STUDIES ON THE NUTRITIONAL STATUS OF BREAST - FED INFANTS

THESIS SUBMITTED

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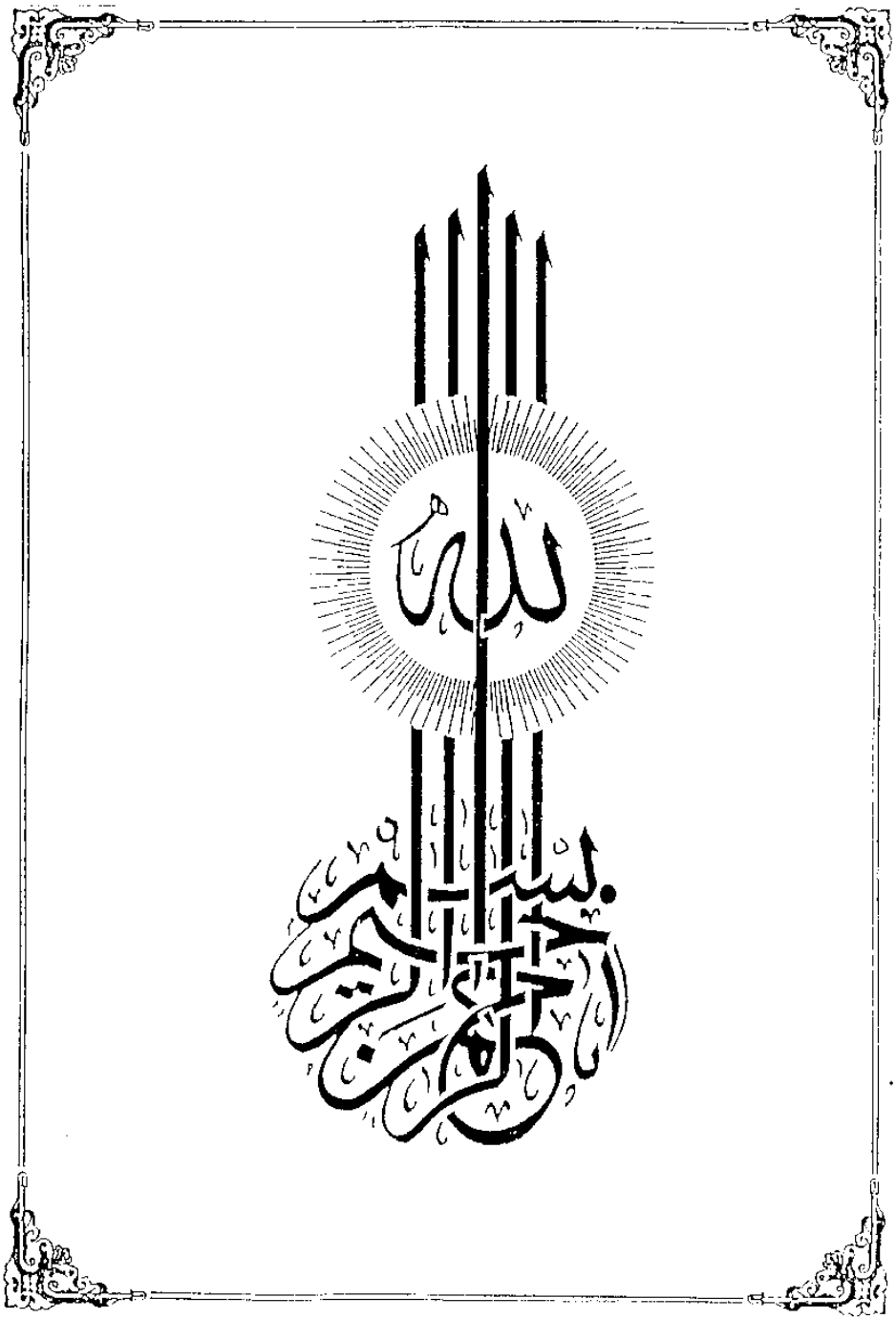

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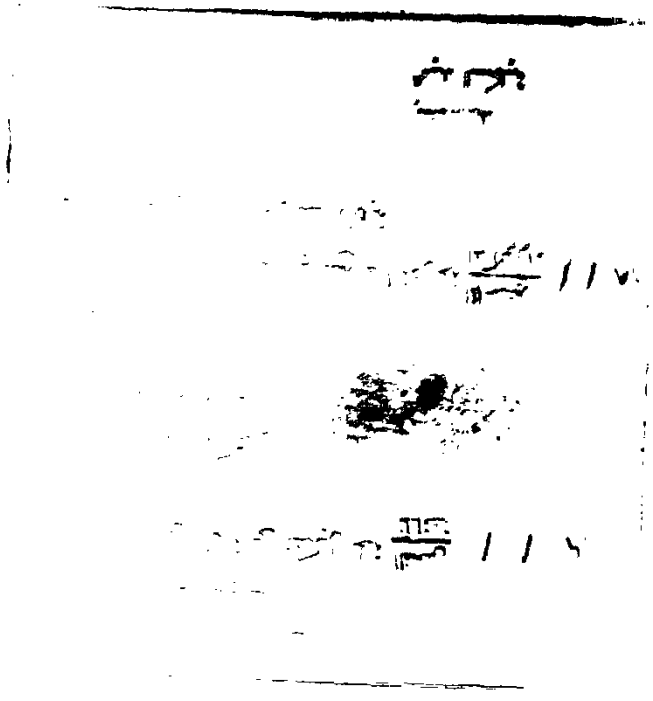

