



شبكة المعلومات الجامعية
التوثيق الإلكتروني والميكرو فيلم

بسم الله الرحمن الرحيم



MONA MAGHRABY



شبكة المعلومات الجامعية
التوثيق الإلكتروني والميكرو فيلم



شبكة المعلومات الجامعية التوثيق الإلكتروني والميكرو فيلم



MONA MAGHRABY



شبكة المعلومات الجامعية
التوثيق الإلكتروني والميكروفيلم

جامعة عين شمس

التوثيق الإلكتروني والميكروفيلم

قسم

نقسم بالله العظيم أن المادة التي تم توثيقها وتسجيلها
علي هذه الأقراص المدمجة قد أعدت دون أية تغيرات



يجب أن

تحفظ هذه الأقراص المدمجة بعيدا عن الغبار



MONA MAGHRABY

Nurses Performance for Patients undergoing Intra-Aortic Balloon Pump: Suggested Guidelines

Thesis

*Submitted for Partial Fulfillment of the Requirements of
the Master Degree in Nursing Sciences
(Medical - Surgical Nursing) - (Critical Care Nursing)*

By

Ahmed El sayed Mahmoud Ellithy

B.Sc. Nursing (2010)

Faculty of Nursing - Ain Shams University
Head Nursing Education- Al-Nas Hospital

**Faculty of Nursing
Ain Shams University
2021**

Nurses Performance for Patients undergoing Intra-Aortic Balloon Pump: Suggested Guidelines

Thesis

*Submitted for Partial Fulfillment of the Requirements of
the Master Degree in Nursing Sciences
(Medical - Surgical Nursing) - (Critical Care)*

Supervised by

Prof. Dr. Ola Abd El Aty Ahmed

Professor of Medical Surgical Nursing
Faculty of Nursing - Ain Shams University

Dr. Asmaa Abd El Rahman Abd El Rahman

Assistant Professor of Medical Surgical Nursing
Faculty of Nursing - Ain Shams University

**Faculty of Nursing
Ain Shams University
2021**

Acknowledgments

First and forever, thanks to Allah, Almighty for giving me the strength and faith to complete my thesis and for everything else.

*I would like to express my deepest gratitude and appreciation to **Dr. Ola Abd El-Aty Ahmed**, Professor of Medical Surgical Nursing, Faculty of Nursing- Ain Shams University, for her generous support, precious help, valuable advice and guidance to help me to put this work in its best form and for being an ideal model of a professor to follow. It was indeed an honor to work under her supervision.*

*It is my pleasure to express my unlimited gratitude and deepest thanks to **Dr. Asmaa Abd El Rahman, Abd El Rahman** Assistant Professor of Medical Surgical Nursing, Faculty of Nursing- Ain Shams University for her kind assistance, faithful supervision and guidance, she offered me to complete this study. No word of gratitude can equal her help and support.*

I would like to thank all nursing staff who made this study possible. Their helpfulness, willingly, answering the interview questionnaires frankly and sharing in observational checklist, should not be in any way undermined.

✍ Ahmed Ellithy

List of Contents

Subject	Page No.
List of Tables	i
List of Figures	iii
List of Abbreviations	v
Abstract	vii
Introduction	1
Aim of the Study	6
Review of Literature	7
Subjects & Methods	63
Results	72
Discussion	99
Conclusion	108
Recommendations	109
Summary	111
References	121
Appendices.....	
Arabic Summary	

List of Tables

<i>Table No.</i>	<i>Title</i>	<i>Page No.</i>
Table (1):	Frequency and percentage distribution of the studied nurses as regards to demographic characteristics	73
Table (2):	Frequency and percentage distribution of the studied nurses as regards level of knowledge	76
Table (3):	Frequency and percentage distribution of nurses' level of Knowledge and mean knowledge scores as Regards to Description and Physiological Effects of IABP	78
Table (4):	Frequency and percentage distribution of the studied subject as regards to indications, contraindications and complications of IABP	80
Table (5):	Frequency and percentage distribution of mean knowledge scores of the studied subject as regards to nursing care of patient connected with IABP	82
Table (6):	Frequency and percentage distribution and mean knowledge scores as regards to weaning and removal of IABP	84
Table (7):	Frequency and percentage distribution of the studied nurses as regards to practice level of caring for patient connected with IABP	86
Table (8):	Frequency and percentage distribution of practice level of the studied nurses as regards to preparation and initiation of IABP therapy	88

List of Tables

<i>Table No.</i>	<i>Title</i>	<i>Page No.</i>
Table (9):	Frequency and percentage distribution of mean practice scores of the studied nurses as regards to nursing practice during IABP therapy	90
Table (10):	Frequency and percentage distribution of mean practice scores of the studied nurses as regards to nursing practice during weaning and removal of IABP	92
Table (11):	Relation between studied nurses' knowledge, regarding IABP and their gender	94
Table (12):	Relationship between studied nurses' knowledge, regarding IABP and their years of experience, ICU experience and qualifications of the studied subject	95
Table (13):	Relation between nurses' level of practice regarding care of patients undergoing IABP, and their gender and age category	96
Table (14):	Relation between nurses' level of practice regarding care of patients undergoing IABP, and their years of experience, ICU experience and educational level	97
Table (15):	Correlation between the studied nurses' age, total knowledge and total mean practice scores	98

