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Breastfeeding Patterns And Practice Among Women In The North Of Gaza

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Declaration

I Certify that this thesis submitted for the degree of Master is the result of my own research , except where other acknowledgement ,and that this thesis (or any part of the same) has not been submitted for a higher degree to any other university or institution .

Signed .....

Said Mohammed Ibraheim

Date ....18.-.5.-.2005...

Chapter One

Introduction

Introduction

In recent years, attention has been given to breast feeding, because of its importance and benefits for both of the infant and his mother who are considered as main supports of any community in all countries in the world, the literature indicates that all countries in our different world are focusing now on this perfect kind of nutrition.

The majority of breast feeding studies has been conducted in developed countries or conducted in the developing and undeveloped countries under the supervision of the researchers and agencies of the developed countries as the literature said (14).

Breastfeeding importance, patterns and practices, factors impeding or disrupting the breast feeding and the wide benefits included in the literature heightened the need of focusing on the breast feeding in our Palestinian community which has no more studies or information about the breast milk and its substitutes.

This study is considered as one of the few initiatives in field of breastfeeding, and the researcher hope it to contribute in developing the patterns and practicing of the breast-feeding and minimizing the disrupting factors, which leads to early weaning or discontinuing of the breast-feeding.

1.1. Justification of the study

In all countries, breastfeeding is the best type of feeding for infant particularly during the first six months of the Childs life, because it provides the baby with the essential nutritional requirements (20). Breast milk contains anti-bodies against a large number of common infections, therefore, the pattern and duration of breastfeeding are some of the most important determinants of the Childs health status (67).

Several reasons were offered explaining the differences in the child's age at weaning.

For babies weaned before the age of six months, the main leading factor is mother's insufficient milk or baby's refusal to breast-feed (1).But for children weaned at the age of 6-11 months, the main reasons are the child's refusal and mother's pregnancy. The main reason behind weaning children of the age of 12 months or older is mother's belief that the child has reached the weaning age (1) .

In our country Palestine the initiation rate of breastfeeding lies between 95% and 98% while the continuation of exclusive breastfeeding lies between 23%and 47.2% for six months after delivery (55,56) ,so, the study aimed to increase the proportion of mothers who breast-feed their babies in the early postpartum period and proportion of mother's who continue breastfeeding exclusively until their babies reach 6 months old (2)

Hence, assessing the level of breastfeeding and the disrupting factors affecting it and the responsibilities of the health professionals and the ministry of health leads to improving the breastfeeding level and minimizing the disrupting factors.

This target could be also achieved by developing the patterns and practicing of breastfeeding in our Palestinian community and avoiding the disruptive factors which leads to healthy mothers, infants, families and society.

1.2. Objectives

General objectives

To identify the breastfeeding patterns and practicing in the North of Gaza strip and the main disrupting factors.

Specific objectives

1-To describe the breastfeeding patterns among women in the North of Gaza

2-To determine the initiation and continuation rates of breastfeeding

3-To identify factors affecting the breastfeeding and the problems that impede the practicing of breastfeeding.

4-To suggest strategies that could improve breastfeeding practice.

5-To suggest ideas for decision makers and health professionals to improve the breastfeeding status in the Palestinian community.

1.3. Context of the study

1.3.1. Geographic context of Gaza

Gaza strip lies on area of 362 square kilometers, surrounded by the occupied Palestine from the two east and north boundaries, Egypt and the Mediterranean Sea from south and west as shown in (appendix 4).

Gaza strip is 50 kilometers long and 5-12 kilometers wide and attitude of 0-40 meters above the sea level (3).

Gaza strip consists of five provinces: Rafah –Khanyounis- Mid zone –Gaza-and North. Also, Gaza strip includes 10 towns, 8 refugee camps and 14 villages (appendix 5).

1.3.2. Demographic context

The population in Gaza strip and West bank was estimated as (3,737,895) about 1,370,345 residing Gaza strip and 2,367,550 are residing in the West Bank with density rate of 3,806.5 inhabitants /one square kilometer (4) .

The population in Gaza strip is distributed as follows: Over 15.6% reside in the north, 38% in Gaza city, 14.1% in the central area and 32.3% in the south. About 1, 592,189 of the population in The West Bank and Gaza are specified as refugees served by UNRWA , about 65.5% of them are residing in Gaza and about 29.4% resides in the West Bank (5).

The majority of population in Gaza strip is under 15 years old 49% (Appendix 6). The average life expectancy of the Palestinian population was 72.3 years (73.8 for women vs. 70.7for men) (4) .

The natural population growth rate declined noticeably in Gaza strip from 3% in 2000 to 2.6% in 2001as population density in Gaza is one of the highest ones in the world (4).

Another character of the population in Gaza strip is the dependency rate, which is reported to be high (107.8%) (*young population*) while only 5.5% of women having jobs compared with the surrounding and neighboring countries, Syria 84%, Jordan 82% and Egypt 68% dependency rate. This means that the workers are under heavy load to support their Dependents (6).

Another indicators of the Palestinian population are the birth and death rates . The average crude birth rate in Gaza strip was 33/1000 in 1999, The north was the highest one of 36.6/1000, while Khanyounis was 30/1000 live birth (7).

As for fertility, the Palestinian community has a high rate, with total rate of 5.2 (5).

Women of pregnancy age (15-45) form 21% of the total population of the strip (3). It is useful to remember that the mortality rate a among infants are 25.2 in the West Bank and 30.2 in Gaza strip (3) we have to add that the marriage age in the Palestinian females is before the age of 21(3). Maternal mortality among women aged 15-49 years was

18.6/100,000 in the year 2001 and such rate should be reduced according to the National Health plan (4) .

