

**An-Najah National University
Faculty of Graduate Studies**

**Factors that Affect the Nutritional Status
of Children Aged 9-18 Months in
East Jerusalem**

**By
Manal Jamil Ahmad Salah**

**Supervisor
Dr. Obaida Qameihya**

**Co- Supervisor
Dr. Asma Imam (Al-Quds University)**

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This thesis was successfully defended on 10 /3 / 2004 and approved by:

Committee Members

Signature

Dr. Obaida Qameihya - Supervisor

Dr. Asma Imam - Co-Supervisor

Dr. Hassan Ahmad - Internal Examiner

Dr. Mohammad Shaheen - External Examiner

III

DEDICATION

To My Beloved Husband, Parents, Brothers and Friends

To My Unborn Child

To the Sole of Sammar Abd-Alhady

To all Palestinian Children

With Love and Respect

IV

DECLARATION

No portion of the work referred to in this thesis has been submitted as an application for another degree or qualification of this or any other university or institute of learning.

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TABLE OF CONTENTS

Content	Page No.
Committee Decision	II
Dedication	III
Declaration	IV
Acknowledgment	V
Table of Contents	VI
List of Tables	VIII
List of figures	IX
List of Abbreviations	X
Abstract	XI
Chapter I Introduction	1
Statement of the problem	2
1.2 Purpose of the study	2
1.3 Aims of the study	2
1.4 Research question	3
1.5 Study limitation	4
1.6 Assumption	4
1.7 Theoretical Background	4
1.8 Definition of Anemia	5
1.9 Types and causes of Anemia	5
1.10 Factors associated with Anemia	6
1.10.1 Age	7
1.10.2 Sex	7
1.10.2 Dietary Patterns	8
1.10.3 Early marriage and complication at first conception	9
1.10.4 Socio-Economic Status	10
1.10.5 Statement of the problem	10
1.11 Signs and symptoms of anemia	10
1.12 Classification of anemia	11
1.12.1 Mild anemia	11
1.12.2 Moderate anemia	11
1.12.3 Severe anemia	11
1.13 Treatment of anemia	11
1.14 Introduction to malnutrition	11
1.15 Definition of Malnutrition	12
1.16 Classification of malnutrition	13
1.16.1 Acute (Severe) malnutrition	13
1.16.2 Chronic (moderate)	13

1.17 Protein energy malnutrition	13
1.18 Marasmus	14
1.19 Definition of terms / variables conceptually	14
1.20 Definition of terms /variables operationally	15
Chapter II Review of literature	17
Chapter III Frame of References	23
3.1 Conceptual Framework	24
3.2 Summary of demographic and socio-economic factors affecting child nutrition.	26
Chapter IV Methodology	27
4.1 Research Design	28
4.2 Identification of population and sample	28
4.3 Setting	29
4.3.1 UNRWA	30
4.3.2 Makassed Islamic Charitable Society	30
4.3.3 Palestinian Red Crescent Society	30
4.3.4 Spafford Children Center	31
4.4 Ethical Considerations	31
4.5 Instruments	32
4.5.1 Direct Instrument	32
4.5.2 Questionnaire	32
4.6 Pilot Testing	32
4.7 Data collection	33
4.8 Data Analysis	34
Chapter V Results & Discussion	35
5.1 Demographic, socio-cultural and economic variables	36
5.2 Factors that affect children nutrition status	37
5.3 Distribution of children according to Hb level and their background characteristics	45
5.4 Distribution of children according to their height, weight and age.	47
5.5 Relationship between mother practices and malnutrition	55
5.6 Relationship between children background characteristics and malnutrition	55
Chapter VI Conclusion and Recommendation	58
6.1 Conclusion	59
6.2 Recommendations	60
Bibliography	61
Appendices	65
Arabic abstract	٢

VIII

List of Tables

Table No.	Page No.
Table 1 Mother's health condition and practices during pregnancy by degree of agreement.	38
Table 2 Mother's practices affecting child nutrition by degree of agreement.	39
Table 3 Diseases affecting the child health by degree of agreement.	43
Table 4 Mother's belief affecting child growth or development.	44
Table 5 Percentage distribution of Children aged (9-18 months) by Anemia status and background characteristics.	45
Table 6 Percentage distribution of children (9-18 months) by weight-for-height standard deviation categories and background characteristics.	48
Table 7 Percentage distribution of children aged (9-18 months) by height-for-age, standard deviation categories and background characteristics.	49
Table 8 Percentage distribution of children (9-18 months) by weight-for-age, standard deviation categories and background characteristics.	50
Table 9 Chi-Square test comparing mother practices and anthropometric measurement.	55
Table 10 Chi-Square test comparing background of children and anthropometric measurement	56

List of Figures

Figure	Page No.
Figure 1 Percentage distribution of children aged (9-18 months) by sex	36
Figure 2 Percentage distribution of children aged (9-18 months) by locality type	37
Figure 3 Percentage Distribution of children Mothers (9-18 Months) by Education Level	37
Figure 4 Distribution of children (9-18 months) by anemia status and sex	47

List of Abbreviations

ACD	Anemia of Chronic Disease
ANERA	American Near East Refugee Aid
ARI	Acute Respiratory Infection
CBA	Community Based Activities
ECG	Electrocardiogram
HB	Hemoglobin Level
ID	Iron Deficiency
IQ	Intelligence quotient
J ₁	Refers to the part of Jerusalem which was Annexed by Israel following its occupation of the Palestinian territories in 1967.
J ₂	Refers to the remaining parts of the Jerusalem governorate
MCH	Maternal and Child Health
MICS	Makassed Islamic Charitable Society
NCHS	National Center for Health Statistics
NGOs	Non Governmental Organizations
PEM	Protein Energy Malnutrition
PHC	Primary Health Care
PCBS	Palestinian Central Bureau of Statistics
PRCS	Palestinian Red Crescent Society
PMOH	Palestinian Ministry of Health
RBC	Red Blood Cells
SCC	Spafford Children Center
SD	Standard Deviation
UNRWA	United Nation Refuges and Work Agency.
UPMRC	Union of Palestinian Medical Relief Committees.
USAID	United States Agency for International Development
WHO	World Health Organization.

XI

**Factors that Affect the Nutritional Status of Children
Aged 9-18 Months in East Jerusalem**

By
Manal Jamil Ahmad Salah
Supervisor
Dr. Obaida Qameihya and Dr. Asma Imam

Abstract

In an attempt to assess the factors that might affect the children's nutritional status in East Jerusalem, a descriptive, cross-sectional study was conducted in 5 clinics: United Nation Refugees and Work Agency (UNRWA) the clinics of Zaweyeh and Shufat, Makassed Islamic Charitable Society, Palestinian Red Crescent Society and Spafford Children Center.

Mothers of 300 males and females ages (9-18) months, who attended the clinics were interviewed. Also anthropometric measurements were used to assess the nutritional status of children, while face-to-face interview were conducted with the mothers to assess attitudes and practices. Data was collected by a team of 12 field workers between the period of July to August 2003.

Major results showed that 41.4% of the assessed children were anemic, 8.5% were wasted and 14.2% were stunted. It was also found that anemia was significantly higher among females (42.3%) than males (41.2%). Moreover, 9.6% of the assessed children were of low-weight for their age.

Briefly, findings of this study showed that malnutrition (Anemia, low-weight, stunting, wasting) was considered a serious health problem in the early age. So stressing on health education program, within the community,

XII

and developing surveillance system in order to assess the hemoglobin status of children are recommended with more focus on nutrition educational sessions mainly for mothers.

Chapter I

Introduction

1.1 Statement of the problem

By reviewing several studies on nutritional status among Palestinian children, it has been recognized that many children have been suffering from different nutritional problems, such as, low-weight, malnutrition, anemia, gastrointestinal problem, especially diarrhea (Al- Saifi, 1994).

In the year 2002, the United States Agency of International Development (USAID) funded a study that aimed at nutritional assessment. The study indicated that acute and chronic malnutrition rate of Palestinian less than five years of age have reached disastrous levels with 13.2% suffering from emergency level of chronic malnutrition (stunted growth) and 20% suffering from moderate and/ or severe anemia. The factors affecting the dangerous rise in malnutrition are directly related to Israeli imposed road blocks, closures and curfews and the dismal economic situation in the occupied Palestinian territories (American Near East Refugee Aid [ANERA], 2002). Most of the studies conducted on West Bank and Gaza children and none was conducted on East Jerusalem children. However, it is expected that children in East Jerusalem are not better off. This is the motivation behind conducting the study in East Jerusalem.

1.2 Purpose of the study

The main purpose of this study is to assess the nutritional status of Palestinian children aged (9-18 months) in East Jerusalem by measuring their weight, height and hemoglobin (HB) level. Another Purpose is to explain the relationship between demographic, socioeconomic factors, mothers' attitudes, practices and malnutrition.

1.3 Aims of the study

This study aims at the followings:

1. To investigate the factors affecting the nutritional status of children aged (9-18 month's) in East Jerusalem.
2. To explore the relationship between personal demographic variables such as mother education, sex of the child, age of the mother, number of the family members, weaning age, child rank, and place of residence and malnutrition .
3. To explore the relationship between socio-economic factors, mothers' attitudes, beliefs, and malnutrition.

1.4 Research questions

- 1- What are the factors that affect the nutritional status of children in East Jerusalem?
- 2- Is there a relationship between demographic variables and malnutrition?
- 3- Is there a relationship between the socio-economic factors and malnutrition in East Jerusalem?
- 4- Is there a relationship between mother's attitudes, practices and malnutrition in East Jerusalem?
- 5- What is the percentage of children aged (9-18 months) who have low weight for their age?

6- What is the percentage of children aged (9-18 months) who have low height for their age?

7- What is the percentage of children aged (9-18 months) who have low level of hemoglobin?

8- What is the percentage of children aged (9-18 months) who have low-weight for height.

1.5 Study limitation

The following were the study limitation

1. Political instability which has an effect on the data collection process.
2. Having more than one data collector which may have affected the data collection.
3. Nonresponse of some mothers to participate in the study
4. Using of convenient sample that may not represent the population.
5. Children's weight and height taken from the records, some of which did not have complete data.
6. The sample size was too small to obtain reliable and generalizable results.

1.6 Assumptions

1. Mothers who attended the clinics are expected to be cooperative and responsive to the requirements of the study.

2. Personnel in the clinics were expected to be cooperative and supportive in conducting this project through the provision of all facilities and resources needed during the collection of data.
3. The involvement of the field workers and clinics personnel helped in building a trust relationship with mothers.

1.7 Theoretical background

About 25% of the world population suffers from anemia. In addition to the burden on the health system, it has a high economic cost, higher than any other disease except tuberculosis (Massa'd, 2001). Anemia affects learning in school and reduces adult productivity. Severe anemia in pregnancy causes significant increase in maternal and fetal mortality in addition to a risk of premature delivery. Although severe anemia can be prevented at low cost, it is usually not viewed as a priority and is still ignored by many policy makers. This is reflected in the rise in anemia prevalence in many countries of the region during the past 15 years (World Health Organization [WHO], 1999).

1.8 Definition of anemia

Anemia is defined as a state in which the level of hemoglobin, the hematocrit, or the number of red blood cells (RBC) are below that which is normal for the individual (WHO, 1992). HB, an iron compound responsible for transporting oxygen throughout the body, is found in red blood cells. When hemoglobin and/ or red blood cell level are low, tissues do not receive an adequate supply of oxygen.

1.9 Types and causes of anemia

There are multiple and interacting causes of anemia which make it difficult to identify the significance of each factor on its own (Massa'd

2001). Anemia may result from blood loss (hemorrhage). Inadequate production of normal red blood cells by the bone marrow can cause (Nutritional deficiency, thalassemia) excessive destruction of red blood cells can cause (haemolysis). Yet a precise diagnosis of the cause is crucial for treating anemia as anemia is a sign of pathological process or a disease, not a diagnosis by itself (Massa'd 2001). Following are several possible causes of anemia: nutritional anemia, iron deficiency, anemia of chronic disease, chronic parasitic infection, and congenital haemolytic diseases.

Nutritional anemia, the most common type of anemia worldwide, results from decreased synthesis of RBC due to deficiency of one or more nutrients, mainly iron, vitamin B, copper or pyridoxine, regardless of the cause of such deficiency (WHO, 1992).