List of Figures

<i>Figure No.</i>	<i>Title</i>	<i>Page No.</i>
Figures in Review of Literature		
Figure (1):	Anatomy of the heart	7
Figure (2):	IABP and its color display and keypad control	11
Figure (3):	Intra-aortic balloon placement position	13
Figure (4):	Normal arterial waveform	21
Figure (5):	Arterial waveform of IABP patient, 1: 2 counter pulsations	22
Figure (6):	Arterial waveform with early balloon inflation	24
Figure (7):	Arterial waveform with late balloon inflation	25
Figure (8):	Arterial waveform with early balloon deflation	26
Figure (9):	Arterial waveform with late balloon deflation	27
Figure (10):	Continuous pressurized flush system	55

List of Figures

<i>Figure No.</i>	<i>Title</i>	<i>Page No.</i>
-------------------	--------------	-----------------

Figures in Results

Figure (1):	Frequency distribution of the Studied nurses as regards to gender.	75
Figure (2):	Frequency distribution of the Studied Subject as regards to Knowledge about Intra-Aortic Balloon Pump.	77
Figure (3):	Percentage distribution of the studied nurses regarding to practice level for patients connected with IABP	87

List of Abbreviations

<i>Abb.</i>	<i>Full Term</i>
AC	Alternating Current
ACC	American College of Cardiology
ACC/AHA	American College of Cardiology/American Heart Association
AHA	American Heart Association
AMI	Acute Myocardial Infraction
BUN	Blood Urea Nitrogen
CABG	Coronary Artery Bypass Graft
CBC	Complete Blood Count
CCL	Cardiac Catheter Laboratory
CCU	Coronary Care Unit
CHF	Congestive Heart Failure
CO₂	Carbon Dioxide
CPB	Cardiopulmonary Bypass
CPR	Cardiopulmonary Resuscitation
CRP	C-Reactive Protein
DPTI	Diastolic Pressure Time Index
ECG	Electrocardiogram
IAB	Intra-Aortic Balloon
IABC	Intra-Aortic Balloon Counter-pulsation
IABP	Intra-Aortic Balloon Pump
ICU	Intensive Care Unit
LAD	Left Anterior Descending Coronary Artery
LV	Left Ventricle
MS	Milli-seconds

<i>Abb.</i>	<i>Full Term</i>
OR	Operating Room
PACU	Pediatric Acute Care Unit
PAMI	Primary Angioplasty in Myocardial Infraction
PAP	Pulmonary Arterial Pressure
PCI	Percutaneous Coronary Intervention
PTT	Activated Partial Thromboplastin Time
PVD	Peripheral Vascular Disease
STS	The Society of Thoracic Surgeons
TAMI	Thrombolysis and Angioplasty in Myocardial Infraction
TTI	Tension Time Index

Nurses Performance for Patients undergoing Intra-Aortic Balloon Pump: Suggested Guidelines

*** Ahmed Elsayed Mahmoud, ** Dr. Ola Abd El-Aty Ahmed, *** Dr. Asmaa Abd El Rahman Abd El Rahman**

*Head Nursing Education - Al-Nas Hospital, ** Professor of Medical Surgical, *** Assistant Professor of Medical Surgical Nursing,
, *, Faculty of Nursing - Ain Shams University

Abstract

Background: Intra-aortic balloon pump (IABP) is the first and the most commonly used mechanical circulatory support for patients with acute coronary syndromes and cardiogenic shock. Therefore, critical care nurses not only have to know how to monitor and operate the IABP, but also to provide interventions for preventing possible complications. **Aim of the study:** to assess nurses' knowledge and practices regarding care of patients connected with IABP at the Intensive care units at Cardio Thoracic Academy (CTA) at Ain Shams University Hospitals. **Research design:** A descriptive exploratory design was utilized. **Subject:** A convenient subjects of 40 nurses were included in the current study. **Setting:** The current study was carried out at the adult intensive care units for cardiac surgery at the Cardio Thoracic Academy (CTA) at Ain Shams University Hospitals. **Tools of data collection:** Two tools: **a-** Self – administered nurses' knowledge assessment questionnaire, and **b-** IABP Nurses' practice observational checklist. Also, suggested guidelines were developed for nurses caring for patients undergoing Intra-Aortic Balloon Pump **Results:** The majority of the studied subject had unsatisfactory knowledge. Moreover, most of studied subject had unsatisfactory practice level about adjusting augmentation alarm setting, obtaining consent, checking inflation which occurs at the dicrotic notch and observing helium tank when low helium light illuminates. **Conclusion:** Critical care nurses (in the current study) had unsatisfactory knowledge and practice regarding caring for patients connected with IABP. **Recommendation:** updating knowledge and practice of ICU nurses through carrying out continuing educational programs about IABP; implementation of suggested guidelines for nurses caring for IABP patients'; strict observation of nurses' practice when caring for patients connected with IABP and providing guidance for correction of poor practices; and replication of this study on larger subject selected from different geographical areas.

Keywords: Nurses Performance, Intra-Aortic Balloon Pump, Suggested guidelines.

Introduction

The intra-aortic balloon pump (IABP) is a mechanical device that is temporarily used to improve cardiac function (**Hardin & Kaplow, 2010**). IABP is a mechanical device that increases myocardial oxygen perfusion while at the same time increasing cardiac output. Increasing cardiac output increases coronary blood flow and therefore myocardial oxygen delivery (**Parissis & Dougenis, 2010**).

Knowledge of the electromechanical events of the cardiac cycle and troubleshooting skills are essential when caring for hemodynamically compromised patients who require intra-aortic balloon pump support (**Curtis, et al., 2012**).

When the myocardium becomes damaged, cardiac output is insufficient to meet the oxygenation demands of the body. Blood pressure falls, and the myocardium continues to get weaker as it struggles to provide vital organs with oxygenated blood. Pharmacologic intervention may not be enough, and oftentimes places further demands on the myocardium. In situations such as acute myocardial infarction, cardiogenic shock, septic shock, and cardiac