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Nutritional status and the possible related factors among children younger than two years

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Abstract

According to the conceptual framework formulated by UNICEF of the causes of malnutrition, nutrition intake and diseases are the direct determinant of child survival, growth and development.

This study aimed at exploring some possible factors related to nutritional status of children from 6 to 24 months. Random sample of 201 mother child pair attending Othman Primary Health Care Center (PHC) in Shobra El Khema city (Kalyoubia governorate) were included in the study. A questionnaire was designed to collect data about demographic and socioeconomic background of child parents, feeding pattern of children, history of child morbidity and child weight and recumbent length.

The study showed that about (14.5%) of studied children were stunted and (13.9%) were overweight. Inappropriate feeding practice, low birth weight, parent illiteracy negatively affect nutrition status.

The study recommended to nutritional education of nursing mothers about appropriate child feeding practice to improve the nutritional status of children younger than two years.

Key words: Nutritional status – Infant and young children – feeding pattern - malnutrition

Abbreviations

AFASS	Acceptable, Feasible, Affordable, Sustainable and Safe.
ANC	Ante Natal Care
BAZ	Body mass index for Age Z-score.
BFHI	The Baby-Friendly Hospital Initiative
BMI	Body Mass Index.
CSPM	Center for Social and Preventive Medicine
EBM	Expressed Breast Milk.
EDHS	Egypt Demographic and Health Surveys.
ICFI	Infant and Child Feeding Index
IMCI	Integrated Management of Childhood Illness.
IUGR	Intrauterine Growth Restriction.
IYCF	Infant and Young Child Feeding
LAZ	Lenght for Age Z-score.
LBW	Low Birth Weight.
MDGs	Millennium Development Goals
MGRS	Multicentre Growth Reference Study.
MUAC	Mid-Upper-Arm Circumference.
NCHS	National Centre for Health Statistics.
PAHO	Pan American Health Organization
PHC	Primary health care center
RTH	Road-to-Health
SGA	Small for Gestational Age.
SPSS	Statistical Package of Social Science.
UNICEF	United Nations International Children's Emergency Fund.
VLBW	Very Low Birth Weight.
WAZ	Weight for Age Z-score.
WHA	World Health Assembly

WHO	World Health Organization
WLZ	Weight for Lenght Z-score

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Introduction

Adequate nutrition during infancy and early childhood is essential to ensure the growth, health, and development of children to their full potential. Poor nutrition increases the risk of illness, and is responsible, directly or indirectly, for one third of the estimated 9.5 million deaths that occurred in 2006 in children less than 5 years of age. Inappropriate nutrition can also lead to childhood obesity which is an increasing public health problem in many countries ***(Black RE, 2008).***

The first two years of life provide a critical window of opportunity for ensuring children's appropriate growth and development through optimal feeding. Based on evidence of the effectiveness of interventions, achievement of universal coverage of optimal breastfeeding could prevent 13% of deaths occurring in children less than 5 years of age globally, while appropriate complementary feeding practices would result in an additional 6% reduction in under-five mortality ***(World Bank, 2006).***

Early nutritional deficits are also linked to long-term impairment in growth and health. Malnutrition during the first 2 years of life causes stunting, leading to the adult being several centimeters shorter than his or her potential height There is evidence that adults who were malnourished in early childhood have impaired intellectual performance, they may also have reduced capacity for physical work ***(Haas JD et al, 1996)***. If women were malnourished as children, their reproductive capacity is affected, their infants may have lower birth weight, and they have more complicated deliveries. When many children in a population are malnourished, it has implications for national development. The overall

functional consequences of malnutrition are thus immense ***(Martin RM et al, 2004)***

To assess the nutritional status of individual children , WHO recommends the use of Z-score indicators of weight-for-age (under-weight) ,height-for age (stunting) and weight-for- height (wasting). To compute the anthropometric indices, information on each individual gender, age ,weight ,and height are needed .Weight-for-height is an indicator of wasting (thinness indicating acute malnourishment) .Height-for-age is an indicator of stunting (shortness indicating chronic malnourishment) . Weight-for-age indicator is primarily a composite of Weight-for-height and Height-for-age and is considered to represent acute and chronic malnourishment ***(WHO, 1995).***

