Premature Babies Home Care : The Application Of Web Causation Epidemiological Model to Prevent Premature Complications

Thesis

Submitted for Partial Fulfillment of the Requirements
of Doctorate in Nursing Science Degree
(**Community Health Nursing)**

By

Sharbat Thabet Hassanine Attea

(M.Sc. Nursing)

Faculty of Nursing
Ain Shams University
٢٠١٢

Premature Babies Home Care : The Application Of Web Causation Epidemiological Model to Prevent Premature Complications

Thesis

Submitted for Partial Fulfillment of the Requirements
of the Doctorate in Nursing Science Degree
(**Community Health Nursing)**

Under Supervision of:

Prof. Dr. Sohair Abd El Haleem Mekhemer

Professor of Community

Health Nursing Department

Prof. Dr. Faten Khayrat El Guindi

Professor of Community

Health Nursing Department

Assist. Prof. Dr. Seham Guirguis Ragheb

Assistant Professor of Community

Health Nursing Department

Faculty of Nursing
Ain Shams University

٢٠١٢

ABSTRACT

Premature births increase the risk of death and long term disability which affect families, communities, and health care services, **The study aims** to care for premature babies at home setting to prevent premature complications by applying web causation epidemiological model. **Research design**: a quasi-experimental design was applied to achieve the objectives of the study. **Setting**: the study was carried out at the Neonatal Outpatient Premature Clinic in Abu El- Reish Pediatric Hospital, and El Manial University Hospital in Kasr El Aini Hospital, Cairo University. **Sampling**: a purposive sample of ١٣٦ premature babies and their mothers, included control & study groups each ٦٨ premature babies & their mothers, they were selected randomly with specific criteria. **Tools**: data were collected using Premature Assessment tool, to assess premature growth & development, Interviewing assessment sheet for mothers to assess their socio demographic characteristics and knowledge, Checklist to assess mothers' practices, and Observational checklist for home environment. **Results**: the study showed that the study group had a higher satisfactory level of knowledge and practices related to premature home care compared to the control group. As well, the premature study group has good growth rate and normal development compared to the control group. The study group have less recurrence of premature complications than the control group with a statistically significant difference between the two groups. **Recommendation**: the study recommended to conduct an educational program for the high risk pregnant women in the follow up clinic to raise their knowledge and practices related to premature care, and design a simple illustrated booklet in Arabic language for premature babies' mothers about premature home care.

Key words: premature, Web causation epidemiological models, Premature complications, Home care

Acknowledgement

First and foremost, I feel always indebted to ***Allah*** *who gave me the strength and ability to complete this work.*

I wish to express my deepest thanks and sincere appreciation for the expert ***Dr.*** **Sohair Abd El Haleem Mekhemer,** *Professor of Community Health Nursing, Faculty of Nursing, Ain Shams University, for her professional guidance, continuous encouragement, advices and support.*

I also express my special gratitude and appreciation to ***Dr. Faten Khayrat El Guindi,*** *Professor of Community Health Nursing, Faculty of Nursing, Ain Shams University for her efforts, motherly advices and encouragement.*

I am especially indebted and feel appreciation to ***Dr.*** **Seham Guirguis Ragheb,** *Assistant Professor of Community Health Nursing, Faculty of Nursing, Ain Shams University, for her kind help, generous advices, guidance, supervision and time she has devoted to the fulfillment of this work.*

It is a great pleasure to thank every mother who participated in this study .

