



# EFFECTIVENESS OF A CAPACITY BUILDING PROGRAMME REGARDING CARE OF PATIENT WITH INTRA-AORTIC BALLOON PUMP (IABP) AMONG STAFF NURSES

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## Abstract

**Background:** The intra-aortic balloon pump (IABP) is a mechanical circulatory support device that enhances myocardial oxygen supply and improves cardiac output in critically ill cardiac patients. The present study was conducted to evaluate the effectiveness of a Capacity Building Programme on nurses' knowledge and practice related to the care of patients with IABP.

**Materials and Methods:** A pre-experimental one-group pre-test post-test research design was adopted for the study. Sixty nurses working in the cardiac units of selected hospitals in Puducherry were selected. The baseline level of knowledge and practice regarding the care of patients with IABP was assessed using structured tools. This was followed by the implementation of a Capacity Building Programme, and a post-test was conducted to assess its effectiveness.

**Results:** The findings showed that following the Capacity Building Programme, most of the nurses (73.33%) attained moderately adequate knowledge, while 78.33% demonstrated an average level of practice in the care of patients with IABP. The programme was found to be effective in improving nurses' knowledge and practical skills.

**Conclusion:** The Capacity Building Programme significantly contributed to enhancing nurses' competence in caring for patients supported with IABP.

**Keywords:** Capacity building programme, intra-aortic balloon pump, nurses, knowledge, practice

## Introduction

Intra-aortic balloon pump, remains the most widely used circulatory assist device in critically ill. The national center of Health Statistics estimated that IABP was used in 75000 patients in the India in 2025. The Intra-aortic balloon pump (IABP) is a mechanical device that increases myocardial oxygen perfusion while at the same time increasing cardiac output. Increasing cardiac output increases coronary artery blood flow and therefore myocardial oxygen delivery. The catheter is then attached to an external pump which will inflate and deflate it in synchrony with the cardiac contractions. Balloon inflation occurs at the onset of diastole when blood ceases to eject from the heart.

## Statement of the problem

A Pre Experimental Study to Assess the Effectiveness of a Capacity Building Programme regarding Care of Patient with Intra-Aortic Balloon Pump (IABP) upon the Level of Knowledge and Practice among Staff Nurses at Selected Hospitals, Puducherry.

## Objectives

- To assess the level of knowledge and practice among Staff nurses, regarding care of patient with IABP in pretest and post test.
- To determine the effectiveness of capacity building program regarding care of patient with IABP by comparing the pre and post test level of knowledge and practice among Staff Nurses.
- To determine the level of acceptability of nurses regarding capacity building program on care of patient with IABP among Staff Nurses
- To determine the correlation between the scores of knowledge and practice regarding care of patients with IABP among Nurses.
- To find out the association between the level of knowledge regarding care of patient with IABP and the selected demographic variables of the Nurses in pretest and post test
- To find out the association between the level of Practice regarding care of patient with IABP and the selected demographic variables of the Staff Nurses, in pretest and post test.

## Null Hypothesis

- **H<sub>02</sub>** There will be no significant difference between the pretest and post test level of knowledge and practice regarding IABP care among Staff Nurses.
- **H<sub>03</sub>** There is no significant correlation between the post test level of knowledge and practice of Staff Nurses regarding IABP.

## Research methodology

Data collection was done among Nurses after getting institutional ethical committee clearance. A total of 60 Staff Nurses were selected through purposive sampling technique and assessed for pre test knowledge and practice regarding care of patient with IABP using predetermined and prelisted tools through structured knowledge questionnaire structured knowledge questionnaire, and practice observational checklist. Capacity building programme on care of patient with IABP was done for participants by using power point presentation, demonstration and videos regarding steps of care of patient with IABP. A post-test was again conducted after 1 week to assess the level of knowledge and practice regarding care of patient with IABP and level of acceptability on Capacity building programme.

## Results and discussion

- Study finding revealed that the majority of the nurses were in the age group of 21 to 25 years (80%), females (73.3%) with an educational level of B.Sc nursing(70%), More than half of them had up to 2 years experience in ICU and 53.4% and most of them had previous experience in the care of patient with IABP (76.7%).
- In the post test, Majority of the Nurses had moderately adequate knowledge (73.33 %). There was a significant difference between pretest knowledge score (M = 16.48, SD = 2.1) and post test knowledge score (M =22.95, SD = 2.7) regarding IABP care among nurses with t-value of 13.6 at p < 0.001 level.
- The practice scores of nurses regarding IABP care was high in the post test (M =28.36, SD = 3.8) compared to the pre test practice scores (M =17, SD =3.99) with a "t" value of 20.06, significant at p <0.001 level. (Table 1 and Table 2). Hence the null hypothesis H<sub>02</sub> was rejected.
- There was a weak positive correlation between the post test knowledge and practice of (r=0.41) nurses at p<0.001 level. Hence the null hypothesis H<sub>03</sub> was rejected.

- There was a significant association between the pre-test level of knowledge regarding care of patient with IABP and previous information acquired regarding care of patient with IABP ( $\chi=3.94$ ) among Nurses at  $p<0.05$  level. (Table 3)

**Discussion**

In this study knowledge and practice were significant pre requisite to perform IABP care. It is evident from this study that everyone is in need of further practice for taking care of patient with IABP, both in terms of gaining additional knowledge and practice. The study findings also revealed that there was a significant association between the pre-test level of knowledge regarding care of patient with IABP and previous information acquired regarding Basic CPR ( $\chi=3.94$ ) among Staff Nurses at  $p<0.05$  level and these finding are supported by Onoratiet.al The results of this study depicted that previous information regarding a particular topic helps in easy understanding which triggers interest and intuition.

**Table 1: Comparison of Mean and Standard Deviation between Pre-test and Post-test Scores of Knowledge Regarding care of patient with Intra aortic balloon pump (IABP)**

Knowledge	Mean	SD	t value
Pre -test	16.48	2.1	13.6***
Post -test	22.95	2.7	

\*\*\* $p<0.001$

**Table 2: Comparison of Mean and Standard Deviation between Pre-test and Post-test Scores of practice Regarding care of patient with Intra aortic balloon pump (IABP)**

Practice score	Mean	SD	t value
Pre -test	17	3.99	20.06***
Post -test	28.36	3.8	

\*\*\* $p<0.001$

**Table 3: Correlation Between the scores of Knowledge and Practice Regarding care of patient with Intra-aortic balloon pump (IABP) among Nurses.**

Category		Mean	SD	r value	p-value
Pre -test	Knowledge	16.48	2.1	0.18	$p>0.05$
	Practice	22.95	2.7		
Post -test	Knowledge	17	3.99	0.41***	
	Practice	28.36	3.8		

\*\*\* $p<0.001$

**Table 4: Association between the Level of Knowledge Regarding care of patient with IABP among Staff Nurses and their Selected Demographic Variables**

Selected variables	Pre test		X <sup>2</sup>	Post test		X <sup>2</sup>
	Upto mean	Above mean		Upto mean	Above mean	
Gender			3.94*			2.12
Male	4	12		11	5	
Female	25	19		21	23	

\*\*\* $p<0.05$

**Conclusion**

The findings of the present study revealed that Capacity building programme regarding care of patient with IABP enhanced the knowledge and practice among Staff Nurses. It was a suitable method to educate and

demonstrate the steps of IABP care for the Staff nurses, which focuses on importance of before insertion during insertion after insertion of IABP care, and ongoing care of IABP patient.

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