The EDHS (Egypt Demographic Health Survey) 2008 revealed that overall, 29 % of children under age five are stunted, and 14% are severely stunted. Stunting increases rapidly with age, from only 17% among children less than six months of age to 41% among children 18–23 months, before falling to 24% among children age four and older. Overall, around 7% of children are wasted. Wasting is more common among children under age two than among older children. Six percent of children under age five are underweight for their age .Low weight-for-age is more common among children 6 -23 months than among older or younger children ***(El-Zanaty et al., 2008).***

Research question:

What are the possible factors related to weight & length differences among infants & young children?

Aim of the work:

This study aimed at assessment of nutritional status of children from 6 to 24 months attending primary health care center for vaccination , follow up and growth monitoring or accompanying their relatives for any reasons.

Goal:

Explore some factors that are related to weight & length differences among infants & young children.

Objectives:

1- Study feeding pattern of children in the first two years of life.
2- Compare weight and length for age & sex of the studied children with WHO reference tables.
3- Relate weight and length differences with socio-demographic characteristics of the parents & sex of the child.
4- Relate weight and length differences of the studied children with feeding patterns.

Pattern of feeding of infants and young children

It is well recognized that the period from birth to two years of age is a "critical window" for the promotion of optimal growth, health and behavioral development. Longitudinal studies have consistently shown that this is the peak age for growth faltering, deficiencies of certain micronutrients, and common childhood illnesses such as diarrhea .Poor infant feeding practices, coupled with high rates of infectious diseases, are the principal proximate causes of malnutrition during the first two years of life. For this reason, it is essential to ensure that caregivers are provided with appropriate guidance regarding optimal feeding of infants and young children ***(WHO, 2005a).***

In 2002, the World Health Assembly and UNICEF adopted the *Global Strategy for infant and young child feeding.* The strategy was developed to revitalize world attention to the impact that feeding practices have on the nutritional status, growth and development, health, and survival of infants and young children ***(WHO/UNICEF, 2003).***

WHO and UNICEF's global recommendations for optimal infant feeding as set out in the *Global Strategy* are:

- Exclusive breastfeeding for 6 months (180 days) ***(Kramer MS, Kakuma R, 2001).***
- Nutritionally adequate and safe complementary feeding starting from the age of 6 months with continued breastfeeding up to 2 years of age or beyond.

Exclusive breastfeeding means that an infant receives only breast milk from his or her mother or a wet nurse, or expressed breast milk, and no other liquids or solids, not even water, with the exception of oral rehydration

solution, drops or syrups consisting of vitamins, minerals supplements or medicines ***(WHO/UNICEF/USAID, 2008).***

Data from 64 countries covering 69% of births in the developing world suggest that there have been improvements in this situation. Between 1996 and 2006 the rate of exclusive breastfeeding for the first 6 months of life increased from 33% to 37%. Significant increases were made in sub-Saharan Africa, where rates increased from 22% to 30%; and Europe, with rates increasing from 10% to 19% (**Figure** I). In Latin America and the Caribbean, excluding Brazil and Mexico, the percentage of infants exclusively breastfed increased from 30% in around 1996 to 45% in around 2006 ***(UNICEF, 2007).***

In Egypt according to EDHS 2008 the prevalence of exclusive breasrfeeding decrease from 78.9% among infants less than two months of age to 57.5% at the age of 2-3 months then sharply decrease to 28.8% at the age of 4-5 months ***(El-Zanaty et al., 2008).***

Complementary feeding is defined as the process starting when breast milk is no longer sufficient to meet the nutritional requirements of infants, and therefore other foods and liquids are needed, along with breast milk. The target range for complementary feeding is generally taken to be 6 to 23 months of age, even though breastfeeding may continue beyond two years ***(PAHO/WHO, 2002).***

These recommendations may be adapted according to the needs of infants and young children in exceptionally difficult circumstances, such as pre-term or low-birth-weight infants, severely malnourished children, and in emergency situations Specific recommendations apply to infants born to HIV-infected mothers ***(WHO, 2009).***