

The Effect of Teaching Programme on Knowledge and Caring Practice of Intra-Aortic Balloon Pump Patient Among ICU Staff Nurses

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ABSTRACT

Background: The intra-aortic balloon is the most commonly used of all circulatory assist device provide the circulatory support for cardiac patients experiencing hemodynamic instability due to cardiogenic shock and myocardial infarction. during angioplasty for those patients on very high risk, and also used during coronary artery bypass grafting (CABG). During this device nurses play a very important role to provide care. nurse knowledge and practices are very helpful to soon recovery and prevent from complication. Educational programme is necessary for upgrading the nurse knowledge and skills.

Objectives: Assess the knowledge & practices of nurses regarding IABP in Cardiac patient and introduce the IABP practice standardized guidelines on care of patient with IABP among ICU nurses.

Material and Method: A Quasi experimental study design was used from October to December 2018. The data was collected from 40 nurses of ICU, CCU of Punjab Institute of Cardiology, Lahore The sampling technique was used convenient sampling. Data was entered and analyzed by using SPSS version 23, finding presented as frequencies, proportions and comparisons of means using a paired sample t-test will analyze. Differences were considered statistically significant if $p < 0.05$.

Results: In this shown that the majority of had nurses had poor knowledge and practice related to intra-aortic balloon pump before educational programme which has been enhanced after educational session of this study.

Conclusion: Empowerment of cardiac critical care nurse's knowledge and practice would have knowledge and skillful impression upon their knowledge and practices.

Keywords: CABG Coronary Artery Bypass Grafting ICU Intensive Care Unit CCU Coronary Care Unit IABP Intra-Aortic Balloon Pump

INTRODUCTION

The Intra-aortic balloon pump (IABP) is a mechanical device that increases myocardial oxygen perfusion and cardiac production in basically sick patients with heart sickness. This examination was done to assessment the adequacy of a Capacity Building Program with respect to mind of Patient with IABP upon the degree of information and Practice among Nurses. ⁽¹⁾

The nursing care includes the consideration of the IABP just as evaluating the patient from a cardiovascular diseases and hemodynamic point of view. The significant that the basic medical attendant should have the information to oversee IABP treatment in a protected and remedial way. The attendant's job requires the activity of the IABP, while simultaneously, the capacity to convey quality nursing care, information on physiology, coordination of the standards of timing with hemodynamic impacts, and handy critical thinking guarantee basic consideration nurture that they can viably deal with the IABP challenge. In any case, a few investigations detailed that information on most of basic consideration medical caretakers tried was discovered to be insufficient. ⁽²⁾

Coronary supply route fills in as a fuel tubes to the heart muscles. Understanding with at least one danger feature for coronary passage sickness is powerless to the expanded development of material starts to invade on the inward network and begins to interfere with the free progression of blood through the coronary channel. As per the American Heart Association, coronary supply route illness caused one of each six passing's in the United States. It appraises that 1.2 million Americans will have a myocardial dead tissue yearly and around one-fourth of these will bite the dust in a crisis division or prior to arriving at the emergency clinic. ⁽³⁾

Intra-Aortic Balloon Pump (IABP) is considered as the first hemodynamic help device to help in quite a while in the myocardial oxygen supply/request proportion and circulatory help. From that point forward, it has accepted an urgent part in the treatment of those with cardiovascular breakdown and myocardial ischemia and is the most generally utilized mechanical help.