However, iron deficiency (ID) is the most common nutritional cause of anemia in most parts of the world. It can be classified into three stages, according to its severity. In the earliest stage, iron stores may be depleted. The next stage involves decreased serum iron and increased iron-binding capacity but without overt anemia. In the latest stage, hemoglobin synthesis is impaired with the development of frank anemia (Massa'd, 2001). When anemia prevalence reaches 50%, the proportion of individual with iron-deficiency is about double those with anemia. Hence, when anemia prevalence is above 50%, one can assume that nearly all of the population is iron- deficient.

ID results from either loss of iron due to bleeding, or from insufficient absorption of iron due to: decreased bioavailability of iron (the ultimate absorption and utilization of iron), increased body requirements (growth, pregnancy), chronic blood loss and infection.

Anemia of chronic disease (ACD) is the second most common type of anemia, following iron deficiency that mimics or coexists with other types of anemia (Fitzsimons, 2001). Anemia occurs despite adequate iron stores, and is associated with infection, inflammation and neoplasia (abnormal new growth, benign or malignant). In case of bacterial infection, synthesis of hemoglobin in the bone marrow is suppressed until the infection is brought under control (WHO, 1992).

The significance of parasitic infections in causing anemia varies within and across countries as the extent of parasitic infection in a population is determined by socioeconomic conditions, hygiene and access to health services (Massa'd, 2001).

1.10 Factors associated with anemia

Throughout the world, several studies were conducted to examine the causes and factors associated with anemia. In Palestine, to our knowledge, only a few studies attempted to investigate the underlying risk factors of anemia. These studies examined the effects of age, sex, dietary patterns, rural/ urban residence, number of pregnancies, number of children currently alive, history of abortion, years of education, age at marriage and age at first conception.(Massa'd, 2001).

1.10.1 Age

Mass'ad (2001) points out that in stages of rapid growth, as in infancy, early childhood and adolescence, there are increased needs for iron. Therefore, the risk of developing anemia increases among these age groups. She also explains that the infants' diet doesn't usually meet iron

requirements unless fortified with iron. On the other hand Hassan, Sullivan, Yip & Woodruff (1997) stated that exclusive breast feeding is protective against iron deficiency for infants below 6 months of age after which iron concentration in breast milk will not meet the infant's iron demand. In adolescents, the rapid skeletal muscle development and the increased blood volume cause increased needs for iron in both males and females. Also, adolescent females have additional needs due to menses; they must build up their iron stores at this time, especially for future pregnancy.

Among pregnant females, it was observed that the prevalence of anemia increases with maternal age. A study conducted in Israel on 627 pregnant mothers indicated that the prevalence of anemia increased from 16.5% among mothers 25 years old or less to 23.1% among women over 30 years (Edet, 1990). Likewise, in another study on pregnant women in a rural area in Hebron, it was found that there was an increase in percentage of anemia from young to middle to older age groups (Massa'd, 2001). It was added that the prevalence of anemia increased from 19.8% among mothers 25 years old or less, to 26.2% among women 25- 34 years and to 26.8% over 35 years. Among the elderly, poor oral and dental health and the decreased absorption of nutrients are among the contributing factors to the development of anemia among both men and women. In a study of the major health problems encountered by women over 50 years of age in developing countries, point out that anemia was one of the major causes of morbidity (Young, 1994). Yet, compared to women of childbearing age, the prevalence of anemia among older women is expected to be lower due to menopause and the consequent decrease in iron demand.

In conclusion, as far as age is concerned, several factors contribute to development of anemia: the increased needs during stages of rapid growth, the depleted stores with increasing maternal age due to long years of childbearing or lactating, or the reduced bioavailability of iron, among infants and elderly.

1.10.2 Sex

Taking into account the greater physiological iron losses among women of childbearing age, this category of women are at a higher risk of developing anemia than men. For menstruating women, menstrual iron losses (0.6 mg/day) are added to basal iron losses (0.8 mg/day), which increase their requirement for iron to more than 50% than that of men (Yip, 1996). Although women of childbearing age have increased needs for iron compared to men, for most women this increased need can be met by diet alone. Therefore, over 90% of the cases of anemia among women of childbearing age may be attributed to excessive blood loss (heavy menstruation) or pregnancy (Farrell, 1998) while Rosner (1996) says that in men it is probably due to gastrointestinal bleeding from a peptic ulcer colonic neoplasm. He goes far to say that, compared to men, women of childbearing years are at a higher risk of developing anemia due to increased demands for iron during pregnancy and lactation and due to increased physiological loss of iron through menses and childbirth.

In addition, being a woman has social implications other than biological. Among them is the low socio-economic status that hinders her mobility and decision-making ability, including her health seeking behavior and the recognition of her reproductive role only.

1.10.3 Dietary patterns

Among the factors that contribute to ID are inadequate iron intake and reduced bioavailability of dietary iron (Massa'd, 2001). All food iron is present in two forms:

- Haem iron: present only in meat and fish. It is readily absorbed from the intestines and is not highly influenced by iron status of individual or by the diet (Williams & Hercberg 1992).
- Inorganic or non-haem iron: present in vegetables, dairy products and in meat (Duran, 1997). Its absorption is strongly influenced by:
 1. The iron status of the individual (the most important determinant). In case of depleted iron stores, more iron is absorbed, and vice versa (Howson, 1998).
 2. Solubility in the gastric juice and the retention of food in the stomach (Howson, 1998).
 3. The balance between enhancers and inhibitors in the meal, which determines the bioavailability of iron. (Massa'd, 2001).

The enhancers of iron absorption are vitamin C and other organic acids, fruits, mostly banana, melon, guava and papaya and several animal tissues including meat, chicken and fish (Massa'd 2001). The inhibitory food includes cereals, legumes, rice, egg yolk, leafy vegetables, nuts, cow's milk (due to calcium and casein content) and beverages such as tea, coffee and cocoa.

To conclude, haem iron which is present only in meat and fish is readily absorbed irrespective of dietary factors, in contrast to non- haem iron, which is present in vegetables, dairy products and in meat and independent from dietary factors. Reduced intake of haem iron may be one of the factors explaining the higher prevalence of anemia among the poor and among rural area, compared to urban populations.

1.10.4 Early marriage and complications at first conception

Most studies of birth to teenagers (11-19 years) indicated an increased risk of complications of pregnancy and poor neonatal outcomes. According to Cunningham (1993), these complications are preeclampsia and low birth weight infants.

As to the medical aspect of adolescent pregnancy, there is debate concerning the increase or decrease in the incidence of one or more of the following pregnancy complications: Hypertension, anemia, uterine dysfunction, low-birth weight infants, certain congenital malformations and prenatal mortality (Cunningham, 1993).

1.10.5 Socio- economic status

Socio-economic status is one of the underlying risk factors for anemia especially in developing countries (WHO, 1992). A low socio-economic status has adverse effects on the food security, access to health care, environmental sanitation and personal hygiene (WHO, 1999), all of which are predisposing factors for the development of anemia.

1.11 Signs and symptoms of anemia

The early stage of anemia is often without symptoms. In mild anemia, HB concentration is reduced and results in general weakness, tiredness, dizziness and headaches. If uncorrected further drop of hemoglobin will

lead to pallor of the skin, mucus membrane, nail beds, and tongue. If untreated further drop in HB concentration will lead to severe anemia that may lead to death due to heart failure, and infection due to low immunity or shock (WHO, 1992).

1.12 Classification of anemia

According to World Health Organization 1986 anemia can be classified as follows:-

1.12.1 Mild anemia

It corresponds to the level of hemoglobin of 10- 10.9 g/dl for children, 10- 10.9 g/dl for pregnant women and 10-11.9 g/dl for not pregnant women.

1.12.2 Moderate anemia

It corresponds to the level of hemoglobin concentration of 7- 9.9 g/dl for children and pregnant and non-pregnant women.

1.12.3 Severe anemia

It corresponds to the level of hemoglobin concentration of less than 7 g/dl for children and women either pregnant or not.

1.13 Treatment of anemia:

The first step in treatment is to identify the underlying cause and then treat anemia. If it is IDA, iron stores are replaced by dietary modifications and iron supplement, when it result from a disease, such as peptic ulcer, you will need to follow your doctor's advice to get the condition under control (Massa'd, 2001).

1.14 Introduction to malnutrition

Malnutrition is frequently part of a vicious cycle that includes poverty and disease. These factors are interlinked in such a way that each contributes to the presence and permanence of the others. Socio-economic and political changes that improve health and nutrition can break the cycle; as can specific nutrition and health interventions. The WHO Global Database on Child Growth and Malnutrition seeks to contribute to the transformation of this cycle of poverty, malnutrition and disease into a virtuous one of wealth, growth and health (WHO, 2003).

Malnutrition is a term that usually refers to a number of diseases, each with a specific cause related to one or more nutrients (WHO, 2003). For example, protein, iodine, vitamin A or iron. In the present context, malnutrition is synonymous with protein-energy malnutrition which signifies an imbalance between the supply of protein and energy and the body's demand for them to ensure optimal growth and function. This imbalance includes both inadequate and excessive energy intake: the former leading to malnutrition in the form of wasting, stunting and low-weight, and the latter resulting in overweight and obesity.

Malnutrition in children is the consequence of a range of factors that are often related to poor food quality, insufficient food intake, and severe and repeated infection diseases, or frequently same combinations of the three. These conditions, in turn, are closely linked to the overall standard of living and whether a population can meet its basic needs, such as access to food, housing and health care. Growth assessment, thus, not only does it serve as a means for evaluating the health and nutritional status of children

but also provides an indirect measurement of the quality of life of an entire population (WHO, 2003).

1.15 Definition of malnutrition

As mentioned earlier, the term is used to refer to a number of diseases, each with a specific cause related to one or more nutrients (for example, protein, iodine or calcium) and each is characterized by cellular imbalance between the supply of nutrients and energy on the one hand (WHO, 2003), and the body's demand for them to ensure growth, maintenance, and specific functions on the other.

1.16 Classification of malnutrition

1.16.1 Acute (severe) malnutrition

It is generally associated with failure to gain weight or loss of weight (thinness or wasting). Two indicators can measure this issue low weight for height or weight for age. Children whose weight for height or weight for age below three standard deviation (-3 SD) from the median of the reference population are considered to have acute malnutrition (WHO, 1986).

1.16.2 Chronic (moderate) malnutrition

Low height for age is considered as an indicator of chronic malnutrition (shortness or stunting) which is frequently associated with poor overall economic condition and/ or repeated exposure to adverse conditions. Children whose height for age is below (-2 SD) from the median of the reference population are considered to have chronic malnutrition (WHO, 1986).

1.17 Protein energy malnutrition

Protein-energy malnutrition (PEM) is by far the most lethal form of malnutrition. Children are its most visible victims. Malnutrition, “the silent emergency” is an accomplice in at least half of the 10.9 million child deaths each year. These young lives are prematurely-and need lessly-lost (WHO, 2003).

First recognized in the 20th century, PEM’s full impact has been revealed only in recent decades. Infants and young children are most susceptible to PEM’s characteristic growth impairment because of their high energy and protein needs and their vulnerability to infection. Globally, children who are poorly nourished suffer up to 160 days of illness each year. Malnutrition magnifies the effect of every disease.

1.18 Marasmus

Marasmus is the other form of malnutrition in which the child was a low-birth weight baby who remains chronically malnourished (WHO, 2003). As a result, fat and muscle tissues are depleted and the skin hangs in loose folds with the bones clearly visible beneath. Hyper-alert and ravenously hungry, the child’s severe wasting makes him look like a wrinkled old man long before his time.

1.19 Definition of terms/ variables conceptually

1. Nutritional status: the state of health produced by the balance between requirement intakes of nutrients (Al Saifi, 1994).
2. Feeding Practices: prevalence and duration of breastfeeding through use of animal milk, timing and nature of weaning and the mode of transition to adult diet (WHO, 1989).

3. Attitudes: a way of thinking or believing or feeling toward specific phenomenon (Al Saifi, 1994).

1. Weaning: gradual transition for exclusive breast feeding to the consumption of a solid food (Al Saifi, 1994).

2. Education: educated parents were assigned according to their completed years of formal education.

3. Infant: child from the time of birth through 12 months of life.

4. Anemia: an abnormal decrease in body's total red blood cell mass (WHO, 1986).

5. Diarrhea: any change in child's stool, consistency, color and amount, according to mother's observation (WHO, 1992).

6. Malnutrition: a multiplicity of disorders, ranging from deficiencies of specific micronutrients, such as vitamins and minerals to gross starvation or (at the other extreme) obesity. This is largely limited to protein and calorie malnutrition, which is manifested primarily by retardation of physical growth in terms of height and weight (WHO, 1986).