The candidate

Sharbat Thabet Hassanine

LIST OF ABBREVIATIONS

AAPC	**American Academy of Pediatrics Committee**
AAP	**American Academy of Pediatrics**
AAPT	**American Academy of Pediatrics Task**
ACOG	**American College of Obstetricians and Gynecologists**
ART	**Artificial Reproductive Technology**
ASRM	**American Society for Reproductive Medicine**
AS/NZS	**Australian and New Zealand Standard**
AWHONN	**Association of Women's Health, Obstetric and Neonatal Nurses**
BPD	**Bronchopulmonary Dysplasia**
CDC	**Centers for Disease Control**
GER	**Gastro esophageal Reflux**
GFR	**Gromerular Filtration Rate**
GIT	**Gastro-Intestinal Tract**
MFMER	**Mayo Foundation for Medical Education and Research**
NAHC	**National Association of Home Care**

NICU	**Neonatal Intensive Care Unit**
NMR	**Neonatal Mortality Rate**
OB/GYN	**Obstetric and Gynecology**
PROM	**Premature Rupture of Membranes**
ROP	**Retinopathy of Prematurity**
SIDS	**Sudden Infant Death Syndrome**
UNDP	**United Nations Developmental program**
USAID	**United States Agency for International Development**
UTI	**Urinary Tract Infection**
VLBW	**Very Low Birth Weight**
WHO	**World Health Organization**
WHA	**Women Health Association**

LIST OF FIGURES

Figure	Title	Page
Figures of literature review		
٤.	The web of causation for adolescent tobacco use, indicating the interplay between multiple direct and indirect causative factors.	٤٧
٥.	Diagram of web causation epidemiological model application to prevent premature complications.	٥٢
Figure of Results		
١.	Distribution of mothers of premature babies related to home environmental condition in the study & control group.	١١٨
٢.	Distribution of mothers of premature babies in relation to total score level of knowledge.	١٢٥
٣.	Distribution of premature babies ' mothers in relation to total score level of practices.	١٢٥
٤.	Distribution of mothers of premature babies in relation to continuity of premature home care.	١٢٦
٥.	Distribution of premature babies in relation to total frequency & recurrence of health problems among the study & control groups.	١٣٣
٦.	Distribution of premature babies in relation to level of growth among the study & control groups.	١٣٩
٧.	Distribution of total premature development among the study & control groups.	١٣٩

LIST OF TABLES

Table	Title	Page
Tables of literature review:		
Table (١)	Clinical and neurologic examinations comparing preterm and full-term infants	١٦
Tables of results:		
Table (١)	Socio-demographic characteristics of mothers of premature babies in the study & control group	١١٦
Table (٢)	Distribution of mothers of premature babies according to score level of knowledge related to premature home care in the study & control group	١١٩
Table (٣)	Distribution of mothers of premature babies according to score level of practices related to premature home care among the study & control groups	١٢١
Table (٤)	Distribution of mothers of premature babies related to always continuity of premature home care among the study & control groups	١٢٣
Table (٥-١)	Distribution of premature babies in relation to recurrence of respiratory problems & complications among the study & control groups	١٢٧
Table (٥-٢)	Distribution of premature babies in relation to recurrence of gastrointestinal problems & complications among the study & control group	١٢٩

Table (٥-٣)	Distribution of premature babies in relation to recurrence of neurological problems among the study & control groups	١٣١
Table (٥-٤)	Distribution of premature babies in relation to recurrence of urinary problems among the study & control groups	١٣٢
Table (٦)	Distribution of premature babies in relation to follow up of the growth rate between the study group & control group	١٣٤
Table (٧)	Distribution of premature babies in relation to level of development between the study & control group	١٣٦
Table (٨)	The correlation between mothers' education & age, job, & knowledge	١٤١
Table (٩)	The correlation between mothers knowledge & age, job, practices, premature growth, development & complications groups before and after the intervention	١٤٢
Table (١٠)	The correlation between mothers practice & age, education, premature growth, development & complications	١٤٣
Table (١١)	The correlation between continuity of premature home care & mothers age, education, job, premature growth, development & complications	١٤٤
Table (١٢)	The correlation between home environment & premature growth, development & complications	١٤٥
Table (١٣)	The correlation between premature growth & development, complications	١٤٦

