

ORIGINAL ARTICLE

Effect of Educational Intervention on Knowledge among Female Nurses Regarding Pre and Post Angiographic Care

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ABSTRACT

Background: Nurses knowledge plays a very important role in the pre and post angiography care in hospital settings. But unfortunately, there is less attention given to improve nurses' knowledge.

Objective: To assess the improvement in the knowledge among female nurses after intervention regarding pre and post angiography care.

Methodology: A quasi experimental study was conducted at Faisalabad Institute of Cardiology in June to September 2021 on 40 female nurses via a convenient sampling technique used for data collection. 16 weeks of planned sessions completed and each individual was facilitated with 16 hours learning hour's organized in morning and evening shifts according to the participant's availability. Relatively, pre and post intervention sessions were organized for four months.

Results: The results of present interventional program showed a remarkable impact on nurses' knowledge related to pre and post angiography care. The pre-score was inadequate regarding pre and post angiography care of the participants on the other hand, there was an improvement after 16 weeks of interventional lecture session in the nurses knowledge scores 97.5% ($p \leq 0.00$), SD= related to pre and post angiography care.

Conclusion: The present study showed that there was a great impact on nurses' knowledge scores after interventional lecture sessions regarding pre and angiography care. So, it is concluded that lecture sessions, seminars and workshops should be arranged on regular basis to keep the nurses knowledge up to date and to get better output.

Key words: Nurses 'Knowledge, Angiography, Care

INTRODUCTION

Cardiovascular diseases include all diseases of the heart and blood vessels. The cardiovascular disease (CVD) includes two major sub-types; coronary artery disease (CAD) and Cerebrovascular disease (CVS) (Organization, 2018). Each year 17 million deaths occur by CVD accounting one third worldwide deaths. In adult men and women cardiac diseases and ischemic attacks 1st and 2nd leading cause of death in developed countries and this burden among developing countries increased significantly (Organization, 2018). In 2018, another a cross sectional survey in Punjab also reveals that prevalence of cardiovascular disease is higher in females than male with a ratio of 18.3% & 16.6% respectively. This study shows that CVD is a serious problem in also Punjab Pakistan like other developing countries (Tasneem, Iqbal, Munir, Elahi, & Afshan, 2018).

Angiography is a best procedure to diagnose heart diseases and is considered to be golden technique. (Elgazzar & Keshk, 2018). Angiography now a days, is going to be come to be a very common, due to diseases of coronary artery are rising. There is about 610,000 people die due to heart disease in the United States each year, and that's 1 in every 4 expiries, in according to Centers of disease Control and Prevention. Killing over 370,000 people annually due to diseases of coronary artery of the heart are the most common type of cardiac disease. The most common cause for admission of the patients are due to cardiac or coronary complications are going on alarmingly now a day (CDC, 2015). The most common catheterization complications are the Complications of vessels like bleeding, collection of blood (hematoma), and distal emboli due to trauma caused in the artery wall. Complications can be reduced by taking care of full measures (Heravi, Yaghubi, & Joharina, 2015). Heart attack, ischemia, Damage to the catheterized artery, arrhythmias (Irregular heart rhythms), Allergic reactions due to the dye or medications that are used during the procedure, damage to the kidney, bleeding excessively and infections all are the potential threats/risks factors and complications (Mayo Clinic, 2018). Worldwide, the most common cause of death is coronary artery diseases and it complications, the death of many people occur due to this disease (Manda & Baradhi, 2018). In 2019, a cross-sectional study was conducted on 79 nurses' in tertiary hospital Karachi Pakistan to

