Deanship of Graduate Studies

Al - Quds University

Assessment of Nursing Care Provided for Preterm Neonates Suffering from Respiratory Distress Syndrome in Gaza Governorates

Hani Naim Awad

M. Sc. Thesis

Jerusalem – Palestine

1441/2020

Assessment of Nursing Care Provided for Preterm Neonates Suffering from Respiratory Distress Syndrome in Gaza Governorates

Prepared by:
Hani Naim Awad

BSc. of Nursing-Islamic University, Gaza, Palestine

Supervisor: Dr. Mohammed .F. Eljerjawy

A Thesis Submitted in Partial Fulfillment of Requirements for the Degree of Master of Pediatric Nursing/Faculty of Health Professions/Al-Quds University

1441/2020

Al-Quds University
Deanship of Graduate Studies
Pediatric Nursing Program / Nursing Department

Thesis Approval

Assessment of Nursing Care Provided for Preterm Neonates Suffering from Respiratory Distress Syndrome in Gaza Governorates

Prepared By: Hani Naim Awad

Registration No: 21712013

Supervisor: Dr . Mohammed .F. Eljerjawy

Master thesis submitted and accepted, Date: / /

The names and signature of examining committee members are as follow:

1- Head of committee: Dr. Mohammed El jerjawy Signature:.....

2- Internal Examiner: Dr. Abdelrhman El Hams Signature:.....

3- External Examiner: Dr. Ali Al-Khatib Signature: .....

Jerusalem – Palestine

1441/2020

Dedication

To my Father, who tirelessly struggled against the hurdles of this world, just to see his son attain the greatest gift of all.

To my world to my mother to whom my life and success.

To my Wife, who kindly, remained by my side, with unending love, being patient, motivation and supporting.

To my brothers for supporting me.

To my kids (Naim & Hanan) for their encouraging smiles.

To my friends

To my colleagues

To all neonates with respiratory distress syndrome with my pray for them to have a good health.

And, to everyone who contributed to make this study a reality,
thank you.

Hani N. I. Awad

Declaration

I certify that this thesis submitted for the degree of Master is the result of my own research, except where otherwise acknowledged, and that this thesis (or any of its parts) has not been submitted for a higher degree to any other university or institution.

Signed: ……

Hani N. I. Awad

Date: 11/1 /2020

Acknowledgment

First, and foremost, I will like to give thanks to God for the love and support of family and friends that have been given me through this journey. To my supervisor, Dr. Mohammed Al jerjawy, I thank you for your patience, guidance, correction, and support. This would not have been completed without you.

I would also like to extend my warm appreciation and sincere gratitude to all people who were involved in completing the research work.

My greatest debt is to my sincere parents. Their hard work, motivation, and encouragement was my real inspiration since childhood. My very special respects are offered to my beloved wife Aya whose patience and loving-kindness enabled me to complete this study.

The list of acknowledgments will be incomplete without mentioning gratitude towards my brothers. Their support and understanding always boosted my morale and made my way easy to follow my dreams.

My sincere thanks extend to all nurses who participated in this study.

.

Abstract

Preterm infants are at risk for respiratory distress syndrome, neonatal respiratory distress syndrome (RDS) is a major cause of illness and death for premature infants. RDS or Hyaline Membrane Disease (HMD) is defined as a syndrome caused by developmental insufficiency of surfactant production and structural immaturity in the lungs at birth results in decreased compliance of the lung. Lung maturation is usually inadequate to sustain extra uterine life. The aim of this study was to assess the nursing knowledge and practice provided for preterm neonates with respiratory distress syndrome in the Neonatal Intensive Care Units (NICUs) in Gaza Governorates. Study design: It was a quantitative descriptive analytic cross-sectional study. Subjects and Methods**:** The study was carried out in the NICUs at four hospitals "Al Shifa complex - Al Nassr pediatric hospital - Naser hospital - European Gaza hospital" the sample consisted of all nurses employed in NICUs at the previously mentioned hospitals. The total number of nurses was 110 (census sample), the researcher used a self-administered questionnaire that used to assess the nurses' knowledge and practice regarding nursing care provided to preterm neonates with RDS to collect data from study participants**.** Results: the current study revealed that the mean percentages of knowledge was (76.96%). And the level of practicing care for neonates with RDS was (84%). Conclusion: the current study concluded that there were no statistically significant differences between age, gender, job title and experience of the nurses and their levels of knowledge of care for neonates with RDS. Regarding the hospital, there were statistically no significant differences between hospitals and nurses' level of knowledge, but there were statistically significant differences with level of practice regarding care for neonates with RDS. Recommendations: It was recommended that educational and training programs is needed for improving nurses' knowledge and practice about their care for neonates with RDS in the NICUs.

