stability of pain			
7	Monitor the patient by ECG			
8	Places the patient in a supine position a padded table in the room			
9	Encourage patient to increased fluid intake			
10	Observe for signs of hypersensitivity to the contract and other sign			
11	Check the patient output			
12	Observe the extremity in which catheter inserted straight for 4-6 hours after procedure Immobilizes the arm on arm board, if the anticubital vessels are used			
14	Instruct the patient to cough it there is a chest discomfort	' '		
15	Pressure dressing over the insertion site when catheters withdraw			
16	Applies firm pressure over the site, if any bleeding occur			
17	Monitor intake output after 24 hours following the procedure			
18	Instruct the patient for self-management at home, before discharge			

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#### Conclusion

This study found the knowledge of registered nurses' knowledge regarding cardiac catheterized patients' casing is good. However the study revealed that the nurses' practice was not satisfactory. There was a significant association between knowledge and practice regarding patients' care of these patients among registered nurses' of Lahore, Pakistan. However, these results should be confirmed in more future researches.

## **Conflict of Interest**

There is no conflict of interest for this article.

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## **Authors ' contribution**

MF, MA, HS, AG, SHA; Study Importation, Data collection and analysis, Writing the first draft of the Paper.

MF, MA, HS, AG, SHA: Study design and data analysis, editing and confirming the final draft of the paper.

MF, MA, HS, AG, SHA: Study design, confirming the final draft of the paper.

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# References

Ahmed, M. (2015) Predictors of Post-Cardiac CatheterizationFemoral Artery Hematoma and Bleeding. *Journal of American Science*, 11 (3), 16-22.

Nahla Shaaban, A., Warda, Y., Abdo, M. & Ali, H. (2015) Nurses' knowledge and practice regarding implantable cardiac devices in Egypt. *British Journal of Cardiac Nursing.* 10 (1). Available from: https://doi.org/10\_12968/bjca.2015.10.1.34 [Accessed on 8th July, 2017].

Arathy, s. R. (2011) A study to assess the knowledge and practices among cardicac nurses about patients safety after cardiac catheterisation. Sree Chitra Tirunal Institute for Medical Sciences and Technology. Code No 6210, Available from: http://dspace.sctimst.ac.in/jspui/bitstream/123456789/1595/1/46 9.pdf [Accessed on 8<sup>th</sup> Jouly, 2017].

Aziz, A. (2013) Evaluation of Nurses' practices provided to the Patients who undergo Open Heart Surgery in Sulaimani center of Heart Diseases (SCHD). *Kufa Journal for Nursing Sciences*.3 (!), 69-81,.

Chen, W. & Crozier, C. (2014) Endovascular repair of thoracic aortic pathologies: postoperative nursing implications. *Journal of Vascular Nursing*, 32, 63-69.

Hadi, A. (2016) Nurses, Knowledge Concerning an Implantation Pacemaker For Adult Patients with Cardiac Rhythm Disorder at Al-Nassirrhyia Heart Center. *Kufa Journal for Nursing Sciences*. 16 (1), 216-223.

Incardone, R. (2011) Creating a Self Learning Module For Nurses Caring for Patients Undergoing Angioplasty and Receiving Anticoagulation Therapy. *Nursing Masters*. Paper 8. Fisher Digital Publications, Available from: http://fisherpub.sjfc.edu/nursing\_etd\_masters/8 {Accessed on July 8, 2017].

Mohammed, M., Said, S. & Salah, M. (2013) Determining Best Nursing Practice: Effectiveness of Three Groin Compression Methods Following Cardiac Catheterization. *Journal of American Science*. 9 (6), 274-285.

Panesar, N., Carson-Stevens, L., Cresswell, L., Salvilla, S., Slight, J., Javad, J. et al. (2015) How safe is primary care? A systematic review. *BMJ Quality and Safty.*.25 (7), 544-553.

Rushdy, R., Youssef, Y. & Elfeky, Y. (2015) Nurses' knowledge and practice regarding care of patients connected to intra-aortic balloon pump at Cairo university hospitals. *Egyptian Journal of Nursing*. 10 (1). Available from: erepository.cu.edu.eg [ Accessed on 8<sup>th</sup> July, 2017].

Sheikh, A., Sood, H. S., & Bates, D. W. (2015) Leveraging health information technology to achieve the "triple aim" of healthcare reform. *Journal of the American Medical Informatics Association*, 22, 849-856.

Sutker, W. L. (2008) The physician's role in patient safety: What's in it for me? *Proceedings. Baylor University. Medical Center*, 21 (1), 9-14.

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