7. Stunting (height for age): This index provides an indicator of linear growth retardation (WHO, 1986).

8. Wasting (weight for height): This index measures body mass in relation to body length (WHO, 1986).

1.20 Definition of terms/ variables operationally

1. Nutritional status: defined by using the following indicators, weight, height and age as classified by (Waterlow, Buzina, Lane, Nichaman and Tanner, 1977). Nutritional status of each child was determined by

assessing child's weight and height and comparing them with appropriate vertical age line on national center of health statistics (NCHS) growth chart that was modified by WHO in Washington in 1974.

2. Feeding Practices: feeding practices was defined by determining the child feeding behaviors under the influence of demographic, socio-economic factors that might shape the feeding patterns.
3. Attitudes: asking the mothers about their believes and opinions about different feeding practices, such as, bottle feeding, weaning and causes of malnutrition.
4. Weaning: defined by determining the age of child, when the mother is starting to give solid food with breast feeding of retraining from giving the breast feeding to her child.
5. Anemia: defined as a case where the HB level is less than 11 mg% and was classified to: mild Anemia: which corresponds to the level of hemoglobin concentration for children of 10- 10.9 g/dl, moderate anemia 7- 9.9 g/dl and severe anemia which is less than 7 g/ dl (WHO,1986) .
6. Diarrhea: the child with diarrhea was recognized by asking the mother if she goes to maternal and child health centers and if the child had frequency diarrhea.
7. Malnutrition: in this study the term malnutrition was classified to acute malnutrition which refers to children whose weight for height or weight for age is below three standard deviations (-3 SD), chronic malnutrition in which children whose height for age is below (-2 SD) (WHO, 1986).

8. Stunting (height for age): children whose height for age is below (-2 SD) from the median of the reference population are considered short for their age, or stunted, children who are (-3 SD) from the reference population are considered severely stunted (WHO, 1986).

9. Wasting (weight for height): children whose weight for height is below (-2 SD) from the median of the reference population are too thin for their height or wasted, while those whose measures are below (-3 SD) from the median of the reference population are severely wasted.

Chapter II

Review of Literature

Malnutrition was taken seriously in view of the fact that it doesn't only affect physical development, but mental and psychological development as well. In developing countries, nutritional anemia still remains a major health problem, particularly among children. It is estimated that prevalence of anemia in developing countries was 51% among children and infants under five years of age (Al- Saifi, 1994).

WHO (2003), point out that the majority of the population (800 million) from the developing countries suffer from malnutrition, mainly the children under five years of age. This malnutrition is responsible directly or indirectly for the death of a large number of children. Also, the report points out that one third of children under five years of age suffer from chronic malnutrition and half of Asia's children are malnourished. Worldwide, there are indicators of malnutrition such as lower weight than they should. Poverty, low status of women, high rates of low birth and weight are some causes of malnutrition in Asia and in Africa. Other causes can be inadequate caring practices as well as poor access to health care.

Malnutrition in its many forms persists in virtually all countries of the world in spite of a general improvement in food supplies and health conditions, and the increased availability of educational and social services. The report adds to start that an estimated 174 million under-five children in the developing world suffer from malnutrition which results in poor physical and cognitive development. Half of the deaths among children has to do with malnutrition. The loss in human potential translates into social and economic costs that no country can afford.

Moreover, over 800 million people still cannot meet basic needs for energy and protein. More than two thousand million people lack essential micronutrients, and hundreds of millions suffer from diseases caused by unsafe food or by imbalanced food intake.

In 1990, reliable data on the prevalence of low-weight in young children was insufficient in 53 developing countries. By 1995, 97 countries had such data, and 95 countries also had data on stunting and wasting. The report goes to point out that it is estimated that more than half of the young children in South Asia suffer from protein-energy malnutrition. This is about five times the prevalence in the Western hemisphere. It is at least three times the prevalence in the Middle East and more than twice that of East Asia. Estimates for sub-Saharan Africa indicate that the prevalence is approximately 30%.

The bitterness of malnutrition and the rapid rise in population caused the actual increase in the number of malnourished children. At present, more than two-thirds of the world's malnourished children live in Asia. Africa and Latin America come next.

At the end of January 1996, national plans of action for nutrition were prepared for 98 countries and 41 countries had one action plan under preparation to keep with their commitment made at the International Conference on Nutrition in Rome in December 1992.

There were some conventional activities such as the protection and promotion of breast-feeding, appropriate complementary feeding, nutrition education for behavioral change, growth monitoring, and micronutrient deficiency control, nutritional support of the sick child, maternal nutrition

and health referral. Successful programmes, resulted from the fact that communities are involved in identifying the problems and mobilizing action and resources for solving them for it was found that a good technical package is not sufficient.

WHO(2003) stresses the fact that more must be done to good nutrition during pregnancy and lactation and innovative approaches to reach adolescent girls were required, particularly in countries in which the enrollment in secondary school was considerably low.

Another important cause of malnutrition was the concentration on complementary feeding, protection attention and breast-feeding special emphasis should be placed on the crucial period from birth to 18 month when programmes of malnutrition are worked out.

For the purpose of optimal growth and function, overall malnutrition must no longer be considered without reference to micronutrient status as the two are inextricably linked.

Many of the countries, failing to achieve improvements in child malnutrition, have been impeded because of emergency situation. To prevent nutritional emergencies and to design safety nets for the most vulnerable groups in case of emergency, more action plans are needed.

In Palestine, several researches were conducted on infant nutrition in the West Bank and Gaza Strip. In her study, Abdelnour (1991), aimed at assessing the nutritional status of the palestinian children aged five years. The study also explored some of the factors affecting the status of malnutrition of children.

The researcher points out that children having mild to severe malnutrition constituted 35.9% of the sample. It was found that the malnutrition rate in girls was higher than that among boys. One of the findings of the research was that diarrheal episodes were common among malnourished children. But children whose main food was breast milk had lower rate of diarrheal episodes than those children fed on powdered milk. The study also showed that children who were fed on breast milk had the lowest incidence of anemia.

In another study conducted by Kumar (1995), the nutritional status of children under five in Gaza Strip was assessed. The sample which was according to WHO standards included 1500 children (705 males and 795 females) from the five representative areas of the Gaza Strip: cities, villages, refugee camps, Bedouin and peri-urban communities. Results indicated that malnutrition is an existing problem. Of the total sample, 15.1% were low-weight. Wasting was found in significant differences between the two sexes. However, geographical differences showed that South Gaza suffered from more malnutrition than other areas. Among other things, the researcher concludes that there is an essential need for continuous monitoring and surveillance of the children's status.

Rizkallah (1991) studied the nutritional status of Al-Jalazon refugee camp and explored the factors affecting the nutritional status of these children. The following were the main findings. “(1) Thirty- two percent of the children suffered from stunting, while eighteen percent suffered from wasting. (2)The prevalence rate of anemia was 18.8%. (3) The prevalence rate of anemia was higher among girls than among boys and was not affected by the wealth of families. (4) The prevalence of wasting and

stunting varied with the wealth of the families; children of poor families had a prevalence of wasting (42.5%). (5) There was a significant correlation between the prevalence of wasting and mother's awareness of the nutritional status of their children. The mothers of 71.2% of the wasted children and of 84.1% of the stunted children were not aware of their children's health status."

Schoenbaum, Talchinsky & Abed (1995) examined gender variation in nutritional treatment and anthropometrics status of children in Gaza Strip. The sample consisted of children aged 0-18 months from five clinics. The analysis concentrated on gender differences in feeding patterns, prevalence of malnutrition and anthropometric status. No consistent gender differences were found although there were some differences were found in anthropometric status for different socioeconomic categories.

In their study, Hassan, Sullivan, Yip & Woodruff (1997) described nutrition among children under three years of age living in Palestinian refugee camps in the West Bank, Gaza, Syria, Jordan and Lebanon. Over 67% of the children wear anemic with higher rate in Gaza, Syria and Lebanon. They found that factors associated with anemia included "lack of breast-feeding, maternal illiteracy, recent or current episodes of fever or diarrhea and stunting. The authors recommend promoting appropriate breast-feeding and weaning practices, iron fortification of commonly used foods, promotion of foods with high iron and vitamin C content, reduction of tea consumption, and consideration of oral iron supplementation if dietary improvements cannot be instituted".

Chapter III

Frame of reference

3.1 Conceptual framework

Food is believed to be an essential requirement for any functioning, the process of growth and development (Al Saifi, 1994). This is especially true in the critical stages of infancy and young children. There is an accumulating evidence showing that the factors that might help in creating malnutrition in children are numerous and complex. Socio- economic status is one of the major factors that deeply influence the nutritional status of children. The conceptual framework for this study includes the fact that the demographic and socio-economic status has strong effects on the child's nutritional status, especially in the developing countries, mainly in rural areas. Both (Munz & Leitazman 1982) explained how the increase in family size raises the percentage of malnutrition. They identified that the percentage of children with poor nutritional status obviously increased in families with three or more children.

Economic status and the possibility for concerning the adequate food that is needed for improving infant's nutritional status has been determined by Rizkallah (1991). She explained how family income can be one of the most important determinants of nutritional status of children that deeply affect the food quality and preparation. She reported that malnutrition is increased with the increasing poverty.

Mother's knowledge, awareness and feeding practices have direct effect on child's nutritional status that might place the child at risk, especially during the weaning period (Al- Saifi, 1994). One of the studies in a rural area in Egypt, showed that weight of infants before the start of weaning ranged between 98 and 100 percent of the standard weight for age, and hemoglobin

level was between 10.4 and 10.5 g/dl with the start of weaning .Both hemoglobin and weight dropped, reaching their lowest level at the age of 12 months.

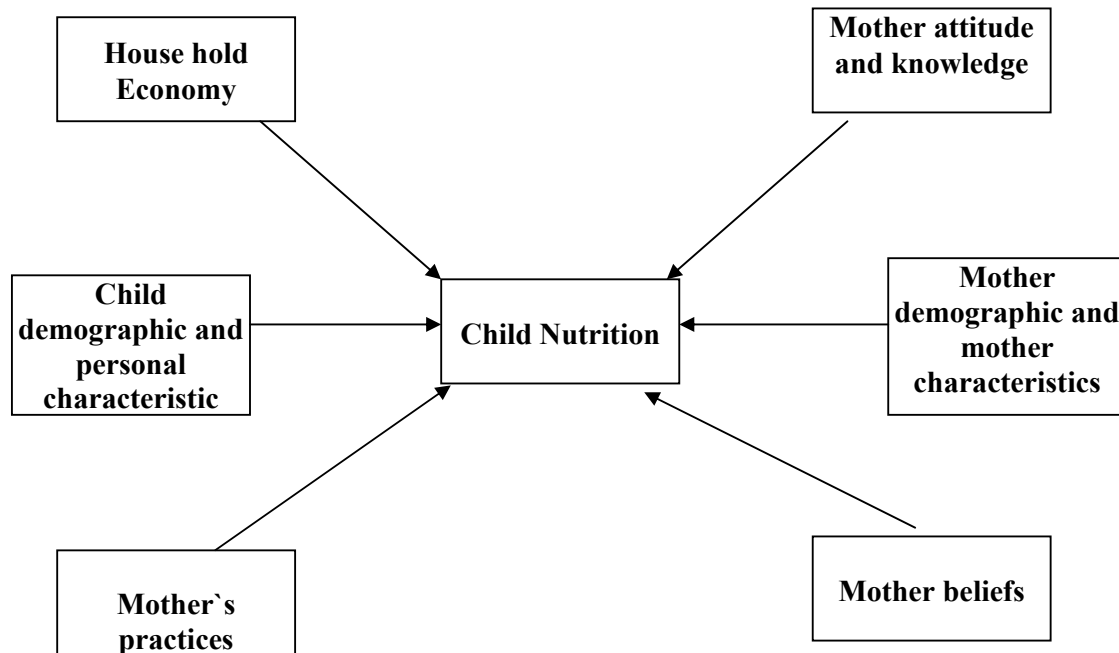
Also, infections, especially respiratory infections, and diarrhea were two of the most common that increase the prevalence of malnutrition between children below five years old. As a result of infection, fever increases the metabolic and the energy of caloric needs of the child and reduces the appetite. At the same time, mouth lesions, breathlessness and cough will impair infants or young child's ability to suck or to eat, resulting with the abnormal loss of nutrients. Moreover, gastrointestinal infection affects the nutritional status by interfering with the absorption of food stuff where enzyme defects also lead to poor absorption.