Table of Content

Dedication i
Declaration i
Acknowledgment ii
Abstract iii
Table of Content iv
List of Tables vii
List of Figures viii
List of Annexes ix
List of Abbreviations: x
Chapter One Introduction 1
1.1 Background 1
1.2 Problem statement 3
1.3 Justification of the study 4
1.4 Aim of the Study: 6
1.5 Objectives of the study: 6
1.6 The Research questions: 6
1.7 Context of the study 8
1.7.1 Demographic context 8
1.7.2 The socio-economic situation 9
1.7.3 Health care system 9
1.7.4 Neonatal Intensive Care Unit in Gaza Governmental Hospitals 10
1.7.5 Palestinian Health Information Center 11
1.7.6 Governmental Hospital Services 11
1.8 Theoretical Definitions 13
1.9 Operational definitions 13
Chapter Two Literature Review 14
2.1 Conceptual framework 14
2.2 Background 15
2.2.1 Complications 15
2.2.2 Incidence 15
2.3 Definition of Preterm 16
2.4 Risk factors 16
2.4.1 Maternal 17

2.5 Preterm Common Health Problems 18
2.5.1 Hypothermia in Preterm 19
2.5.2 Transient tachypnea of the newborn 20
2.6 Respiratory distress syndrome (RDS) 20
2.6.1 Causes of RDS 21
2.6.2 Symptoms of RDS 21
2.6.3 Factors increase the risk for neonatal RDS 22
2.6.4 Management of RDS 22
2.6.5 Status of Vitamin D as a Risk Factor for RDS 23
2.6.6 Risk factors of preterm with RDS in Palestine 24
2.7 Epidemiology 25
2.8 Nursing care of preterm neonate with RDS 28
2.8.1 Practice guideline for the management of RDS in preterm infants 30
2.8.2 Surfactant Therapy 31
2.8.3 Surfactant Administration Methods 32
2.8.4 When to Treat with Surfactant for preterm neonate with RDS? 33
2.8.5 Non-Invasive Respiratory Support 35
2.8.6 Caffeine Therapy 36
2.8.7 Pain and Sedation 37
2.8.8 Monitoring and Supportive Care 38
2.8.9 Temperature Control 39
2.8.10 Prevention and management of hypothermia for preterm with RDS 39
2.8.11 Antibiotics 40
2.8.12 Early Fluids and Nutritional Support 40
2.8.13 Developmental care 41
2.8.14 Hand hygiene 41
2.9 Neonatal Intensive Care Unit 42
2.9.1 Nursing practice in (NICU) 43
Chapter Three Methods and Materials 45
3.1 Study Design 45
3.2 Sampling process and sample size 45
3.3 Study population 45
3.4 Study setting 46
3.5 Study period 46
3.6 Eligibility criteria 46
3.6.1 Inclusion Criteria. 46
3.6.2 Exclusion Criteria. 46

3.7 Study instruments and tools 46
3.8 Validity of the instrument 48
3.9 Reliability 48
3.10 Pilot study 49
3.11 Data collection 49
3.12 Response rate 50
3.13 Data entry and analysis 50
3.14 Ethical and administrative considerations 50
Chapter Four Results and Discussion 51
4.1 Introduction 51
4.2 Sociodemographic characteristics of study sample 51
4.3 Level of knowledge about Respiratory Distress Syndrome 54
4.4 Level of practice about RDS 55
4.5 Differences in knowledge, practice related to selected variables 56
4.5.1 Differences in knowledge, practice related to age 56
4.5.2 Differences in knowledge and practice related to gender 57
4.5.3 Differences in knowledge and practice related to qualification 58
4.5.4 Differences in knowledge and practice related to job title 59
4.5.5 Differences in knowledge and practice between hospitals 60
4.5.6 Differences in knowledge and practice related to experience in NICU 61
4.5.7 Relationship between knowledge, practice and training 62
4.5.8 Differences in knowledge and practice related to length of training 63
4.5.9 Differences in knowledge and practice related to special training on RDS 64
4.5.10 Differences between knowledge, practice and hospital providing training 65
4.6 Discussion 66
Chapter Five Conclusion and Recommendations 70
5.1 Conclusion 70
5.2 Recommendations 71
References: 72
Annexes 86

List of Tables

Table (3.1): Reliability of knowledge and practice questionnaire..... 49

Table (4.1): Sociodemographic characteristics of study participants (n= 103)..... 51

