

BREASTFEEDING PATTERN AMONG INFANTS WITH
CONGENITAL HEART DISEASES AT CAIRO UNIVERSITY
PEDIATRIC HOSPITALS

Thesis

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ABSTRACT

It is a widespread misconception that infants with CHD are not able to breastfeed. Malnutrition and growth retardation are common worldwide in infants and children with CHD. So, the aim of this study was to investigate breastfeeding pattern among infants with CHD at medicine departments and pediatric outpatient clinics at Cairo University Specialized Pediatric Hospital and at medicine departments at Pediatric University Hospital (EL Moniera Hospital). Total sample of 100 infants with CHD and aged from birth to 24 months was recruited for this study. Data were collected by using interview schedule. The results of this study revealed that the highest percentage of the infants' age was between 1 month and 6 months. Regarding to mothers' characteristics the majority of mothers' age ranged from 20 to 35 years old and more than one third of mothers had secondary school education and most of the mothers were housewives. The highest percentage of the sample had normal weight according to Egyptian growth curves. The majority of infants were diagnosed as having acyanotic heart diseases. Most of the infants were on breastfeeding. Nearly two thirds of the sample was on exclusive breastfeeding, more than one quarter of the sample was using bottle feeding beside breastfeeding, and the lowest percentage of the sample was taking bottle feeding only. The majority of mothers were continuing breastfeeding for their infants although they were having health problems during breastfeeding. There were no statistically significant differences between breastfeeding pattern (time of starting breastfeeding after delivery, mode of breastfeeding, frequency of breastfeeding, and breastfeeding on demand) and types of CHD. It can be concluded that most of the infants were taking breastfeeding while they complain from tachycardia and tachypnea. This study recommended that educational programs about optimal breastfeeding practices for infants with CHD must be conducted for mothers, nurses, and doctors to understand the various feeding techniques and strategies to overcome feeding challenges that may encountered those infants.

(Key words: Breastfeeding, Feeding Pattern, CHD).

Signed-----

Chairperson

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LIST OF ABBREVIATIONS

- AAP :- American Academy of Pediatrics
- ASD :- Atrial Septal Defect
- CHD :- Congenital Heart Disease
- CHF :- Congestive Heart Failure
- CUSPH : - Cairo University Specialized Pediatric Hospital
- NAPNAP :- National Association of Pediatric Nurse Practitioners
- PC :- Personal Computer
- PDA :- Patent Ductus Arteriosus
- PKU :- Phenylketonuria
- PVR :- Pulmonary Vascular Resistance
- SPSS :- Statistical Package For The Social Studies
- SVR :- Systemic Vascular Resistance
- TGA :- Transposition of The Great Arteries
- TGV :- Transposition of The Great Vessels
- TOF :- Tetralogy of Fallot
- USA :- United States of America
- VSD :- Ventricular Septal Defect
- WHO: - World Health Organization

CHAPTER I

Introduction

Breastfeeding is the incomparable first food for a newborn infant. In the first two years of life, feeding patterns play a fundamental role in the infant's growth and health (Mohamed, 2004).

It is a widespread misconception that infants with congenital heart disease (CHD) are not able to breastfeed (Barbas & Kelleher, 2004). So, malnutrition and growth retardation are common worldwide in infants and children with CHD (Samour & King, 2005).

Congenital heart disease is the most common of structural birth defects. Symptoms range from none to severe depending on the particular defect, and effectiveness of medical\surgical management. Presence of CHD does not preclude breastfeeding; however, children with critical CHD, associated with cyanosis\hypoxia or congestive heart failure, are likely to face challenges with feeding and normal growth (Riordan, 2005).

Malnutrition is frequent among children with congenital heart disease. Many factors contribute to growth impairment in infants with congenital heart disease, including a lower than normal birth weight, increased caloric requirements and the presence of concomitant musculoskeletal, central nervous system, renal or gastrointestinal malformations. Mild gastrointestinal abnormalities, mild steatorrhea, and excess protein loss are common in infants with CHD. Cyanotic CHD in

children commonly causes more pronounced growth retardation in comparison with acyanotic cause of poor growth in these patients (Zaghloul, 2007).

Adequate nutrition is extremely important in infants with CHD. Many infants with CHD are able to breast-feed and gain adequate weight as well as enjoy the other benefits of breastfeeding. (Saenz, Beebe & Triplett, 1999).

Nutrition support for infants and children with CHD covers a wide range of topics from acute care in infancy to chronic care in childhood (Samour & King, 2005). Feeding is often a major problem for children with CHD, particularly if they have a complex defect or are experiencing CHF (Allen & Vessey, 2004). Meeting the nutritional needs of infants with CHF or serious cardiac defects is a nursing challenge (Murray & Mckinney, 2006).

Breastfeeding of children with even a hemodynamically significant heart defect is not contraindicated if growth is adequate. Breast milk is the best source of nutrition for infants with a chronic illness, such as CHD (Allen & Vessey, 2004).

There is extensive evidence of the benefits of breastfeeding for infants and mothers. In 2003, the World Health Organization (WHO) recommended that infants be fed exclusively on breast milk until six months of age. However, breastfeeding rates in many developed countries continue to be resistant to change (Britton, 2007).