CONTENTS

Subject	Page
Abstract	١
Introduction & Aim of the study	
Review of Literature	٩
Part: Premature Babies	٩
Part II: Epidemiological Models	٢٧
Part III: Management of Premature Babies & the Role of Community Health Nurse	٣٢
Part IV: Application of Web of Causation Epidemiological Model in the Nursing Field	٤٦
Subjects and Methods	٩٦
Results	١١٥
Discussion	١٤٧
Conclusion and Recommendations	١٧٠
Summary	١٧٢
References	١٨٣
Appendices	
Arabic Summary	

List of Contents

Introduction

Babies born at less than ٣٧ weeks' gestation are considered premature, and they often begin life with serious medical challenges. They may need support for a number of medical issues**.** A premature newborn is not fully equipped to deal with our world. Their little bodies still have areas that need to mature and fully develop. Some of these areas include the lungs, digestive system and immune system, medical technology has made it possible for premature babies to get through the first few days, weeks or months of life until they are able to make it on their own ***(USAID,*** ***)***.

Premature birth is associated with substantial excess childhood mortality and morbidity and therefore represents an important public health problem worldwide, it constitutes a serious public health issue, impacting families, communities, and health care services ***(Crawford, Dampbell & Ross,*** ***).***

The cause of a premature birth may be unknown or due to conditions such as a ruptured amniotic sac, pre-existing medical conditions, such as diabetes and high blood pressure, and weak cervix. Other causes include the increased number of pregnancies among women over age ٣٥; assisted reproduction techniques with the implantation of multiple embryos; poor nutrition and low bodyweight; and alcohol, tobacco use and secondhand smoke ***(American College of Obstetricians & Gynecologists, .)***.

A premature birth gives a baby less time to develop and mature in the womb. The result is an increased risk of various medical and developmental problems, including trouble breathing and bleeding in the brain**,** vision problems, intestinal problems, developmental delays, difficulty breathing, learning disabilities, jaundice, anemia, low blood pressure and neurological problems. Babies born prematurely, may need special care during their first ٢ years, especially if they were very small at birth ***(Mayo Foundation for Medical Education and Research (MFMER), d).***

Epidemiological model is considered a cornerstone methodology of public health research, and is highly regarded in evidence-based medicine for identifying risk factors for disease and determining optimal treatment approaches to clinical practice ***(WHO Scientific Group, ٢٠٠٩)***. It examines the factors that influence health and illness in the population and it explains how and why health and illness occur in human populations, that enable health professionals to address the health problem more successfully. These epidemiologic models are: the epidemiological triad, the web of causation model, and determinants of health models **(*Clark,* *; Bolumar, Rebagliato, Hemandez & Florey, ٢٠٠٧).***

According to ***Bellinger, Leviton, Watemaux and Aured (٢٠٠٦),*** the web of causation explore the influence of multiple factors on the development of a specific health condition. The application of web causation model to prevent the complications of premature babies, through the integration of the two parts of the causality model **cause and effect**. ***Causes*** of premature complications or health risks include immature organs as lung, heart, liver, or systems, as the respiratory, digestive, cardiovascular, nervous systems, and generally low immunity.

The ***effect*** of premature complications include, problems related to breathing, feeding, regulating body temperature, jaundice. And other long-term neurodevelopmental problems. Recognition of multiple causes provides many points of intervention, prevention, health promotion, and treatment ***(Campbell & Less,***).

Premature home care provides appropriate services and maintain or restore physically impaired babies to optimal functional potential, also provide for support and follow up services for them. So, the preventive program will be able to improve mothers' knowledge, practices related to premature home care, to prevent premature complications ***(Berg, Richard,*** ***& NAHC,***).

Parents need education to develop care giving skills and to understand the premature infant's behavioral characteristics, providing opportunities for parents to touch, hold, talk to, and care for the baby. The more knowledge parents have about the meaning of their infant's responses, behaviors, and cues for interaction, the better prepared they will be to meet their newborn's needs and form a positive attachment with their child ***(Edward,***).