Original Article

Validity of Standardized Guidelines of Intra-Aortic Balloon Pump Care Among Nurses on Hospital Stay of Cardiac Patients

Yasmeen Ghafoor and Awais Bilal

[1]College of Nursing, Government Teaching Hospital Shahdara Lahore, Pakistan
[2]HR Department, Iqbal Garden Housing Society Lahore, Pakistan

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ABSTRACT

Intensive care unit nurses simply need to be aware of monitoring because the intra-aortic balloon pump is a mechanical device that boosts the myocardial oxygen perfusion and cardiac output in cardiac patients. In our country, there were no written guidelines for nurses on how to check the patient properly. **Objectives:** To check the validity of standardized guidelines in small groups of nurses to provide interventions for preventing possible complications to reduce the length of stay in intensive care units. **Methods:** A Pilot study was carried out on 10 % of the total number of nurses (10 nurses in the interventional group and 10 in the control group of the implementation of standardized guidelines) who have been working at Punjab institute of cardiology hospital. The pilot study was done to test the applicability, transparency, consequence, and feasibility of the study tool and sequence of quotations to maintain consistency. The necessary modifications were done, and the final form is developed. **Results:** Reliability of standardized guidelines were excellent after using small group of these guidelines were implemented on large sample size 72 nurses were trained with the help of educational session and booklet made according to guidelines randomized control trail (RCT) according these guidelines nurses provide all care to patient with intra-aortic balloon pump speedy recovery and also reduce the length of stay in cardiac ICU. **Conclusion:** We concluded that these standardized guidelines should be implemented on a large sample of cardiac intensive care unit nurses.

INTRODUCTION

The duration of the patient's stay in the intensive care units is a unique consequence. The bad outcome was defined as the length of stay exceeding the normal length of stay by 5 days, or 120 hours. A significant component of intensive care units is outcomes prediction. This is true for prognosis evaluation, cost determination, health care management, monitoring, and new guidelines to shorten stays in intensive care units while still delivering high-quality treatment [1]. Safe practices and enough knowledge of nurses can't achieve without proper training and educational session because only a classroom setting can't improve the nurse's practices clinical exposure makes them easy to hemodynamic effects, and expert problem solving assure critical care nurse that they can efficiently manage the Intra-aortic balloon pump challenge. Still, a number of studies reported that the knowledge of the majority of intensive care unit nurses tested was found to be inadequate When nurses provide care to a patient who is on the intra-aortic balloon pump she has to be very responsible in providing the satisfactory care practices [2]. It is essential for improving patient care to better the sources, and that duration should be addressed to improve the intensive care units' care, to continuously monitor care indicators and identify risk factors that lower quality. A lengthier stay in the intensive care unit is not only more expensive, but it is also a key sign of how well cardiac patients are receiving critical care [3]. In another study post-operative and patient outcomes with intra-aortic balloon pump support require according to standardized guidelines nursing care their ability to effectively predict

postoperative complication hospital stay and mortality is uncertain no standard currently exists these assessment tools are not routinely utilized in the care of the patient with an intra-aortic balloon pump. Wide variation based on competency and experience. A valuable care time-efficient cost-effective reduce the length of stay and mortality [4]. The ability to deliver quality nursing care practices on hemodynamic effects ad skillful problem-solving critical care nurses can effetely manage the intra-aortic balloon challenge using the standardized guidelines regarding intra-aortic balloon pump care to achieve the best outcome for patients managed and control the adverse events. The cardiac nurse caring for coronary artery disease patients requires standardized guidelines [5]. In another study post-operative and patient outcomes with intra-aortic balloon pump support require according to standardized guidelines their ability to effectively predict postoperative complications hospital stay and mortality is uncertain no standard currently exists these assessment tools are not routinely utilized in the care of the patient with an intra-aortic balloon pump. Wide variation based on competency and experience Valuable care time-efficient cost-effective reduce the length of stay and mortality [6]. Another retrospective study to evaluate the effect of Intra-aortic balloon pump therapy on activity tolerance of 46 patients awaiting heart transplantation resolved Intra-aortic balloon pump therapy increase the physical activities in patients awaiting by-pass surgery improved strengthening decrease clinical indicators delivering the standardized care by nurses and significantly shortening the length of hospital stay [7]. Furthermore, a research study was conducted in 2009 which results showed that only 20%nurses have knowledge about the complication and only 19 % of nurses knows how to take a particular action and use the standardized guidelines regarding the care of Intra-aortic balloon pump patients for shorting of stay in intensive care units [8]. It was the necessity of the nursing profession to deliver standard care of the patient with intra-aortic balloon pump.it was evident in previous studies that only flow sheet was used for intra-aortic balloon pump record which was also used for the ventilation of patient. There was not any evidence or documentation to use of Standardized guidelines for the care of patient with intra-aortic balloon pump which hampered the nursing care and increase the patient stay in hospital and also increase mortality rate [9]. The early practice of intra-aortic balloon pump gives the best outcome in high-risk cardiac patients it reduces the intensive care units stay and mortality elevated renal function show indicator of high mortality with several potential complications such as renal failure 34.6% and limb ischemia 3(2.9%) the finding of the study that the