assess the level of knowledge regarding cardiac catheterization. The results of the study showed a 27.2+6 mean knowledge score. Adequate level of knowledge showed by 38 nurses, inadequate level of knowledge showed by 28 nurses' and 13 excellent level of knowledge showed by four nurses' (Yaqoob et al., 2019). Similarly, another cross sectional study was done on 171 nurses to assess the knowledge related to cardiac catheterization at Lahore. The study results showed a positive correlation between knowledge of nurses and practices in nurses who had work experience 2-10 year ,showed a good result on evaluation with a P-value <0.05 (Feroze, Afzal, Sarwar, Galani, & Afshan, 2017). A nurses' role is well-known as a "spider-in-the-web" similar character in caring for patients post coronary intervention. A specialized nurse can efficiently deal with all kinds of emergencies like cardiac problems, included on rhythmic irregularities immediately defibrillation and administration of emergency medicines. In attending consultants and patients, nurses can play an important role between them. This intermediate character can be united by using two sides, helpful as "nurse" and remedial as "physician". The both characters could be noticeable only if these competencies by constructing comprehensive understanding and accomplishing proficiency in hands-on services by the nurses (Yaqoob et al., 2019). Furthermore, another study was conducted by Olfat et al in 2019 in Egypt on nurses working in cardiac catheterization units at Assuit university hospital. The purpose of the study was assessment of nursing care standards on nurse's knowledge. The result of the study showed that there was a major difference in nurses' knowledge and their practices score putting into practice of standards of nursing ($p < 0.018$). In this study, it was concluded that nurse's knowledge was inadequate, so there was a need of improvement in nurses' knowledge to reduce complications in patients for undergoing cardiac catheterization procedures (Thabet, Ghanem, Ahmed, & Abd-ElMouhsen, 2019). Just in the same way, a study with a sample size 50 was done by Ahmed Fleihin May 2017 in Iraq to assess the nurses' knowledge about patient safety after cardiac catheterization in adult patients from unit of heart surgery at Ibn AL Biter cardiac surgery specialist Centre. The study results showed that nurses needs informative platform in the cardiac cath units to progress about safety of patients and escape from complications after catheterization procedure with Pearson coefficient 61.3% ($p = .853$) (Hassan,

2017). Beyond this, another quasi experimental study was also conducted by Pareeti George at kempegowda institute of health sciences and research center with a sample size $n=60$ on nurses to assess the effectiveness of the study. The study results showed a significant improvement in the nurses' knowledge after intervention (George & A K, 2021). Another similar quasi pre and post study was also conducted by Aamar in 2020 at Middle East region to check the effectiveness of educational program on nurses' knowledge regarding pre-operative cardiac surgery at the Middle East Euphrates region via a non-probability convenience sampling technique on 48 nurses. According to study results there was effective improvement in the nurses' knowledge regarding preoperative patient care (p -value less than 0.01) (Abboud, Yasir, & Muhabes, 2020). The most important purpose of the study was to assess the improvement in nurses' knowledge regarding pre and post angiography care.

METHODOLOGY

The purpose of the study was to measure the knowledge of nurses regarding pre and post angiography care. A pre and post quasi experimental study design was used to conduct this study at Faisalabad institute of cardiology in Punjab Pakistan from June to September, 2021 via a convenient sampling methods on $n=40$ nurses. Participants' selection done by filtration process whose knowledge level was inadequate. Lecture sessions were arranged and each participants completed with 16 hours according to their feasibility. Confidence level was 95%.

Inclusion and Exclusion Criteria: Female nurses' age between 21-50 years working in angiography wards were included. While nurses who were on leave and not working in morning and evening shifts or working in emergency departments or in private entities was excluded.

Research Instrument: A validated questionnaire was used. The questionnaire was include on total 50 questions in which 48 Multiple questions and 2 true/false questions.

Validity and Reliability: The reliability of the instrument was checked by Cronbach's alpha coefficient test. The Cronbach alpha was $r = .89\%$.

Scoring Method: The correct answer was scored as 1 and wrong answer was scored as "zero". The knowledge categorized as inadequate $< 50\%$, adequate $\geq 50\%-74\%$ and excellent $\geq 75\%$ or above (Yaqoob, 2019).

Data Collection Procedure: Research program was included on 16 weeks, 1 hour per week. Researcher took sample size $n=40$ nurses and each participant were completed with total 16 hours with teaching learning strategies according to their time arrangement. During lecture sessions, the participants were delivered soft and hard materials with videos related to pre and post angiography care which were prepared from previous literature.