IABP is a significant alternative in heart medical procedures and end-stage cardiovascular illnesses; patients are inclined to

numerous confusions because of IABP treatment. This gadget might be utilized in patients with a wide scope of issues that cause low heart yield or cardiovascular shakiness, for example, headstrong angina, ventricular dysrhythmias related with ischemia, pump failure via cardiogenic shock, and intraoperative myocardial dead tissue or low cardiovascular yield after diversion a medical procedure. ⁽⁴⁾

Today in excess of 160,000 patients overall get this treatment every year. A review companion was directed to portray the contemporary use, clinical results and complexity paces of IABP treatment. Information with respect to IABP treatment is crucial to protected, proficient patient consideration in the cardiothoracic emergency unit and ought to be so respected by everyone included. Lewis, Ward, and Courtney directed an examination in 2009 with respect to IABP in cardiovascular breakdown the board and they presumed that to accomplish the most ideal result for a patient dealt with IABP, nursing and clinical staff required particular abilities. Medical attendants assume a basic part in patient observing and appraisal in ICU. Besides, basic consideration medical caretakers are required to oversee IABP treatment. Medical caretakers ought to evaluate changes in patients' condition which require information on the cardiovascular framework, remedial impacts of IABP, and likely unfavorable occasions. ⁽⁵⁾

Besides, there was no particular examination led to evaluate and improves the information and practice of nurses with respect to the administration of a patient with IABP, especially, here thought about significant by the specialist. In this way, a semi trial study was intended to survey the impact of arranged instructing program on information and work on in regards to the administration of a patient with IABP among staff nurses working in ICU of the chose emergency clinic. The investigation is led to investigate the information on the basic consideration nurture with respect to the administration of IABP treatment.

Nursing staff require specialized skills to achieve the best outcome for a patient managed with IABP. Nurses continuously assess and measure suitable changes in patient condition require the best knowledge of the cardiovascular system. the importance

of ensuring maintenance of skills and competencies through simulation techniques a strategy to ensure equitable outcomes for patients receiving IABP. (7)

Literature review was explored different researches for the critical analysis of the question regarding the advanced learning method which is more effective to retain the knowledge of Intra-Aortic Balloon pump and reduced to length of stay in hospital. Which had a determination to find out the research methods, research outcomes and their practice with implications. The overall goal, the literature synthesis of criticisms and identification of the central issue.

Patients with implanted cardiovascular devices establish a developing section of contemporary wellbeing practice. Attendants have an interesting job giving consideration in clinics, long term medical care, training and mental help to these patients. (8)

IABP treatment requires a serious level of nursing abilities in view of the complexity of the hardware and the requirement for continuous observing to stay away from expected difficulties. Attendants should consolidate cautiousness with cautious and deliberate evaluation abilities to really focus on this gathering of patients. The medical caretaker should make sound clinical appraisals and guarantee exact and reliable perceptions. Evaluations and perceptions which should be embraced are those particular to heart work, the IABP capacity and potential complications. (9)

The use of intra-aortic counter pulsation under the condition of cardiogenic shock. the strong recommendations the application rate of IABP support in STEMI complex by cardiogenic shock. Nurses role in caring for patient receiving IABP therapy. the implication for nursing practice of IABP insertion and management of weaning from device nurses when care the patients managed with require a knowledge of mechanism action of IABP. physiology of IABP safety, benefit and monitoring of cardiac complication regular comprehensive patient assessment core nursing responsibility in the management of IABP. (10)

The intra-aortic balloon pump (IABP) is utilized to forestall entanglements after Coronary artery bypass grafting (CABG) medical procedure, even though a few outcomes are dubious and basal ventricular capacity may assume a part. This examination evaluated the advantage of preoperative utilization of IABP, as delineated by the ventricular capacity, in a populace submitted to high-careful danger CABG. (11)

Education is very important play role in nursing care in nursing assessment nursing care involved the limitation of activity that the patient will experience should be explained reduced movement of affected led and bed rest patient must be educated about risk of bleeding when coughing and sneezing advised to put pressure on insertion site and must be notify the nurse promptly if the patient experience pain back and pain in insertion site. (12)

Nursing staff require specialized skills to achieve the best result for a patient managed with IABP. Nurses continuously assess and measure suitable changes in patient condition require the best knowledge of the cardiovascular system. (13)