Marizian,(1991) showed in her study that the main characteristics of the culture that may affect the mothers-child interaction behaviors include: environmental characteristics , such as family size, family support system, marital relationship and socio-economics status, mother's characteristics such as age, education, employment, child rearing practices such as breast feeding, swaddling, fertility patterns, and male gender preference and finally the culture.

Previous researches showed that successful breast feeding requires women to have confidence in themselves and enough self- esteem to protect their rights to breast-feeding (Esterik, 1998). The status of the breast-feeding mother is the central question in the debate. The improvement of women's social and economic status is basic to any change of attitude towards breast-feeding. Successful breast-feeding, then, requires that the position and

condition of women be improved and maternal health be made a household community and a national priority.

Summary of the demographic and socio-economic factors affecting child nutrition



Chapter IV

Methodology

4.1 Research design

A descriptive, cross-sectional study was utilized to assess the nutritional status for children aged (9-18 months), and to explore the different selected variables that may influence the nutritional status. Face-to face structured interviews with the mothers of children who attended the clinics of Palestinian Red Crescent (PRC), UNRWA (Al- ZawiyeH and Shufat) Spafford Children Center (SCC) and Makassed Islamic Charitable Society (MICS) in East Jerusalem. This structured interview helped in getting more specific information especially that deals with mothers' attitudes regarding feeding practices and other relevant variables. It was found that structured interview was more appropriate than other methods for achieving quality information and control of response situation which allow gathering in-depth data.

4.2 Identification of population and sample

The study population was chosen from mothers and children visiting the clinics of PRC, UNRWA (ZawiyeH and Shufat), SCC and MICS, in East Jerusalem in the period July-August 2003. It was proposed to conduct this study on non-governmental organizations (NGO's), (UNRWA) and Israeli sick funds, but the Israeli sick funds refused to participate in this study. A convenient sample was selected according to the utilization rate to each clinic and age of children (9-18 month). The sample of the study consists of a total of 300 children and their mothers. The sample was divided according to the total utilization rate of the clinic. It was as follows: PRC (96), Al- ZawiyeH (76) Shufat (57), SCC (48), and (23) from MICS. It was known that a convenient sample has some advantage like the

ease in carrying out the research and the saving of time and money. Also, there were some limitations like the potential for sampling bias; the sample did not represent the population and the fact that the result is not generalizable.

The selected sample was according to the following percentage:-

Clinics	No. of children Receiving Services	No. of Selected children (9-18month)	Percentage
PRCS	1000	96	32%
Al-Zawiyeh	800	76	25%
Shufat	600	57	19%
Spafford	500	48	16%
Makassed	240	23	8%
Total	3140	300	100%

4.3 Setting

Provision of primary health care (PHC) in East Jerusalem is divided between different health providers and difference in level of service between the areas J1 and J2. Inside the boundaries of the Jerusalem municipality, NGOs and UNRWA carry out most (PHC) services. The Israeli Sick Funds offer selective PHC with a referral system to highly specialized secondary and tertiary health care (the study will not include the Israeli Sick Funds because there was no access).

The main primary health care providers in East Jerusalem area are:

- 1- Palestinian Ministry of Health. (PMOH).
- 2- UNRWA.
- 3- Union of Palestinian Medical Relief Committees.
- 4- Union of Health Work Committees.

- 5- Arab Health Care Center.
- 6- Makassed Charitable Society.
- 7- Patient's Friend Society/ Jerusalem.
- 8- The Arab Orthodox Society.
- 9- The Armenian Health Center.
- 10- Palestine Red Crescent Society.
- 11- Other Clinics.
- 12- Sick Funds.

The study was conducted in five clinics of currently available primary health care services which are discussed in more detail below.

4.3.1 UNRWA

In their study, Imam and Ayoub (2002) point out that UNRWA is the only organization that provides relatively comprehensive PHC to refugees living in East Jerusalem. Three health centers are run by UNRWA: 2 inside the municipality boundaries (Shufat and Jerusalem), (Al- Zawiyeh) and one outside the boundaries (Qalandia). The centers possess all the essential facilities and equipment. They are in good physical condition. This includes diagnostic equipment such as ultrasound, ECG and advanced laboratory services. A signal ambulance is available, but with no permanent team attending. Patients from Jerusalem are using UNRWA clinics even when they have Israeli health insurance for obtaining medication and performing laboratory tests free of charge.

4.3.2 Makassed Islamic Charitable Society

Imam and Ayoub (2002) also include in their study that five health centers are operated by Makassed Charitable Society in East Jerusalem ; two inside the municipal boundaries and three in the suburbs. The largest centers are located in the Old City and Bir-Nabala. A variety of services is offered in there clinics including general medicine, specialized clinics, and x- ray and laboratory basic facilities. The remaining three smaller clinics offer general medicine.

4.3.3 Palestinian Red Crescent Society

PRCS runs two clinics in Jerusalem. They provide women's health care, pediatrics, general medicine, laboratory and immunization services. The staff includes two GPs four specialist physicians, 4-5 nurses, two lab technicians and four administrative staff (Imam and Ayoub, 2002).

4.3.4 Spafford Children Center

This center was founded on a Christmas day in 1925. It was created by Horation Spafford. On that day, a destitute Palestinian came to the house for help. His wife had died and he begged the members to take care of his own born son who otherwise might die, too. They did so, and the boy was the first of motherless children to whom the old house became a home. The medical care activity and the "home" were developed into a hospital with 60 beds. After the 1967 war, the need to the Spafford Children's hospital decreased and it was decided that the needs of the people could now best be served by focusing on preventive medicine with a daily pediatric clinic and infant welfare department where growth is monitored and vaccination is given.

4.4 Ethical Consideration

Mothers were informed about the study. The aim and objectives of the study were explained clearly to them before starting any activity.

Mothers were informed that participation is voluntary and if they wanted to withdraw from the interview they would be free to do so.

Blood testing for children attending the clinics and its importance for this study was clearly explained to the mothers. It was indicated that such examination could be painful for the children and might be stressful for the mothers. Selected mothers were reminded that on that day, they had the right to refuse doing the blood test for their children if not satisfied with the process and the idea. All selected mothers were informed that all information collected during the interviews would be treated confidentially and for research purposes only.

4.5 Instruments

The study utilized 2 main types of research instruments:

4.5.1 Direct instrument

Health and nutritional status for each child was determined by using the anthropometric measurement to assess wasting, stunting and low-weight for age. Measuring of HB level for each child using electronic equipment (Celldyn 3700) after mixing the samples was used.

4.5.2 Questionnaire

Close-ended questions with lickert scale were used in this study. It covered the following different areas:

- Demographic and socio-economic profile of the children's family.
- Diatery history of the child.
- Family income.
- Mother attitudes and knowledge of feeding.

- Nutritional health problems, such as respiratory infection and diarrhea.

To assess the validity of the questionnaire, three experts in research methodology were asked to review the questionnaire. Few modifications were made based on their recommendations.

4.6 Pilot testing

Pilot study was conducted in East Jerusalem in Spafford clinic. Structured interviews were conducted with five mothers, and assessment of children's weight and height was obtained from the children's files.

4.7 Data collection

Data were collected by a team of (12) field workers from Community Action Center / Al-Quds University, which was established in 1999 in the old-city of Jerusalem.

Before data collection, training and orientation of the field workers on the objectives, data collection methods, interviewing the selected children's mothers were completed. The field workers were trained on how to weigh and measure children's height in case height and weight were not recorded in the file. Each interview lasted for 25 minutes.

The records of almost (84%) of (96) children in Al-zawiyeh and (80%) of (57) children in the Shufat clinic did not have complete data, specially the height. So protocols of how to weigh and measure children's height were explained to the field workers as follows:

Weight: Infant's scale (15kg) which is usually used for weighing infants at the clinic. It was also used for assessing children's weight aged 0-2 years. Their weights were assessed after removing their clothes, diapers and shoes but not light clothing.

Height: children's height was measured by using a pocket size meter which was fixed on a hard board using the tape. The child was laid in a supine position against the measurement and without shoes. One person held the knees down, while another read the measurement of the distance between the head and the feet.

Data were collected during the period of July- August 2003, using structured interview, anthropometric measurement. To assess HB level using electronic equipment measuring absorption by spectrophotometer related to standard values. The blood sample for each child aged (9-18 months) was collected by a lab technician. Blood samples were obtained through the child's vein after cleaning the place by alcohol using a butterfly needle. The blood was drawn by using edeta tubes. For some blood samples, the child's finger was cleansed by an alcohol swab and then punctured with disposable lancets. Finally, the blood was drawn by using the capillary tubes as was done in AL- Zawiyeh clinic.

The child's name, the date, the serial number and names of clinics were recorded on each tube. The blood samples were collected daily afternoon from the clinics by one of the field workers and sent to Al-Makassed hospital lab by a rack within one-two hours for complete blood count.

4.8 Data analysis

Since the questionnaire design included one form of closed-ended questions, descriptive statistics were applied through the use of SPSS. Chi-Square and Anthropometric programs were used too.

Chapter IV

The Results and Discussion

This chapter will include description of the demographic, socio-cultural and economic variables, factors that affect children's nutritional status, distribution of children according to Hb level and their background characteristic, distribution of children according to their height, weight and age, relationship between mother practices and malnutrition and relationship between children's background characteristics and malnutrition.

5.1 Demographic, socio-economic and economic variables

From the study of the mothers of 300 children interviewed, it was found that 168 of the children are males and 132 are females between the ages of 9–18 months as shown in figure 1.

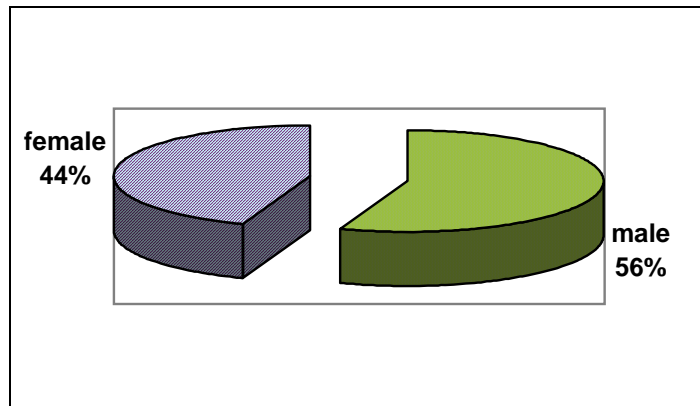


Figure 1. Percentage distribution of children aged (9-18 Months) by sex

Figure 1 show that 56% of the assessed sample aged (9-18) months were males and 44% were females.

Regarding the locality type, the result showed that 30 (10%) of the children live in a camp, 87 (29%) live in a rural area and 183 (61%) of them live in an urban area as shown in figure 2.

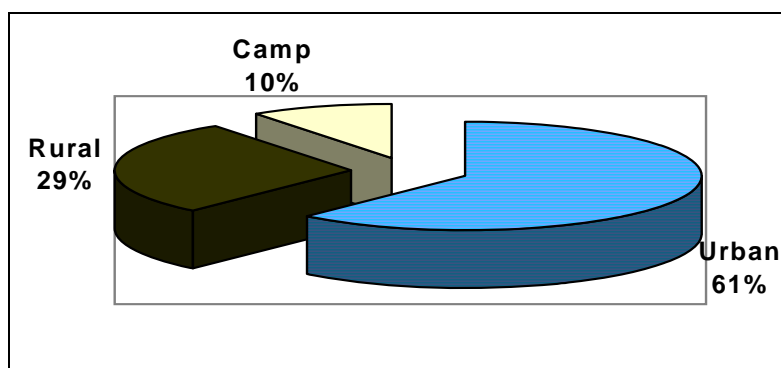


Figure 2. Percentage distribution of children (9-18 Months) by locality type.

As for the level of the mother's education, the result showed that 75 (25%) of the mothers had low education, 174 (58%) had moderate education (9 – 12 grade), while 51 (17%) of them had with higher education, (12 and over) as shown in figure 3.