morbidity and mortality was higher in cardiac patients. the post-operative mortality of intra-aortic balloon pump was 29.1 % the benefit of timely producer of intra-aortic balloon pump improving the clinical outcomes of patients and reduce the stay and mortality [10]. To achieve the greatest results for a patient maintained with an intra-aortic balloon pump, nursing staff needs particular abilities. The circulatory system must be understood by the nurse in order to continuously assess and measure appropriate changes in the patient's state. The significance of using simulation techniques to maintain knowledge and abilities for patients using intra-aortic balloon pumps [11]. A meta-analysis was conducted in 2014 which includes the nurse's practices regarding the intra-aortic balloon pump and the results of 7 % of studies were the same that nurses don't have knowledge regarding the intra-aortic balloon pump care-related complication that's why to increase the length of stay in ICU. critical care unit nurses have adequate practices regarding the care of the intra-aortic balloon pump [12]. A substantial level of nursing skills are needed for intra-aortic balloon pump therapy due to the hardware's intricacy and the need for constant observation to avoid potential problems. To truly concentrate on this group of patients, attendants should combine caution with cautious and deliberate evaluation skills. The medical provider should conduct competent clinical evaluations and ensure accurate and trustworthy impressions. Evaluations and impressions specific to effort, the ability of the intra-aortic balloon pump, and probable problems should be accepted [13-15]. In Pakistan limited the all cardiology hospitals in cardiac care units no guidelines used for intra-aortic balloon pump patients so I developed the standardized guidelines for reduced the length of stay to minimize the complication and in written form document helpful for nurses to checked the patients according to standardized guidelines. It is the necessity of prominence care Standardized guidelines of the nursing profession to deliver standard care but there is no proper documentation for the care of the patient with intra-aortic balloon pump Properly structured checklist for intra-aortic balloon pump care shows the useful for nursing process and also provide the data for quality assurance studies. The only flow sheet is using for intra-aortic balloon pump record which also uses the ventilated patient. Educational intervention for management of Intra-aortic balloon pump patient care will increase nurse's performance to minimize hospitalization stay and decrease the mortality rate

M E T H O D S

The Pilot study was carried out on 10 nurses. Randomly, 10 nurses were included in the current study. Polit study was conduct to check the effect of standardized guidelines.

Research was conduct in intensive care units Punjab institute of cardiology Lahore's. The study was carried out in the cardiac intensive care units of the Punjab Institute of Cardiology in Lahore. The tool was developed tested for clarity and feasibility A, demographic variable Performa for nurses B, nurse's practices standardized guidelines on care of patients with intra-aortic balloon pump.

RESULTS

The developed tool was examined by a panel of two professors of cardiac surgery, head of cardiac surgery Unit-1 and 2 chiefs per fusionist of Punjab Institute of Cardiology Jail Road Lahore. Three critical care nursing experts and one English expert to determine whether the included items were clear and easy understandable in table 1 to achieve the aim of the study test and retest reliability was evaluated by using SPSS with Cronbach's α value of 0.743 that is good for nurses standardized guidelines indicating reliability of the developed data collection tool in table 1 demographic data.