METHODOLOGY

The population selected for the present study was staff nurses and included 40 staff nurses working in ICU and CCU, who meet the inclusion criteria listed by the researcher. The sampling technique used in this study was a Quasi experimental entails the selection of most readily available individuals as a subject in the study, it represents typical conditions and researcher's knowledge about his population and its elements can be used to hand pick cases. One group pre-test post-test design has been used to find the efficacy of the planned teaching programme on care of the patient on IABP among staff nurses with selected demographic variables. Knowledge questionnaire multiple choice questions to evaluate the knowledge for cardiac ICU nurses about IABP care. Researcher make group of 07-10 nurses for working on same day, which will be convenient to give education session for caring the client and data collection. Educational intervention will be given for 9 months

in their ward of cardiac department. Different days, different groups of nurses will be guided to fulfill the educational requirements. In this phase assessment of nursing knowledge using the tool 1 and tool 2 practice observational check list on care patient with IABP. After 9-month again same questionnaire, we asked to fill it out. It will be filled as they come in contact in their respective department.

RESULTS

Table:1 on the base of age, education, experience, training.

Table 2: Nurses knowledge regarding heart anatomy & physiology.

Table 3: knowledge of nurses regarding IABP uses. The table show the statistical significant difference pre and post educational programme definition of IABP 17(40.5)31(77.5) p- value 0.001.

Table 4: Knowledge regarding indication and complication. There were significant difference pre and post educational intervention 0.002*

Table 1: Demographic Information of Research 's Participants

Demographic data	No (n=40)	%(Percentage)
Age:		
<25 years	9	22.5
≥25 years	31	77.5
Mean ± SD (Range)	18.40 ± 4.19 (22.0-35.0)	
Schooling:		
Diploma nursing (3 years)	24	60
Technical staff	16	40
Experience:		
< 5	8	20
≥ 5	32	80
Mean ± SD (Range)	2.94 ±4.96(1.0-19.0)	
Training / workshops:		
Training	0	0
No workshop / training	40	100

(Table 1: Distribution of staff nurses according to their demographic data schooling training/workshop's)

Table 2: Nurse 's Knowledge Regarding Heart Anatomy & Physiology

Statement	Pre (n= 40)	Post (n= 40)	P-value
Q1- Describe the internal &external anatomy of heart relate the structure of the heart to its function as pump.	15 (37.5%)	18 (45.0%)	0.496
Q2- Introduction of IABP ?	11(27.5%)	25 (62.5%)	0.002**
Q3- How does IABP work ?	3(7.5%)	15(37.5%)	0.001**
Q4- Indications / Contra Indications	13(32.5%)	23(57.5%)	0.25*

Table 3: Knowledge of Nurses Regarding IABP Uses.

IABP Principle	Pre(n= 40)	Post(n= 40)	P-value
Q1- Meaning of IABP	8(20.0%)	26 (65.0%)	0.000**
Q2-IABP components	17(42.5%)	31(77.5%)	0.001**
Q3- Position of the IABP Drain	8(20.0%)	32(75.0%)	0.000**
Q4- Setup of the IABP Console	20(50.0%)	30(80.0%)	0.005**
Q5- inflated IABP	9(22.5%)	31(77.5%)	0.000**
Q6- IABP deflation	16(40.0%)	30(75.0%)	0.002**
Q7- Timing	11(27.5%)	28(70.0%)	0.000**
Q8- IABP benefits therapy	17(42.5%)	26(65.0%)	0.044*
Q9- Trigger	8(20.0%)	27(67.5%)	0.000**
Q10 IABP waveform.	16(40.0%)	30(75.0%)	0.002**
Q11- Management	5(12.5%)	27(67.5%)	0.000**
Q12- Risk Management	11(27.5%)	16(40.0%)	0.237

Table (2): Percentage distribution of nurse's knowledge regarding anatomy and physiology of the heart before and after teaching program. This table reveals that the answers of (37.5% and 45%) of the nurse's regarding structure of the heart were correct before and after teaching program respectively. As regarding function of the heart, site and function of coronary arteries and cardiac cycle there were statistical significant differences pre and post teaching program p value (0.002,0.001&0.025) respectively.