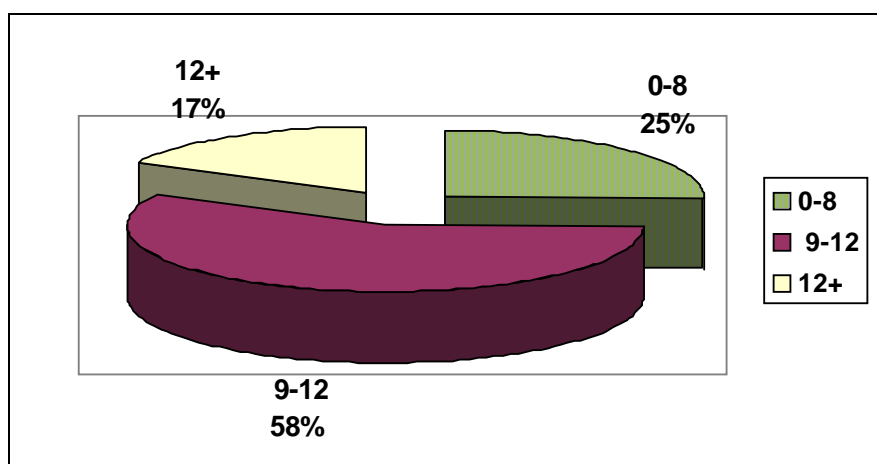


Figure 3. Percentage distribution of children mothers (9-18 months) by education level

5.2 Factors that affect children nutrition status

It includes mother's attitudes and practices, health status of the mother during pregnancy and exposure of the children to certain diseases.

Table 1. Mother's health condition and practices during pregnancy by degree of agreement

Indicators	Percentage %				Total
	always	some times	rarely	Not applicable	
1. During my pregnancy, I suffered from health problems	11.6	10.6	5.5	72.4	100.0
2. During my pregnancy, I smoked cigarettes	1.0	0.7	0.3	98.0	100.0
3. I smoked (Nargela) during my pregnancy	0.0	0.0	1.7	98.3	100.0

It's noted from the table (1) that (11.6%) of the mothers always had health problems during pregnancy which might affect the outcome of pregnancy while 1% of them smoke cigarettes, and (1.7%) rarely smoked Nargela during pregnancy. Cigarette smoking resulted in low birth weight babies (small for date) premature death and low Intelligence Quatent (I.Q) and preterm babies (Obstetrics, 1995).

More must be done to enhance good nutrition in pregnancy and lactation. Health programmes will require innovative approaches to reach adolescent girls, particularly in countries where their secondary school enrollment is low (WHO, 2003).

Table 2. Mother's practices affecting child nutrition by degree of agreement

Indicators	Percentage %				
	always	some times	rarely	Not applicable	Total
1. After delivery, I start breast- feeding	88.7	1.4	1.0	8.9	100.0
2. I breast- feed my child	81.6	4.1	1.0	13.3	100.0
3. I bottle-feed my child.	30.5	13.7	3.1	52.7	100.0
4. I give my child solid food.	74.2	16.8	1.7	7.2	100.0
5. I give my child powder milk	38.4	9.9	3.4	48.3	100.0
6. I give my child fresh animal milk	9.2	6.5	5.1	79.2	100.0
7. I give pasteurized milk to my child	20.8	12.6	3.4	63.1	100.0
8. I boil the milk before I give it to my child	59.1	2.4	1.0	37.5	100.0
9. I add water to fresh milk	14.1	3.1	1.7	81.1	100.0
10. When I prepare powder milk, I use a spoon as a measurement	50.3	3.1	0.0	46.6	100.0
11. When I prepare powder milk, I use (cm ³) graded measurement	46.9	3.4	0.7	49.0	100.0
12. Besides breast feeding, I give solid food to my child when I am ill	54.3	15.6	2.4	27.7	100.0
13 .Besides breast- feeding I give solid food to my child when she is sick	26.0	15.1	5.5	53.4	100.0
14. Besides breast feeding I give solid food to my child because I am a working woman.	5.9	2.1	0.7	91.3	100.0
15. When I am pregnant, I stop breast-feeding.	75.7	3.1	0.3	20.9	100.0
16. When the child refuses breast- feeding, I give him solid food	53.6	10.9	2.0	33.4	100.0
17. Because I am tired of breast- feeding, I give solid food to my child.	30.1	6.2	3.8	59.9	100.0
18. I give my child solid food besides breast -feeding, when I feel that she / he is hungry.	56.7	14.4	3.4	25.4	100.0
19. I give my child solid food besides breast -feeding because she/he is grown up and he /she need it.	83.5	5.5	1.7	9.3	100.0
20. When my breast milk is dry, I give my child solid food.	33.0	5.8	1.7	59.5	100.0
21. I notice that my child gain weight when I give to him/her solid food besides breast feeding	64.5	17.8	4.9	12.9	100.0
22. When I give solid food to my child, he/she stops crying.	65.6	18.2	2.1	14.1	100.0
23. When breast milk is not enough, I give	55.0	7.6	5.8	31.6	100.0

solid food to my child.					
24. I give my child solid food because others advise me to do so.	34.1	10.7	3.4	51.7	100.0
25. I give my child solid food when I notice that the size of my breasts is small and the milk is not enough.	28.8	3.4	2.4	65.4	100.0
26. Besides breast-feeding, I give my child beans meal.	44.8	16.2	5.2	33.8	100.0
27. Besides breast-feeding, I give my child vegetables meal.	75.1	11.9	3.8	9.2	100.0
28. Beside breast-feeding, I give my child meat, chicken or fish.	37.0	18.8	10.6	33.6	100.0
29. I give my child one egg daily.	28.3	30.7	7.8	33.1	100.0
30. I give my child some tea.	7.2	13.7	13.7	65.5	100.0
31. I give my child some juice.	61.0	23.3	4.5	11.3	100.0
32. Before the age of (6) months, I give (anissette and commomile) to my child.	43.3	24.4	8.9	23.4	100.0
33. I give my child iron dose.	51.7	14.4	6.2	27.7	100.0
34. I give my child (A+ D) vitamins .	47.9	11.6	6.2	34.2	100.0

It is noticed from table 2 that certain percentages of mothers have good practices like 88.7% who always start breast-feeding after delivery, 81.6% always breast-feed their children, 59% always boil the milk before it is given to the child, 46.9% when preparing powder milk, they always use (cm³) graded measurement, 54.3% always give solid food to their children when they become ill besides the breast-feeding, 83.5% give solid food besides breast feeding because the bodies of their children develop and grow, and 55.0% give it when breast milk is not enough.

Thirty seven percent always give meat, chicken or fish to their children besides breast feeding, 28.3% give one egg, 61% give some juice, 51.7% give iron dose and 47.9% always give vitamins.

According to UNICEF, it is recommended to start breast-feeding immediately after delivery (Child Friendly Hospital, UNICEF, 1998). Breast- feeding is essential for better nutrition of child and his growth and development (Child Friendly Hospital, UNICEF, 1998). Ministry of health

in Palestine policies promote exclusive breast-feeding for the first six months and to continue breast-feeding up to two Years, UNICEF recommend the introduction of solid food by the age of six months while WHO recommend to give extra solid food when the child is ill and to give iron supplementation, food rich in iron like eggs, meats, and juice to prevent iron deficiency anemia and to give vitamin (A+D) supplementation which is essential for babies. Vitamin A prevents night blindness and exophthalmia while vitamin D prevents rickets.

Fifty five of the mothers in this study start to give their children food, when breast milk is not enough. By this practice mothers start the weaning at an early age which is a critical period.

Many studies showed that the children with an early weaning age had a higher prevalence rate of malnutrition than other children. There was a significant correlation between the child health and development and mother's awareness of the nutritional status of their children, the mothers of (71.2%) of the wasted children and (84.1%) of the stunted children were not aware of their children's health status as indicated in Rizkalla in 1991.

The result of this study shows that (37.5%) of the mothers do not boil the milk before it is given to their children. This leads to infection, illness and will affect their development and growth. The type of food that the mother gives to her child affects his health and development for (75.1%) of the mothers give their children vegetables and meat besides breast-feeding, 37% give their children meat, chicken or fish , (28.3%) give them one egg daily, these types of food affect the child's physical and mental development.

According to a study among children under 3 years of age living in Palestinian refugee camps in west bank, Gaza, Syria, Jordan and Lebanon showed that the factors associated with anaemia included, lack of breast-feeding, male sex, maternal illiteracy, recent episodes of fever or diarrhea, and stunting (Hassan *et al.*, 1997). The purpose is to avoid or reduce percentage of anemia, wasting, stunting and underweight, promotion of breast-feeding and weaning practices, iron fortification of commonly used foods, promotion of foods with high iron and vitamin C contents.

It is also noticed that there are other negative practices which might affect child's growth and development these include:

- Thirty point five percent always bottle feed the child.
- Thirty eight point four percent always give powder milk to their children.
- Nine point two percent give fresh milk from an animal source and it's known that fresh milk is not good for babies in infancy.
- Fourteen point one percent always add water to fresh milk, as it's known that this dilute the milk and the child won't have a good benefit from it.
- Thirty point one percent always give children solid food because they are tired from breast feeding, and 34% always do this because others advice them.
- Bottle feeding is very bad for child nutrition with all the risks it has, such as causing diarrhea or ill health. No matter how much they modify the powder milk, it will not be similar to mother's milk. Fresh animal milk

does not contain iron or other essential elements for child growth (Child friendly hospital, UNICEF, 1998). (Cow milk for cows and human milk for the humans, it's known that beliefs determine mother's practices and not the knowledge).

A previous study by Al-Saifi (1994) showed that anemia increased among children weaned before the age of six months. It also showed that prevalence of malnutrition increased during the weaning period especially when they were weaned before the age of six months. Seven point two percent of mothers always give their children some tea. It is known that tea is not good for children because it prevents the absorption of iron, and so the child will be anemic.

Table 3. Diseases affecting the child health by degree of agreement

Indicators	Percentage %				
	Always	Some times	rarely	Not applicable	Total
1. My child suffers from a non-chronic disease.	59.1	17.2	8.6	15.1	100.0
2. My child suffers from a chronic disease.	3.1	3.1	4.4	89.4	100.0
3. Twice monthly, my child is infected by diarrhea.	8.9	16.8	21.2	53.1	100.0
4. Twice monthly my child is infected by ARI.	7.5	14.3	9.6	68.6	100.0
5. My child is thread- worm infected.	0.7	1.7	0.7	96.9	100.0

It is indicated from table (3), that children under study do not always suffer from chronic disease (89.4%) or/an acute respiratory infection (ARI) (23.7 %). Neither diarrhea (53.1%), nor thread worm (96.9%), while (59%)

do always suffer from a non-chronic disease which might affect their health, e.g. losing appetite.

Infection, especially respiratory infection and diarrhea were two of the most common diseases that increase the prevalence of malnutrition in children under five years of age. This was indicated by Al-Saifi (1994). She point out that the metabolic calories need of the child is increased by fever and reduces the appetite. This will lead to mouth lesions, breathlessness and cough which will impair the infant or the young child's ability to eat; resulting in the abnormal loss of nutrients. Moreover gastrointestinal infection affects the nutritional status through interfering with absorption of food stuff where enzyme defects also lead to poor absorption.

Table 4. Mother beliefs affecting child growth or development

	Percentage %					
	Strongly Agree	agree	Don't know	Note agree	strongly Note agree	% Total
1. When the child's appetite decreases, his body does not grow normally.	22.9	34.8	6.1	32.8	3.4	100.0
2. The child does not grow normally, when his weight dos not increase.	17.1	36.2	7.8	34.5	4.4	100.0
3. The child does not grow normally when his movements are unusual.	8.2	28.5	21.0	40.5	1.7	100.0
4. When the mother notices that the child's face is pale, she must take the child to doctor or a maternal and child center	69.9	23.6	0.7	5.1	0.7	100.0
5. When the mother notices weakness in the child's movement, she must take him to the doctor.	62.2	26.8	2.1	7.6	1.4	100.0

6. When the child is infected by diarrhea frequently the mother has to take him to the doctor.	76.0	18.8	0.7	3.1	1.4	100.0
7. When the mother notices white spots on the child's nails, she must take him to doctor.	49.8	23.5	9.9	14.7	2.0	100.0

Table 4 shows that some of the beliefs of study population have good impact on the child's health while others have negative impact. Most of the mothers recognize the danger signs in the child's health and believe that they have to see a doctor when there are dangerous signs such as the case of loss of appetite and failure of the child to gain weight. Some of the mothers recognize symptoms of malnutrition (Al-Saifi, 1994). A study in Beddu region showed that 20% of the mothers recognize the symptoms of malnutrition and 50% of them could not give any possibility of anemia.