Ein-Shams University
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THE COURSES OF DIPLOMA (1982)
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- Advanced course of Biochemistry.
- Advanced couree of Microbiology.
- Applied statistics.
- Advanced course of Nutrition.
- German Language.

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INTRODUCTION AND AIM OF THE WORK

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The advantages of breast-feeding have been widely advocated. Its role in decreasing infant morbidity and mortality in developing countries is well accepted. The maternal-foetal nutritional relationship is a process by which appropriate quantities of the nutrients, derived from food, are acumilated by the mother and reach their ultimate destination to support cell division, replication and growth of functional organ systems in the foetal placental unit and ultimatly, the body, while enhancing the maternal tissue and preparing her for lactation.

Lactation represents a drain on maternal body composition. During the early stage of pregnancy, fat should accumulate in subcutaneous stores and protein should build up in the muscular tissue. Towards the end of pregnancy and throughout at least the first six months of lactation fat and protein are used to support final foetal growth and subsequently milk prodction. Breast - feeding is important for the health and development of babies. Breast milk contain all the nutrients a healthy baby needs. Breast milk is also rich in anti-infective substances and provides the baby with the best protection against diarrhoea, infection

and food alleregies. The consistently indentifiable stages of human milk are colostrum, transitional and mature milk. and their relative contents are significant for the newborn infant and his physiological adaptation to extrauterine life.

It is important to recognize that the milk composition varies with the stage of lactation, the time of day, the sampling time during a given feeding, maternal nutrition, and individual variation.

A major concern about variation in content of human milk is related to mothers diet. Maternal diet is of particular concern when the mother is malnourished or eats an unusually restricted diet. Malnourished mothers have approximately the same milk proportion of protein, fat and carbohydrate as well-nourised mothers, but they produce less milk. Levels of water-soluble vitamins, ascorbic acid, thiamin and B_{12} are quickly affected diets. **(Ruth A., 1985).**

It is uncertain for how long maternal milk may be used as the sole source of nutrients for the baby. Despite the wealth of information published on this subject in recent years, there are few data on growth of infants which are exclusively breast-fed.

REVIEW OF LITERATURE

REVIEW OF LITERATURE

A. INFANTS

Infancy includes the period from birth to 1 year of age. The first 28 days of infant life are called the neonatal period. The postneonatal period extends from 28th days of age to the end of the 1st year of life. Recently another period has been adapted to recognize that foetal and infant life are parts of an inseparable continum. This is the prenatal period, which includes the two periods (late foetal and neonatal) that immediately surround birth. ***(Bonnie et al, 1985).***

Foetal growth & Birth weight:

During the last 3 months of prenatal growth, the foetus gains most of its weight. At 180 days the foetus weights about 1000 gm and measures about 36 cm. At birth it weighs about 3400 g and measures 50 cm. The final month is one of slowing growth because the limits of the uterus are being approached and uterine restraint prevents continued rapid growth. Functional progress of the foetus during the final trimester of intrauterine existence is reflected in behaviour observed in premature infant. ***(Marvinl. Rallison, 1986).***

Thomson (1978), added that maternal disease may have a profound effect on foetal growth. Maternal

hypertension tends to retard foetal growth, whereas diabetes in mother results in increased weight infant. Women whose first pregnancies and stillbirth tend to have smaller babies in subsequent pregnancies.

The birth weight of an infant is important because it determines its ability to adapt to a new environment and to develop normally. Many factors cause variation in weight at birth, in developing countries, the mother's health, nutritional status and her diet during pregnancy are probably the most important. Under optimal conditions in Europe and north America normal birth weight of either sex averages between 3.3 and 3.5 kg. Among the upper socio-economic groups in any developing country the corresponding birth weight is reported as being slightly lower (i.e., around 3.2 - 3.3 kg)., Whitehead (1983).

***Evers and Rand (1980),** found that the mean birth weight for 99 canadian indian children is 3408 gm and for 316 non-indian 3380 gm, and body weight gain was not affected by birth weight.*

***Hitchcock et al. (1981),** in a study on 205 infants born in Perth, Australia., with normal pregnancy and parturition, found that mean birth weight was 3.56 kg for boys and 3.47 kg for girls.*