Demographic data	n (%)
Age in years	
<25 years	6 (60%)
>25 years	4 (40%)
Educational status	
GNM	2 (20%)
Post B.Sc. Nursing	5 (50%)
Post basic BSC nursing	3 (30%)
MSN	0 (0%)
Years of experience in intensive care unit	
<5 years	5 (50%)
<5 years	5 (50%)
Previous experience	
Yes	10 (100%)
No	0 (0%)

Table 1. Demographic data of studied nurses

Reliability of standardized guidelines were excellent after using small group of these guidelines that will be implemented on large sample size 72 nurses who trained with the help of educational session and booklet made according to guidelines randomized control trail (RCT) according these guidelines nurses provide all care to patient with intra-aortic balloon pump speedy recovery and also reduce the length of stay in cardiac ICU table 2.

Common Mean	1.770
Common Variance	.186
True Variance	.059
Error Variance	.127
Common Inter-Item Correlation	.284
Reliability of Scale	.908
Reliability of Scale (Unbiased)	.922

Table 2: Reliability Statisticshic data of studied nurses

In table 3 every point would be assessed on SPSS version 25

and show clearly each point in details link are available who use these guidelines for the betterment of patient's care and reduced the burden of intensive care units & hospitals. The scale mean for spine position is 42.40 if item deleted and 43.55 for urine.

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Spine Position	42.40	32.989	.755	.906
vitals	42.55	33.839	.410	.912
Radial and pedal pulse	42.50	34.053	.396	.912
Urine	42.55	33.208	.530	.910
Don't Flex Legs	42.50	32.053	.806	.904
Log Roll	42.50	32.474	.717	.906
Check Backflow	42.50	32.053	.806	.904
Change Rhythm	42.60	32.042	.726	.906
Monitor Insertion Sight	42.50	32.789	.652	.907
Augmentation Pressure	42.40	35.516	.149	.916
Manual Flushing	42.45	33.629	.526	.910
Neurological Assessment	42.40	33.305	.677	.907
Daily Pathology	42.50	34.579	.292	.914
Monitoring Renal Function	42.40	33.305	.677	.907
Observe Bleeding	42.70	32.747	.564	.909
Monitor Pain	42.45	33.208	.619	.908
Check skin bundle	42.50	32.789	.652	.907
Observe Pressure Area	42.65	35.503	.091	.919
Oxygen Supply	42.45	32.997	.665	.907
Daily X-Ray	42.45	33.418	.572	.909
Remove Catheter, Check Pressure	42.45	34.261	.390	.912
After Removal Check Position	42.40	35.095	.247	.914
After Removal Check Bleeding	42.35	34.029	.607	.909
Thrombus Formation	42.50	34.579	.292	.914
Maintain Documentation	42.35	34.976	.338	.913

Table 3: Item-Total Statistics

DISCUSSION

Patients with complex, severe heart failure frequently employ intra-aortic balloon pumps (IABPs) as a temporary mechanical assistance (HF). The transfemoral artery is the most typical route taken for the percutaneous installation of an IABP, which restricts patient mobility and encourages deconditioning when support is required for an extended period of time. In order to place the IABP in the descending thoracic aorta, alternative sites (transthoracic) have been used with a surgical approach through the ascending aorta, right or left axillary, or subclavian artery, primarily with the use of a conduit (either a Dacron [Invista, Wichita, Kansas] graft or vein cuff). However, many patients who need ongoing mechanical support and are candidates for orthotopic heart transplantation (OHT) [16, 17]. This pilot study test and retest reliability was evaluated with Cronbach's α value of 0.743 that is good for nurses standardized guidelines indicating reliability of the developed data collection tool. All healthcare services must include high-quality care. The advancement of medical and health services has moved from quantitative to more qualitative factors. The concept of quality of care is multifaceted and can be viewed from a variety of angles,

including organizational, professional, and patient views 18, 19]. A pilot study can be used for a variety of things, including developing and testing the suitability of research instruments, determining whether a full study is feasible, designing and testing the protocols for the larger study, setting up and testing the sampling and recruitment strategies, gathering preliminary data, learning about effect sizes, and training research assistants [20].

CONCLUSIONS

We concluded that these standardized guidelines should be implemented on a large sample of cardiac intensive care unit nurses. Practices of intensive care unit nurses through doing intra-aortic balloon pump continuing education sessions nursing procedures must be strictly followed when caring for patients who are attached to an intra-aortic balloon pump.

Conflicts of Interest

The authors declare no conflict of interest

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