Nourishing her newborn is a major concern of the new mother. Her feelings of success or failure may influence her self-concept as she assumes her maternal role. With proper instruction, support, and encouragement from professionals, feeding becomes a source of pleasure and satisfaction to the parents and infant (London, Wieland Ladewing, Ball, & Bindler, 2007).

Pediatric nurses in the community and the hospital are in an excellent position to promote and support breastfeeding, thereby contributing to the Healthy People 2010 goal of increasing the proportion of mothers who breastfeed their babies (Kyle, 2008).

The American Heart Association, (2008) stated that, breastfeeding offers many benefits. The "work" of breastfeeding is actually less than the "work" of bottle feeding. Sucking, swallowing and breathing are easier for a baby to coordinate while breastfeeding. The amount of oxygen available to the baby is greater while breastfeeding than bottle feeding. Baby's heart rate and breathing are more normal during breastfeeding. Compared to bottle fed babies, breast-fed babies with congenital heart defects grow better.

Significance of the Study

No nation can build a sustainable future, if "its foundation", its children are malnourished, illiterate and diseased (El-Guindy, 1994). The incidence of congenital heart disease is usually given as the number of children born with congenital heart disease lesions in a given number of total births. If the calculations were to include still births and abortuses, the incidence would be greatly increased. Cardiac malformations occur 10 times more often in still born than in live born

babies. About 0.5-0.8 % of live births are complicated by a cardiovascular malformation (Zaghloul, 2007).

According to the Medical Record and Statistic Affairs Department in Cairo University Pediatric Hospital, 531 children with different CHDs admitted to Cairo University Specialized Pediatric Hospital (CUSPH) in 2002 (Ibrahim, 2005). Moreover, according to echocardiographic data of 7973 cases, attended the echocardiography unit, Cairo University Pediatric Hospital, over a period of two years (2005-2006), abnormal echocardiography was present in 6128 (76.86%) of the cases and the congenital heart disease was the most common cardiac abnormality represented 89.94% of the cases (Sayed, 2007).

Barbas & Kelleher (2004) found that, breastfeeding initiation rates among mothers and infants with CHD in 1998 was only 14%, which reflected the popular belief that infants with CHD would not be able to breastfeed successfully. As lactation support became more available and staff education and awareness increased, the breastfeeding initiation rate among the population studied rose to 47%, demonstrating a positive influence on breastfeeding success. Results suggest that given support and education necessary to initiate and maintain lactation, mothers can successfully breastfeed their infants with CHD and provide breast milk for durations suggested for the general population by the Healthy People 2010 initiative.

Egyptian demographic and health survey (EDHS) (2005) revealed that 83% of infants were put to breast within the first day and 43% within the first hour. Slightly more than half of all infants born in the five years preceding the survey have received prelacteal feeds

during the first 3 days after birth. Sixty six percent of infants under 2 months were exclusively breastfed, by the age of 4-5 months 80% of infants were receiving some form of supplementation with somewhat more than 30 % given complementary food.

Lambert and Watters (1998) stated that, despite the well-established benefits of breastfeeding, there is little literature about breastfeeding the infant with a congenital cardiac defect. In addition, they described numerous obstacles to success maintaining breastfeeding such as maternal fatigue, anxiety, separation from infant, institutional policy, and lack of support from health care providers.

Aim of the Study

The aim of this study was to investigate breastfeeding pattern among infants with CHD.

Operational Definition

Breastfeeding pattern

In the current study breastfeeding pattern referred to a combination of breastfeeding acts as first feeding methods, time of starting breastfeeding after delivery, mode of breastfeeding, frequency of breastfeeding per day, duration of breastfeeding per time, breastfeeding at night and on demand, infant's age when stopping breastfeeding and \or time of starting weaning.

CHAPTER II

Review of Literature

The current section is representing review of literature. The review will be organized into five sections. The first section will be an overview of infant growth and development. The second section will provide an overview of congenital heart diseases. The third one will focus on an overview of breastfeeding. The fourth section will address the relationship among the study variables. In the last section, nursing role will be presented.

Overview of Infant Growth and Development

The newborn or neonatal period of infancy is defined as the period from birth until 28 days of age. Infancy is defined as the period from birth to 12 months of age. Growth and development are interrelated, ongoing processes in infancy and childhood (Kyle, 2008). At birth the newborn faces the enormous tasks of adaptation to extrauterine life. These include the change from fetal to extrauterine circulation, temperature regulation, digestion, elimination, and the establishment of respiration. The most profound physiologic changes noted at birth are found in the neonate's respiratory and cardiovascular systems. Respiration is stimulated at birth by chemical, thermal, and mechanical means:-

- Chemical: - In the normal birth process, the infant's blood oxygen level drops and the carbon dioxide level increases. The respiratory center in the medulla of the brain senses this alteration and initiates respiration.
- Thermal: - The drop in temperature from within the uterus to room temperature stimulates the respiratory center of the brain. The respiratory center, in turn, stimulates breathing.