In this study, (69.9%) believe that when the child's face is pale, or there is weakness in child's movement (62.2%), the child must be taken to the doctor, (76%) believe that when child is frequently infected with diarrhea, the mother has to go to the doctor and 49.8% believe that when there is a white spot on the Child's nails, he must be taken to the doctor, (53.3%) agree that the child does not grow normally when his weight does not increase, It is known that if the child's weight does not increase in two successive measurements over two months, this means that there is something wrong with the child and he/she should be seen by the doctor. Some of the beliefs have bad impact on child's health such as only 32.8% of the study population do not believe or not agree that when the child's appetite decreases, his body does not grow normally.

Al-Saifi (1994) concludes that the mother's knowledge, awareness, beliefs and feeding practices have direct effect on the child's nutritional status. That might place the child at risks, especially during the weaning period.

5.3 Distribution of children according to Hb level and their background characteristics

Table 5 demonstrates status of children according to their Hb level and background characteristics.

Table 5. Percentage distribution of children aged (9-18 Months) by anemia status and background characteristics

Background Characteristics	Value labels	Moderate	Mild	Not Anemic	Total
A. Sex	Male	17.2	24.5	58.3	100.0
	Female	10.8	31.5	57.7	100.0
Total		14.3	27.1	58.0	100.0
B. Mother's age	Less than 18 y.	12.5		87.5	100.0
	19-22 y.	17.0	36.2	46.8	100.0
	23-26 y.	11.4	30.0	58.6	100.0
	27-30 y.	12.1	22.7	65.2	100.0
	≤ 31 y.	16.4	20.0	63.6	100.0
C. No. of alive children	1-3	13.9	30.4	55.7	100.0
	4-6	15.7	27.1	57.1	100.0
	6 and over	13.8	10.3	75.9	100.0
D. Weight at birth					
	> 2.5 kg	28.6	19.0	52.4	100.0
	2.5-4 kg	12.3	28.7	59.0	100.0
	over 4kg	33.3	11.1	55.6	100.0
E. Education	< 9th grade	10.8	25.7	63.5	100.0
	9-12 grade	16.8	29.3	53.9	100.0
	over 12 grade	12.0	24.0	64.0	100.0
F. Income	less than	12.0	20.0	68.0	100.0

	1000				
	1000-2000	12.4	28.1	59.6	100.0
	2100-3000	14.4	28.8	56.8	100.0
	3100-5000	17.9	30.4	51.8	100.0
	over 5000	18.2	18.2	63.6	100.0
G. Order in family	1.0	12.7	34.3	52.9	100.0
	2.0	17.0	26.4	56.6	100.0
	3-4	14.7	27.9	57.4	100.0
	≤ 5	14.5	17.4	68.1	100.0
H. Type of locality	Urban	13.3	26.5	60.2	100.0
	Rural	17.9	29.8	52.4	100.0
	Camp	10.7	28.6	60.7	100.0

The results showed that (41.4%) of the children were anemic, and the percentage of anemia among males was (41.7%) and (42.3%) was among females. As we have noticed, the percentage of anemia was significantly higher in females than males. Others studies showed that about (25%) of a selected sample under five Palestinian children in the Union of Palestinian Medical Relief Committees clinics were anemic (Abdelnour, 1991). Another study assessed the nutritional status of AL-Jalazon Refugee camp children showed that (18.8%) of the children were anemic and the prevalence rate of anemia was higher among girls than boys (Rizkalla, 1991). An overall of (67%) were anemic with higher rate in Gaza, Syria and Lebanon (Hassan, *et al.*, 1997). A study conducted in one of well-baby clinic run by (UPMRC) in Beddu Region in the West Bank showed that 43.3% of the children were anemic which is significantly higher among female (64.7%) than male (AL –Saifi, 1994).

The studies showed that the Percentage of anemia among females was significantly higher than males. The reason might be that the mother's awareness and care for boys is higher than that of the girls in many conditions, especially when they became ill. Also mother's awareness of the nutritional status of the boys is more than that of girls (Rizkalla, 1991).

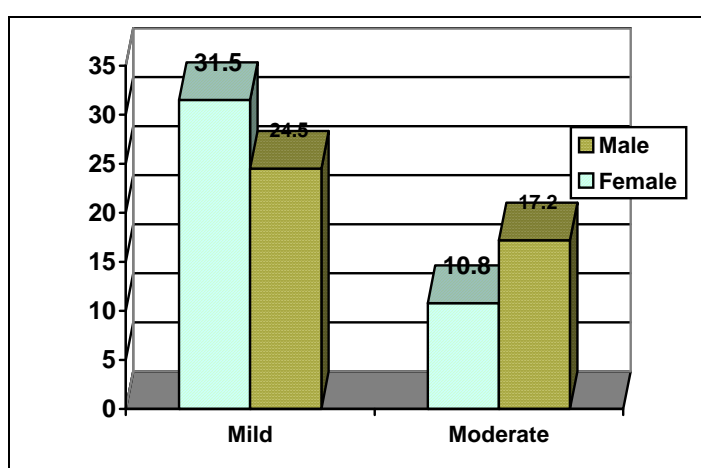


Figure 4. Distribution of children aged (9-18 Months) by anemia status and sex

Figure 4 shows that 17.2% of the males and 10.8% of females Suffer from moderate anemia, 24.8% of the males and 31.5% females are with mild anemia.

5.4 Distribution of children according to their height, weight and age

Tables 6, 7 and 8 demonstrate distribution of children according to weight for height, height for age and weight for age.

Table 6. Percentage distribution of children aged (9-18 Months) by weight-for height standard deviation categories and background characteristics

Background Characteristics	value labels	Wasting	Normal	Total
A. Sex	Male	10.0	90.0	100.0
	Female	6.6	93.4	100.0
Total		8.5	91.5	100.0
B. Mother's age	Less than 18	0	100.0	100.0
	19-22	12.2	87.8	100.0
	23-26	9.1	90.9	100.0
	27-30	6.2	93.8	100.0
	≤ 31	5.7	94.3	100.0
C. No. of alive Chil.	1-3	10.2	89.8	100.0
	4-6	6.1	93.9	100.0
	≥6	3.6	96.4	100.0
D. Weight at birth	> 2.5 kg	4.8	95.2	100.0
	2.5-4	8.4	91.6	100.0
	< 4kg	28.6	71.4	100.0
E. Education	> 9th grade	4.3	95.7	100.0
	9-12 grade	11.2	88.8	100.0
	< 12 grade	6.0	94.0	100.0
F. Income	> 1000	12.5	87.5	100.0
	1000-2000	8.5	91.5	100.0
	2100-3000	8.1	91.9	100.0
	3100-5000	7.7	92.3	100.0
	< 5000	9.1	90.9	100.0
G. Order in family	1.0	8.2	91.8	100.0
	2.0	9.8	90.2	100.0
	3-4	12.3	87.7	100.0
	≤ 5	4.5	95.5	100.0
H. Type of locality	Urban	8.6	91.4	100.0
	Rural	8.2	91.3	100.0
	Camp	7.4	92.6	100.0

Ten percent of the males and (6.7%) of the females in this study have wasting as shown in table (6). According to data of (pcbs, 2002) children aged 6-11 months registered the highest percentage of wasting. At 4.1% were below the mean (-2 standard deviations). This could be the result of

weaning at this age and coming down with diarrhea as a result of consuming home-made foods.

Table 7. Percentage distribution of children aged (9-18 months) by height-for age standard deviation categories and background characteristics

Background characteristics	value labels	Stunting	Normal	Total
A. Sex	Male	16.2	83.8	100.0
	Female	11.6	88.4	100.0
Total		14.2	85.8	100.0
B. Mother's age	Less than 18	0	100.0	100.0
	19-22	13.3	86.7	100.0
	23-26	13.6	86.4	100.0
	27-30	17.2	82.8	100.0
	31 and Above	15.1	84.9	100.0
C. No. of alive chil.	1-3	11.8	88.2	100.0
	4-6	19.7	80.3	100.0
	6 and over	17.9	82.1	100.0
D. Weight at birth	less than 2.5 kg	38.1	61.9	100.0
	2.5-4	12.8	87.3	100.0
	over 4kg	0	100.0	100.0
E. Education attainment	less than 9th grade	21.7	78.3	100.0
	9-12 grade	12.4	87.6	100.0
	over 12 grade	10.0	90.0	100.0
F. Income	less than 1000	20.8	79.2	100.0
	1000-2000	13.4	86.6	100.0
	2100-3000	13.5	86.5	100.0
	3100-5000	15.4	84.6	100.0
	over 5000	9.1	90.9	100.0
G. Order in family	1.0	10.2	89.8	100.0
	2.0	17.6	82.4	100.0
	3-4	12.3	87.7	100.0
	5 and over	19.7	80.3	100.0
H. Type of locality	Urban	13.8	86.2	100.0
	Rural	17.5	82.5	100.0
	Camp	7.4	92.6	100.0

Sixteen point two percent of the males, (11.6%) of the females had stunting as shown in table 7. According to data of (Pcbs, 2002) the highest

percentage of stunting children under the age of five was (10.5%) for those aged 12-23 months, this was almost similar to the result of this study but with a wider age. Previous studies should that for the ages of 6-11 months (8.1%) of females are stunting compared with (7%) for males but in this study, the result shows that (11.6) of females aged (9-18 months) are stunting compared with (16.2%) for males at the same age.

Table 8. Percentage Distribution of children aged (9-18 Months) by Weight-for Age Standard Deviation categories and Background Characteristics

Background characteristics	value labels	Under weight	Normal	Total
A. Sex	Male	10.0	90.0	100.0
	Female	9.1	90.9	100.0
Total		9.6	90.4	100.0
B. Mother's age	Less than 18	0	100.0	100.0
	19-22	6.4	93.3	100.0
	23-26	15.2	84.8	100.0
	27-30	9.4	90.6	100.0
	31 and Above	9.4	90.6	100.0
C. No. of alive children	1-3	9.1	90.9	100.0
	4-6	12.1	87.9	100.0
	6 and over	7.1	92.9	100.0
D. Weight at birth	less than 2.5 kg	28.6	71.4	100.0
	2.5-4	8.4	91.6	100.0
	over 4kg	0	100.0	100.0
E. Education attainment	less than 9th grade	10.1	89.9	100.0
	9-12 grade	11.2	88.8	100.0
	over 12 grade	4.0	96.0	100.0
F. Income	less than 1000	16.7	83.3	100.0
	1000-2000	7.3	92.7	100.0
	2100-3000	9.0	91.0	100.0

	3100-5000	13.5	86.5	100.0
	over 5000	0	100.0	100.0
G. Order in family	1.0	7.1	92.9	100.0
	2.0	9.8	90.2	100.0
	3-4	9.2	90.8	100.0
	5 and over	13.6	86.4	100.0
H. Type of locality	Urban	10.3	89.7	100.0
	Rural	10.0	90.0	100.0
	Camp	3.7	96.3	100.0

Ten percent of the males, (9.1%) of the females were low-weight for age as shown in table (8).

Compared with other studies (35.9%) of the children under five in (UPMRC) clinics with mild to severe malnutrition (Abdelnour, 1991). A study to assess the nutritional status of children under five in Gaza strip showed that (15%) of the children had low-weight (Kumar, 1995). Anther study conducted on Al-Jalazon Refuge camp children showed that (32%) of the children suffered from stunting, (18%) suffered from wasting (Rizkalla 1991), and (43.3%) of a children in Beddu region in the West Bank were low-weight for their age.

The percentage of anemia among the children whose mother's age is less than (18) years was (12.5%), while (36.4%) of the children whose mother's age is 31 years and over were anemic, (5.7%) of the children whose mothers' age is 31 years and over had wasting while (94.3%) were normal, (15.1%) had stunting and (9.4%) were underweight (as shown in Tables 5, 6, 7 and 8) . No wasting, stunting or low-weight in children

whose mothers were aged 18 years or less was reported. In this study anemia in children is affected by the age of the mother. The older the age of mother, the more the percentage is. Also there is a correlation between the mother's age and wasting, stunting, and low-weight for age. Nothing was found in the literature review that explains these finding. It might be due to the psychological effect of the age, the older the woman the easier to get tired of looking after children. This will lead to more stresses of life and responsibilities. Forty for point three percent of the children whose number of alive children in their families (1-3) have anemia, (10.2%) have wasting,(19.7%) of the children whose number of alive children in their families(4-6)have stunting and (12.1%) have low-weight for age (as shown in tables (5.6.7 and 8). The result of the study showed that stunting, low-weight for age were affected by the number of the alive children in the family.