Percentage distribution of nurse's knowledge regarding indication and complications before and after teaching program. This table reveals that the answers (20%and 52.5%)of nurses'

regarding indications of IABP were correct pre and post teaching program. Moreover (20% and 52.5%) of nurses' answers regarding complications of IABP & signs of weaning failure were correct before and after teaching program, while the answers of them (52.5% & 75%) were correct after teaching program respectively. There were statistical significant differences before and after teaching program p value (0.237).

Table 4: Knowledge Regarding Indication and Complication.

Statement	Pre (n= 40)	Post (n= 40)	P-value
Q1- Troubleshooting	8(20.0%)	21(52.5%)	0.002**
Q2- Weaving	17(42.5%)	25(62.5%)	0.073
Q3- Complications of IABP	8(20.0%)	21(52.5%)	0.002**
Q4- Nursing Intervention: i- Cardio vascular system ii- Respiratory System iii- Renal System iv- Gastro interventional system v- Skin	16(40.0%)	30(75.0%)	0.002**

Percentage distribution of nurse's knowledge regarding indication and complications before and after teaching program. This table reveals that the answers (20% and 52.5%) of nurses' regarding indications of IABP were correct before and after teaching program. Moreover (20% and 52.5%) of nurses' answers regarding complications of IABP & signs of weaning failure were correct before and after teaching program, while the answers of them (52.5% & 75%) were correct after teaching program respectively. There were statistical significant differences before and after teaching program p value (0.002).

DISCUSSION

In this study shown that most nurses had poor knowledge and practice related to intra-aortic balloon pump before the educational programme which has been improved after educational session and positive correlation was found in knowledge and practice. In this it was concluded that the educational session were very helpful to improve the nurse's knowledge and effective practices.

Providing of educational session can train nurses who providing care to patients with intra-aortic balloon pump. The knowledge and practice to enhance the earlier highlighted complication. Education provide adequate material to empower nurses to manage with all characteristics and effects of the disease and adopt accountability for their health care. Educational programme enhance the abilities to relief the anxiety to recognize early problems and deal with stressed circumstances and also precise the emotional implication the sickness has or them (Mahgoub et al, 2014).

In this study there will be significant difference between before and after education session the scores of knowledge and practice improved related heart structure (anatomy & physiology) the same words of this finding was that of Huang & Hsu (2012) they build a clinical teaching programme about SOP, S (standardized operating procedure's) for intra-aortic balloon pump and mostly doubtful to use intra-aortic balloon pump due to lack of knowledge and poor practices. Continuous education about handling patients with IABP, intervention, management and assessment of practices of cardiac care nurses other helping staff (physicians, nurses, cardiac perfusionists) that experience share by (Abdul Naeem, 2015), who studied nurses' practices in caring for patients receiving IABP therapy for treatment of heart attack, heart failure, dunning coronary artery bypass and exposed that the early fear of participants was when they called for first caring of patients receiving IABP therapy and this was overcome through educational session and supported experience skill. Even though study participants known the general importance of technical competence, special nursing care was highlighted by participants more than specific care related to IABP. This in addition to participants' feeling that IABP therapy was a means to an end and instead of hope for survival and soon recovery of patients.

CONCLUSION

This study reveals that it is key to have regular education session improve the nurse's knowledge and made the practices perfect it is necessary to arrange the educational session, training, workshops for nurses to improve their knowledge and practices for the betterment of patients providing the best quality of care and reduce all complication related intra-aortic balloon pump.

Recommendation: this study recommended continues educational programme, workshops and training related nurse's specialty and critical area nurses for the purpose upgrading nurse's knowledge and practice.

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