Table (4.2): Knowledge of participants about care of neonates with RDS(n= 103) 54

Table (4.3): Practice of participants about care of neonates with RDS (n= 103)..... 55

Table (4.4): Differences in knowledge and practice related to age (n= 103) 57

Table (4.5): Differences in knowledge and practice related to gender (n= 103)..... 57

Table (4.6): Differences in knowledge and practice related to qualification (n= 103)..... 58

Table (4.7): Differences in knowledge and practice related to job title (n= 103) 59

Table (4.8): Differences in knowledge and practice between hospitals (n= 103) 60

Table (4.9): Differences in knowledge and practice related to experience in NICU (n= 103)..... 61

Table (4.10): Differences in knowledge and practice related to training (n= 103) 62

Table (4.11): Differences in knowledge and practice related to length of training (n= 60) 63

Table (4.12): Differences between knowledge, practice and receiving special training on RDS (n= 103) 64

Table (4.13): Differences in knowledge and practice related to offering training by the hospital (n= 103) 65

List of Figures

Figure (2.1): Conceptual Framework Diagram 15

Figure (4.1): Distribution of study participants by hospital 54

Figure (4.2): Distribution of study participants by qualification..... 55

List of Annexes

Annex (1): Map of Palestine 86

Annex (2): MOH Hospitals in Gaza strip 87

Annex (3): Names of panels of experts..... 88

Annex (4): Self-administered questionnaire 89

Annex (5): Helsinki committee for ethical approval 95

Annex (6): Permission to collection data..... 96

List of Abbreviations:

ANA	American Nurses Association
ATII	Alveolar type II
BPD	BronchoPulmonary Dysplasia
CAP	Caffeine for Apnea of Prematurity
C S	Caesarean section
CDC	Centers for Disease Control and Prevention
CNN	Canadian Neonatal Network
CPAP	Continuous Positive Airway Pressure
ECG	Electo Cardio Gram
EGH	European Gaza Hospital
E T	Endotracheal Tube
FiO_2	Fraction Of Inspired Oxygen
GNN	Gaza Neonatal Network
G.S	Gaza Strip
HMD	Hyaline Membrane Disease
KMC	Kangaroo Mother Care
L S	Lecithin Sphingomyelin
LISA	Less Invasive Surfactant Administration
MOH	Ministry of Health
M V	Mechanical Ventilation
NCPAP	Nasal Continuous Positive Airway Pressure
NEC	NecrotisingEnterocolitis
NGO	Non Governmental Organization
NICU	Neonatal Intensive Care Unit
NMC	Nasser medical complex
OCHA	Office for the Coordination of Humanitarian Affairs
PDA	Persistent DuctusArteriosus
PHIC	Palestinian Health Information Center
PCBS	Palestinian Central Bureau of Statistics
PHC	Primary health care
RDS	Respiratory Distress Syndrome
ROP	Retinopathy of prematurity
SPSS	Statistical Package For Social Sciences
TTN	Transient tachypnea of the Newborn
UNRWA	United Nations Relief and Work Agency
USA	United States of America
VLBW	Very Low Birth Weight
WHO	World Health Organization

Chapter One

Introduction

1.1 Background

Preterm birth is the birth occurring before 37 completed weeks of gestation and those neonates susceptible to many health problems including Respiratory Distress Syndrome (RDS) (WHO, 2017).

RDS also known as hyaline membrane disease (HMD), is a life threatening lung disorder that result from under developed and small alveoli and insufficient levels of pulmonary surfactant (Schraufnagel, 2010). RDS is the single most important cause of morbidity in preterm neonates, especially before 34 weeks gestation and is the most common cause of mortality (Dargaville&Tingay, 2012). Acute RDS is a sudden, progressive form of respiratory failure characterized by severe dyspnea, hypoxemia and diffuse bilateral infiltrates. It is a life-threatening lung disorder that commonly affects premature infants (Dorothy et al., 2010).

Factors that increase the risk for neonatal RDS including prematurity, diabetic mother, multiple pregnancy, rapid labor and cesarean delivery that reduce blood flow to the baby, the earlier baby is born, the less developed lungs and the higher chance of neonatal RDS (Joyce et al., 2008).The symptoms of RDS usually appear within minutes after births which includes cyanosis, apnea, decreased urine output, nasal flaring, rapid breathing, shortness of breath and grunting sounds while breathing, unusual breathing movement drawing back of the chest muscles with breathing. Therefore, high-risk and premature infants require prompt attention by a neonatal resuscitation team (Behrman et al., 2007).