In her study, Marizian (1991) points out those main characteristics of the culture that might affect mother's child interaction behaviors. These include environmental characteristics such as family size, family support, system, marital relationship and socioeconomic status. They also include mother's characteristics such as age, education and employment, child rearing practices such as breast feeding and male gender preference, fertility pattern and finally the culture.

Marizian (1991) states that the more the number of children in the family, the more care they need, more food to consume, more money to spend and more medicine. This will necessary affect their nutrition.

The literature showed that the more children in the family, the more the increase in malnutrition. It was identified that the percentage of children with poor nutritional status obviously increased in families with three or more children (Marizian, 1991). Forty Seven point Six percent of the children whose weight at birth was less than 2.5Kg had anemia, (38.1%) had stunting, (28.6%) had low-weight for age and (28.6%) of the children whose weight at birth over 4Kg had wasting. It's shown that anemia is affected by birth weight, the less the birth weight of child is the more chance the baby will have anemia. From birth and up to 6th month of age, the child depends on the iron storage in the body which comes from the mother. Because of the immaturity of the child's organ, he/she is unable to synthesize hemoglobin. Low birth weight has effect on wasting and stunting until the age of 6 months. After this age, the effect of low birth weight on children is becoming less and less.

Forty Six point One percent of the children whose mothers' education 9th -12th grades had anemia, (11.2%) had wasting, (11.2%) had low-weight for age and (21.7%) of the children whose mothers' education was less than 9th grade had stunting. The result of the study showed that there was a relationship between the level of education and presence of stunting and

low-weight. The result also showed that percentage of anemia and wasting were not affected by the level of the mothers' education as shown in tables, 5, 6, 7 and 8. This might be because the mothers did not know what the type of the food was important for the child growth in certain age. And they didn't have enough health education. The percentage of anemia was not affected by the level of mother's education. This was because the mothers gave their children iron supplementation.

Compared with another study the educational level of parents affected the nutritional status of their children (Rizkalla, 1991). Thirty tow percent of the children whose families income was less than 1000 Sheikels had anemia, (12.5%) had wasting, (20.8%) had stunting and (16.7%) of the children had low-weight for age. The study showed that income affects the percentage of anemia, wasting, stunting, and low-weight. The families with low income had the highest percentage of anemia, wasting, stunting and underweight for age as shown in tables, 5, 6, 7 and 8. Another study showed that the prevalence of wasting and stunting varied according to the wealth of the family. Children of poor families had a prevalence of wasting (42 .5%). Also, the prevalence rate of anemia was not affected by the wealth of the families (Rizkalla, 1991).

Forty Seven percent of the children whose order in their families was No. 1 had anemia, (12.3%) whose order in their families (3-4) had wasting,(19.7%) whom order in their families was No. 5 and over had

stunting and (13.6%) had low-weight for age as shown in tables (5,6,7 and 8). So, the result showed that the order in the family affected the percentage of wasting, stunting and low-weight. Data obtained from Pcbs (2002) showed that stunting gradually increases with birth order. For example, (6.4%) of first children were stunting compared with (8.9%) for the sixth child and more. A gradual rise in the low-weight indicator was also noticed.

Forty Seven point Seven percent of the children living in rural area had anemia, (17.5%) had stunting while (8.6%) living in urban area had wasting and (10.3%) had low-weight for age. The result showed that the percentage of anemia, wasting, stunting and low-weight for age is higher in urban and rural area than camp areas as shown in tables 5, 6, 7 and 8. This might be as a result of (UNRWA) services. In comparing the result with the situation in the West Bank camps, for example, the percentage of the children suffering from stunting in AL-Jalazon camp was (32%). Eighteen point eight percent suffered from anemia and the children of poor families had a prevalence of wasting (42.5%).

5.5 Relationship between mother practices and malnutrition.

Table 9. Chi-Square test comparing mother Practices and anthropometric measurement

	Low-weight	Stunted	Wasted
	Person chi-square	Person chi-square	Person chi-square

1. After delivery I start breast-feeding.	$X^2=0.69, p=0.9$	$X^2=1.0, p=0.8$	$X^2=0.9, p=0.8$
2. I breast feed my child.	$X^2=1.1, p=0.8$	$X^2=2.0, p=0.6$	$X^2=1.7, p=0.6$
3. I feed my child bottle milk.	$X^2=1.8, p=0.6$	$X^2=0.9, p=0.8$	$X^2=2.7, p=0.4$
4. I give my child solid food.	$X^2=3.0, p=0.4$	$X^2=4.6, p=0.2$	$X^2=0.9, p=0.8$
5. I give powder milk to my child.	$X^2=7.3, p=0.05$	$X^2=1.9, p=0.6$	$X^2=11.3, p=0.01$
6. I give my child fresh milk from animal source (goat , cow)	$X^2=2.7, p=0.44$	$X^2=3.6, p=0.3$	$X^2=2.6, p=0.45$
7. I give pasteurized milk to my child.	$X^2=6.4, p=0.08$	$X^2=3.2, p=0.36$	$X^2=16.5, p=0.00$

Table 9 shows that there are statistical significant relationship between using powder milk and pasteurized milk and malnutrition indicators. Previous studies showed that feeding practices were believed to be one of the major factors that might influence the nutritional status in the developing countries especially in the first five years, when a child is completely dependent on his mother in preparing the diet. Nutritional behavior like wearing practices or the social structures may cause a negative influence on the nutritional status (Munz & leitzman, 1982).

5.6 Relationship between children background characteristics and malnutrition.

Table 10 shows that the relationship between children characteristics and malnutrition.

Table 10. Chi-Square test comparing background of children and anthropometric measurements

Background characteristics	value labels	Low-weight	Stunting	Wasting
Sex	Male	10.0	10.0	16.2
	Female	6.6	9.1	11.6
Total		8.5	9.6	14.2
Person chi-square		$X^2=0.07$, $p=0.80$	$X^2=1.2$, $p=0.30$	$X^2=1.01$ $p=0.39$
Mother age	< 18	0	0	0
	19-22	12.2	6.4	13.3
	23-26	9.1	15.2	13.6
	27-30	6.2	9.4	17.2
	≥ 31	5.7	9.4	15.1
Person chi-square		$X^2=4.09$, $p=0.40$	$X^2=1.9$, $p=0.75$	$X^2=3.3$ $p=0.51$
No. Of alive children	1-3	10.2	9.1	11.8
	4-6	6.1	12.1	19.7
	≥ 6	3.6	7.1	17.9
Person chi-square		$X^2=1.22$, $p=0.62$	$X^2=3.8$, $p=0.22$	$X^2=3.84$, $p=0.25$
Weight at birth	< 2.5 kg	4.8	28.6	38.1
	2.5-4	8.4	8.4	12.8
	over 4kg	28.6	0	0
Person chi-square		$X^2=10.1$, $p=0.02^{**}$	$X^2=11.7$, $p=0.01^{**}$	$X^2=4.18$ $p=0.24$
Education attainment	< 9th class	4.3	10.1	21.7
	9-12	11.2	11.2	12.4
	over 12	6.0	4.0	10.0
Person chi-square		$X^2=2.40$, $p=0.50$	$X^2=4.5$, $p=0.21$	$X^2=3.5$, $p=0.32$
Income	<1000	12.5		20.8
	1000-2000	8.5	16.7	13.4
	2100-3000	8.1	7.3	13.5
	3100-5000	7.7	9.0	15.4
	> 5000	9.1	13.5	9.1
Person chi-square		$X^2=4.1$, $p=0.53$	$X^2=1.4$, $p=0.92$	$X^2=0.65$ $p=0.98$
Order in family	1.0	8.2		10.2
	2.0	9.8	7.1	17.6
	3-4	12.3	9.8	12.3

	≥ 5	4.5	9.2	19.7
Person chi-square		$X^2=1.93, p=0.60$	$X^2=3.6, p=0.31$	$X^2=2.64,$
Type of locality	Urban	8.6		13.8
	Rural	8.2	10.3	17.5
	Camp	7.4	10.0	7.4
Person chi-square		$X^2=1.21, p=0.54$	$X^2=1.76, p=0.41$	$X^2=0.54,$

On doing the chi-square test on the demographical, social and economical indicators and their relationship with malnutrition indicators, it was found that there is one relationship that has a statistical significance. It is the relationship between the child's weight at birth and malnutrition indicators.

This doesn't mean that the other social and economical characteristics have nothing to do with it. Previous studies on the subject stress the presence of such a relationship between social and economical indicators (such as income, mother's age, mother's education, place of residence, order of child in the family, sex of child, weight of child at birth ... etc.) and malnutrition indicators (low-weight, wasting, stunting). For examples, family wealth status was found in several health studies to be one of the most determinants of nutritional status of children. Result of one study conducted in one of the refugee camps in the occupied territories showed that stunting and wasting were considerably higher among the poor . About 42.5% of the poor were stunted, compared to 28% of the middle class and 25.4% of the rich (Rizkalla, 1991). Another study was conducted in Switzerland in 1985. Its results showed that families with more than

three children had more stunting than those with only one or two children. Also a study conducted in Ain-Dyuk in the West Bank showed that increase in the years of education of the mother is strongly associated with decreasing the prevalence of malnutrition (Al-Saifi, 1994).

Chapter VI

Conclusion & Recommendation

6.1 Conclusion

In this study, the researcher has used convenient sample knowing that there were some limitations. Because of this, the result couldn't be generalized to the total population. It reflects an orientation about East Jerusalem children aged (9-18 months). This study may form a good basis for conducting larger scale studies in East Jerusalem.

Also, the nutritional status of 300 children aged (9-18) months was assessed by examining height / age, weight/ height, weight / age and level of HB. Data were collected over a period of two month (July- August, 2003) in five clinics in East Jerusalem. The research analysis showed a vast variation in the result. These results might be influenced by the following:

- 1- The sample size was small and consisted only of 300 children. It represented one district only (Jerusalem district) not all Palestine.
- 2- Inadequate family planning led to an increase in the family size, thus minimizing the opportunity to meet all member's needs in the family.
- 3- Inadequate surveillance system in order to assess and monitor the status of anemia, absence of health promotion and health education for the mothers.
- 4- The children age in this sample (9-18) months is a critical period in which child starts depending on solid food besides breast- feeding. The type of food that the mother prepares should contain high amount of iron, vitamins, calcium. Other studies discuss nutritional status of children (1-5) years, or a wider period than (9-18) months. The percentage of stunting in this study

(14.2%) is too high. In comparison with other areas, it might be affected by age group.

6.2 Recommendations

Based on the result of this study, the following recommendations are listed. They might help in planning strategies for improving nutritional status for the Palestinian children:

- 1- Develop surveillance system in order to assess and monitor the hemoglobin status of children.
- 2- Encourage the utilization of mother and child health services (well baby clinic) because not all children are getting advantages of these services.
- 3- Use the anthropometric measurement for weight and height for regular surveillance of nutritional status.
- 4- Develop health education programs for mothers, especially those who marry early and with limited education.
- 5- Promote health services especially in rural area.
- 6- Do nutritional counseling for mothers of under five years old children in order to decrease the prevalence of anemia among this age group.
- 7- Stress on the data within the records in the clinics to be carefully completed.

8- Finally, the result of this study is not generalizable because of the sample size and the selection sample. So, other studies in the future may be conducted with a larger sample size that could present results with general implications.

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Appendices

الاستبانة

بسم الله الرحمن الرحيم

أنا الطالبة منال صلاح، طالبة ماجستير تخصص "صحة عامة" في جامعة النجاح الوطنية - نابلس - أقوم بإجراء بحث علمي حول صحة الطفل والسلوك الغذائي المتبع عند الأمهات لأطفالهن و العوامل المؤثرة عليه بين الأطفال الذين يقيمون في منطقة القدس الشرقية و المترددين علي مراكز الأمومة و الطفولة و التي ستقدم كرسالة ماجستير للجامعة. أقدم شكري لكل أمهات الأطفال اللواتي سيشاركن في هذه الدراسة.

لذا نأمل تعاونك معنا لتعبئة الاستمارة المتعلقة بالموضوع سيما وأنها تأخذ من الوقت ما يقارب الـ (25) دقيقة، ويحق لك الانسحاب في أي وقت، خاصة وأن المشاركة في هذه الاستمارة طوعية، والمعلومات التي سيتم الحصول عليها هي لأغراض البحث العلمي فقط، وستعامل بسرية.