Data Analysis procedure: After data collection procedure, the data was analysis through SPSS software version 26. Descriptive Statistics were used to measure pre and post frequencies, mean, percentages and standard deviation were calculated. Paired t-test were used

RESULTS

Table.1 shows that 37.5% participants were between 31-35 years of age. According to qualification 67.5% are diploma nursing and 32.5% have experience between 1-5 years. The table.2 study results shows that the overall mean of age score was 33.3 with $SD=5.21$ and experience mean score was 9.53 with $SD=5.41$. In table.4 the mean score of pre-knowledge found to be 20.03 with standard deviation was 3.79 whereas post knowledge score was 36.08 with standard deviation (SD) 5.68 among female nurses. A paired t-test applied between pre and post knowledge score of the study participants to measure the impact of intervention of the study program which was highly significant p -values ≤ 0.000 . In table.3 pre-knowledge score was inadequate 100% ($n=40$).

Whereas, there was an improvement in the post-knowledge scores inadequate score was 1 ($n=40$), adequate knowledge score 20 ($n=40$) and 19 ($n=40$) had excellent knowledge score.

Table 1: Demographic Details

Sr. No.	Variables	Frequency	%
1.	Age in years		
	21-25Y	1	2.5
	26-30Y	14	35.0
	31-35Y	15	37.5
	36-40Y	7	17.5
	41-45Y	2	5.0
2.	Gender		
	Female	40	100
	Male	0	0
3.	Professional Educational Status		
	MSN	0	0
	BSN	2	5
	POST RN	11	27.5
	DIP. Nursing	27	67.5
4.	Specialization		
	Dip. card	2	5
	Dip. Nursing	38	95
5.	Experience		
	1-5 Years	13	32.5
	6-10Years	12	30
	11-15Years	11	27.5
	16-20Years	3	2.5
	21-25Years	1	2.5

Table 2:

	N	Min.	Max.	mean	SD
Age	40	24	47	33.23	5.21
Experience	40	2	28	9.53	5.41

Table 3: Pre and Post Knowledge Level among Nurses Regarding Angiography

	Pre knowledge category	Post knowledge category		
	Inadequate $< 50\%$	Inadequate $< 50\%$	Adequate $\geq 50-75\%$	Excellent $> 75\%$
Frequency	40	1	20	19
Percent	100%	2.5%	50%	47%

Table 4: Comparison of Pre and Post Nurses' knowledge about Angiography

Variables	Mean	SD	Shapiro-Wilk	Correlation	sig
Pre-knowledge	20.0250	3.78585	.845	-.169	.00
Post-knowledge	36.0750	5.68122	.966		0

(A very high significant difference is that p value ≤ 0.000).

DISCUSSION

Findings showed that knowledge level has been significantly effective in increasing nurses' knowledge regarding pre and post angiography care. In this regard, finding of the present study consistent with the study of Heba et al. (2019), which is a quasi-experimental study with the aim to improve nurses' knowledge and practices regarding patients safety after cardiac catheterization complications. In this study, designed teaching protocol was adopted

Results of the present study showed that interventional lecture sessions that are adopted to improve the nurses' knowledge regarding pre and post angiography care can enhance the nurses' knowledge about angiography care.

Such interventions that are made according to nurses' exposure in clinical area practices by using reliable and validated tool. In this study, after interventional session nurses' knowledge was significantly increased.

The reason of inadequacy in nurses is lack of proper tutorial, workshops and lecture sessions as ascribed the fact that nurses are not offering training sessions (Jafferri, 2016).

Study Limitations: For more precision and accuracy, different clinical areas could be included in the research. The current research study had many limitations as it was conducted in a single public sector hospital. The sample size was too small. Pre and post group participants are also same. Single group was evaluated in this research study.

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CONCLUSION

On the basis of current study findings, it is concluded that knowledge level play a very important role in improving the confidence, work performance, to deal with other professionals in a better way and improvement in communication style. All above will be achieved through learning new ideas and updated knowledge regarding angiography.

Recommendation: By studying above research it is strongly recommended that nurses' knowledge will be improved by arranging workshops, motivation to research, seminars and lecture sessions on regular intervals in the clinical sites to reduce complication and uplift the patient satisfaction level by the administration. As it was also strongly recommended in the previous studies (Thabet, Ghanem, Ahmed, & Abd-ElMouhsen, 2019).

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