تعليمات لإجراء المقابلة :-

- 1- عرفني عن نفسك و اشرحي بشكل مبسط هدف الدراسة.
- 2- أكدي للأم بأن أجوبتها ستعامل بسرية، و ستستخدم لأغراض البحث العلمي فقط.
- 3- أوضحي للأم بأن المقابلة ستستغرق فترة زمنية ما بين 20 - 25 دقيقة.
- 4- فسرى للأم بأن مشاركتها طوعية، و يحق لها الانسحاب في أي وقت تشاء.
- 5- أكدي للأم بأنه لا يوجد إجابات صحيحة و إجابات خاطئة.
- 6- أوضحي للأم بأن هنالك جمل الإجابة عليها من خلال اختيار ما بين 4 أو 5 خيارات.
- 7- لا داعي لذكر اسم الأم.

منال صلاح

طالبة ماجستير/ جامعة النجاح الوطنية - نابلس (2003)

- 1- جنس الطفل
(1) ذكر (2) أنثى
- 2- تاريخ الميلاد (العمر بالأشهر) :
- 3- ترتيب الطفل بين اخوته الأحياء:
- 4- أجريت المقابلة مع :
(1) الأم (2) الجدة (3) أخت الزوج (4) غير ذلك
- 5- مكان الإقامة :
- 6- عمر الأم الآن بالسنوات :
(1) أقل من 18 سنة (2) 19-22 (3) 23-26
(4) 27-30 (5) 31- فما فوق
- 7- القرابة بين الزوجين :
(1) درجة أولى (2) درجة ثانية (3) غير أقارب
- 8- عدد مرات الحمل :
- 9- عدد الأطفال الأحياء :
(1) 1-3 (2) 4-6 (3) أكثر من 6
- 10- وزن الطفل عند الولادة :
(1) أقل من 2.5 كغم (2) 2.5-4 كغم (3) أكثر من 4 كغم
- 11- المستوى التعليمي للأم :
(1) دون الصف التاسع (2) من 9-12 (3) جامعي فما فوق
- أسئلة تتعلق بالوضع البيئي للعائلة :
- 12- عدد غرف المنزل ما عدا المطبخ :
- 13- مصادر المياه :
(1) حنفية (2) نبع (3) بئر (4) غير ذلك
- 14- دورات المياه :
(1) موجودة داخل المنزل (2) خارج المنزل (3) مشتركة (4) غير موجودة
- 15- هل يوجد مطبخ خاص منفصل :
(1) نعم (2) لا
- 16- الكهرباء :

(1) متوفرة (2) غير متوفرة

أُسئلة تتعلق بالوضع الاقتصادي للعائلة :

17- هل تعمل الأم خارج البيت ؟

(1) نعم (2) لا

إذا كان الجواب نعم :

هل العمل (1) مأجور (2) غير مأجور

18- عمل الأب :

(1) موظف (2) مهني (3) مزارع (4) عاطل عن العمل (5) غير

ذلك

19- دخل الأسرة :

(1) أقل من 1000 (2) 1000-2000 (3) 2100-3000

(4) 3100-5000 (5) أكثر من 5000

20- عدد الأفراد الذين يسكنون في البيت :

مقاييس تخص الطفل :

21- نسبة هيموجلوبين الدم :

(1) أقل من 9 (2) من 9-11 (3) أكثر من 11

22- وزن الطفل :

23- طول الطفل :

أرجو الإجابة على هذه العبارات بوضع علامة (x) حسب درجة موافقة الأم

العوامل المؤثرة				درجة الموافقة			
				دائماً	أحياناً	نادراً	لا ينطبق
24	تعرضت لمشاكل صحية أثناء حملي لطفلي						
25	أدخن السجائر خلال فترة حملي بطفلي						
26	أدخن النرجيلة خلال فترة حملي بطفلي						
27	توفي أحد أفراد أسرتي خلال فترة حملي بطفلي						
28	انفصلت عن زوجي أثناء فترة حملي بطفلي						
29	فصل زوجي عن عمله بعدة أشهر أثناء فترة حملي بطفلي						
30	فرض منع التجول في منطقة سكني أثناء فترة حملي لطفلي						
31	تعرضت لمشاكل صحية بعد ولادة طفلي						
32	أرضعت طفلي من صدري بعد الولادة مباشرة						
33	أرضع طفلي رضاعة طبيعية						
34	أرضع طفلي رضاعة صناعية						
35	أعطي طفلي غذاء مساعداً						
36	أعطي طفلي حليباً جافاً						
37	أعطي طفلي حليباً طازجاً من مصدر (غنم ، بقر)						
38	أعطي طفلي حليباً مبسترأ						
39	أتقوم بغلي الحليب قبل إعطائه لطفلي						
40	أقوم بإضافة الماء للحليب الطازج						
41	اعتمد المعلقة كمقياس الحليب الجاف عند تحضيره لطفلي						
42	اعتمد التدريج (سم3) عند تحضير الحليب الجاف لطفلي						
43	أعطي لطفلي طعاماً مساعداً إلى جانب الرضاعة الطبيعية عندما أكون مريضة						
44	أعطي لطفلي طعاماً مساعداً إلى جانب الرضاعة عند مرض طفلي						
45	أعطي لطفلي طعاماً مساعداً إلى جانب الرضاعة الطبيعية لأنني امرأة عاملة						

46	أقوم بإيقاف الرضاعة الطبيعية إذا كنت حاملاً			
47	أعطي طفلي طعاماً مساعداً عندما يرفض الرضاعة من صدري			
48	أعطي لطفلي طعاماً مساعداً لأنني تعبت من الرضاعة الطبيعية			
49	أعطي لطفلي طعاماً مساعداً إلى جانب الرضاعة الطبيعية لأن طفلي لا يشبع من الرضاعة			
50	أعطي لطفلي طعاماً مساعداً إلى جانب الرضاعة الطبيعية لأن طفلي كبير جسمه ، بحاجة لغذاء آخر غير الحليب .			
51	أعطي لطفلي طعاماً مساعداً لأن حليب صدري جف			
52	ألمس زيادة في وزن طفلي عند إعطائه طعاماً مساعداً إلى جانب الرضاعة الطبيعية			
53	ألاحظ أن طفلي يتوقف عن البكاء عند إعطائه طعاماً مساعداً			
54	أعطي لطفلي طعاماً مساعداً عندما ألاحظ أن إدرار الحليب غير كاف			
55	أعطي لطفلي طعاماً مساعداً لأن الآخرين نصحوني بذلك			
56	ألاحظ أن حجم صدري صغير مما يجعل حليبي غير كاف للطفل فأقوم بإعطائه طعاماً مساعداً			
57	أعطي لطفلي وجبة من الحبوب إلى جانب الرضاعة الطبيعية			
58	أعطي لطفلي وجبة من الخضار إلى جانب الرضاعة الطبيعية			
59	أعطي لطفلي كمية من اللحم /الدجاج/السّمك إلى جانب الرضاعة الطبيعية			
60	أعطي لطفلي بيضة يومياً			
61	أقوم بإعطاء طفلي الشاي			
62	أقوم بإعطاء طفلي العصير			
63	أقوم بإعطاء طفلي البابونج واليانسون قبل 6 أشهر من عمره			
64	أعطي لطفلي جرعات من الحديد الذي يصفه لي الطبيب.			
65	أعطي لطفلي فيتامين (أ+د)			
66	الأمراض التي أصيب بها طفلي هي أمراض غير مزمنة			
67	الأمراض التي أصيب بها طفلي هي أمراض مزمنة			

68	يأخذ الطفل التطعيمات حسب العمر				
69	يصاب طفلي بالإسهال على الأقل مرتين في الشهر				
70	يصاب طفلي بالتهابات تنفسية حادة على الأقل مرتين بالشهر				
71	أصيب طفلي بديدان شعرية				

أرجو الإجابة على هذه العبارات بوضع علامة (x) حسب درجة الموافقة .

العوامل المؤثرة					درجة الموافقة				
					موافقة بشدة	موافقة	لا أعلم	غير موافقة	غير موافقة بشدة
72	الطفل لا يكبر بصورة طبيعية عندما تقل شهيته للأكل								
73	الطفل لا يكبر بصورة طبيعية عندما لا يزيد وزنه								
74	الطفل لا يكبر بصورة طبيعية عندما تكون حركته غير عادية (قليله)								
75	على الأم التوجه إلى الطبيب أو مراكز الأمومة و الطفولة عندما تلاحظ شحوب وجه الطفل								
76	على الأم التوجه إلى الطبيب أو مراكز الأمومة و الطفولة عندما تلاحظ أن حركته ضعيفة								
77	على الأم التوجه إلى الطبيب أو مراكز الأمومة و الطفولة عندما يصاب الطفل بالإسهال بكثرة و بشكل متكرر								
78	على الأم التوجه إلى الطبيب أو مراكز الأمومة و الطفولة عندما تلاحظ و جود بقع بيضاء على أظافر الطفل								
79	أعتقد أن طول أبنني يميل إلى القصر لأن أحد الوالدين قصير								

جامعة النجاح الوطنية

كلية الدراسات العليا

العوامل المؤثرة في وضع التغذية عند الاطفال من عمر 9-18 شهر في القدس الشرقية

اعداد

منال جميل احمد صالح

اشراف

د. عبيده قمحية و د. اسمى امام

قدمت هذه الأطروحة استكمالاً لمتطلبات درجة الماجستير في العلوم البيئية بكلية الدراسات
العليا في جامعة النجاح الوطنية في نابلس، فلسطين

2004

العوامل المؤثرة في وضع التغذية عند الاطفال من عمر 9-18 شهر

في القدس الشرقية

اعداد

منال جميل احمد صالح

اشراف

د. عبيده قمحية و د. اسمى امام

الملخص

تعتبر الأنيميا وسوء التغذية عند الأطفال من أكثر المشاكل الصحية انتشاراً في العالم وكذلك في فلسطين، لذلك تم إجراء هذا البحث لتسليط الضوء على مشكلة الأنيميا وسوء التغذية عند الأطفال في الفئة العمرية (9-18) شهراً وقد تم إختيار العينة من الأطفال والأمهات الذين يترددون على العيادات والمراكز التالية في منطقة القدس الشرقية وهي الهلال الأحمر الفلسطيني ، وكالة الغوث وتشغيل اللاجئين (عيادة الزاوية الهندية / وعيادة مخيم شعفاط)، المقاصد الإسلامية الخيرية ومركز سبافورد للأطفال وقد تم دراسة تأثير العوامل الديموغرافية والاجتماعية الاقتصادية على الواقع الغذائي ونسبة انتشار فقر الدم بين الأطفال.

تم جمع البيانات بواسطة فريق يضم 12 باحث ميداني في الفترة الزمنية الواقعة ما بين شهر (7-8) عام 2003، وذلك من خلال المقابلة مع أمهات الأطفال للإجابة على إستمارة أعدت خصيصاً لغرض الدراسة ، كذلك تم جمع البيانات التي تتعلق بالأطفال (كالطول، الوزن) من الملف الخاص لكل طفل كذلك تم إجراء فحص نسبة الهيموجلوبين لكل طفل أيضاً .

أهم النتائج التي تم التوصل إليها من خلال الدراسة: 41.4% من الأطفال لديهم أنيميا وأن نسبة الأنيميا أعلى عند الإناث 42.3% منها عند الذكور 41.2%، 8.5% من الأطفال لديهم هزال وأن نسبة الهزال أعلى عند الذكور 10.1% منها عند الإناث 8.5%، 14.2% من الأطفال

ت

لديهم تقزم وأن نسبة التقزم لدى الذكور 16.3% أعلى منها من الإناث 11.6%، 9.6% من الأطفال لديهم نقص وزن بالنسبة لأعمارهم وأن نسبة نقص الوزن عند الذكور 10% أعلى منها عند الإناث 9.1%.

أظهرت نتائج هذه الدراسة أن سوء التغذية (الأنيميا ، نقص الوزن ، التقزم والهزال) تعتبر من أهم المشاكل الصحية في سن الطفولة المبكر لذلك من أهم التوصيات التي يمكن العمل بها : التركيز على برامج التنظيف الصحي والغذائي لدى الأمهات وكذلك تطوير برنامج مسح منتظم لتقييم نسبة الهيموجلوبين لدى الأطفال .