1.3.3. Socio economic status

After the peace treaty was signed by the Palestinian liberation organization and government of Israel in 1993, and the establishment of the Palestinian national Authority (PNA) in the Gaza strip and West Bank in 1994.

The people of Palestine breathed deeply after 27 years at the blooded struggle and have great expectations for the future, but their dream crashed down to the sea, when they found themselves under harder Israeli measures which lead to Al aqsa Intifada which is continued till now2004.

The Israelis still holding overall sovereignty over the Gaza strip and the West Bank including all the vital facilities which matter the Palestinian style of life such as:

Borders, movement and travels in and out, controlling commercial market and trade, export (internal and external), Water sources, electricity, communication …etc.

The paid employment is the basic source of the household income; the most of the Palestinian labor force continue to work in Israel with fewer wages, because of the lack of work opportunities in Gaza strip and West Bank.

Recently there has been a sharp drop in the income from working into the green line because of the closure policy of the Israeli army frequently.

The economic situation went worse after the Israeli military reoccupation of the West Bank and Gaza strip in the last four years 2001- 2004 (Alaqsa Intifada) in which all the Palestinian infra structure was demolished by the Israeli air force, tanks and bulldozers

Thousands was killed and injured, hundreds of houses were exploded, thousands of fruitful trees were destroyed and thousands of people was scattered here and there.

In addition all the PNA security headquarters and some of the civilian centers were bombed by the Israeli artillery and air force, these factors make the Palestinian economy more complicated and needs more and more to be reformed.

Another factor which deteriorates the Palestinian economy was the gulf war and the delay of the financing assistance from donor states to the PNA. In spite of the bad conditions of the Palestinian people the daily life expenses are the same of the Israelis, both of them has the same commercial market, for the same price despite the high purchasing power of the Israeli community.

The gross national product per capita /year for Israel in US $ 14,530 compared to 1726 for Palestine in the year 1997, but an increase in the Palestinian GNP was recorded in the year 1998 (1938.6 US$) and decreased again in the year 2000 to 1771.5 US$ (4, 6) .The areas under the PNA sovereignty are of slow economic growth and high inflation rate. The unemployment considered as a critical issue in the Palestinian socio economic status (6).

More important to mention that the productive age group (19-60 years) forms 36.4 of the population of which the half are women. As for education which has a special value in the Palestinian community, it is seen as a source of gaining social standing and economic well–being. The literacy rate for Palestinian people is 84, 9% for male and 78.6 for female (9).

Small family and extended family are the units of the Palestinian society; the extended is more predominant in Gaza strip. Both of them are suffering from the population growth.

Palestine suffers from serious population growth problem that affects the socio economic development of individuals, the community and the country (10).

1.3.4. Health status

After the occupation of most of Palestine by the Israelis in 1948, Gaza strip became under the Egyptian administration and the West Bank to Jordan until 1967 war, All Palestine including Gaza strip and West Bank became under the Israeli occupation. As a result of the Israeli aggression and the uprooting of the Palestinians from their land, hundreds of thousands of the Palestinian refugees was distributed over Gaza strip and West Bank, while the others was dismissed to the surrounding Arab countries, Some thousands who refused to leave under the Israeli terrorism, still living inside the Historic Palestine (Israel) (11).

The UNRWA began its work to give emergency assistance to the refugees. Health program for refugees has been instrumental in protecting, preserving and promoting the health of the Palestine refugee community (12). Such program was implemented with cooperation with the existing authority(Israeli or Egyptian administrations) .

The UNRWA health program aimed mainly to protect, preserve and promote the health status in the Palestinian refugee camps according to WHO principles and concepts, and standards of public sector health services in the region .The Israeli civil administration was responsible of providing health services to the Palestinian people in the occupied territories.

The non-governmental organizations (NGOS) play important role in health care system in Gaza strip and West Bank. After the establishment of the Palestinian national authority

(1994), it substitutes the Israeli civil administration in responsibilities of providing health services to the Palestinians in Gaza strip and West Bank on 17 may 1999. Since then, ministry of health at the Palestinian national authority began to work to continue providing of services and to rehabilitate existing systems, equipments and infrastructure. The main providers of health services in Gaza strip are the MOH, UNRWA, NGOS and the private for profit service providers (7).

Health services are provided to the Palestinians in the primary health care Centers and the secondary health care facilities. MOH operates 35 PHCCs in Gaza and 300 in the West Bank. They provide first line diagnostic and treatment, as well as prevention, such as immunization, school health, dental services and well baby care including pre-and post natal in some centers. UNRWA also operates 51 PHCCs, 34 in West Bank and 17 in Gaza providing also MCH services (8). In the last four years (2001-2004) during Alaqsa Intifada all the PNA systems was affected by the frequent Israeli reoccupation and the military actions against both of Gaza strip and West Bank .

The health system declined sharply according to the lack of financial support, and the movement difficulties to and from the isolated areas and the carfewed villages and cities in Gaza strip and West Bank (13).

However the quality of health services in Palestine is not comfortable among health professionals, public and the decision makers. The nutritional status also affected by the recent Israeli aggression which destroyed the agricultural infrastructure and the fatal constraints on the Palestinian goods

1.3.5. Study limitations

The researcher's place of living gave him more flexibility to face fewer limitations. However, some limitations were existed:

- Lack of resources and materials especially for the surrounding countries about the study of concern.

- The threats of Israeli invasions to Biet hanoun and Biet lhia led the researcher to more difficulties.

- Mothers with crying infants, make it more difficult to listen and write.

- The crowdness also led the interviewer to change place more than one time to be with mothers alone.

Chapter Two

Literature review

Literature review

2.1. Overview

Feeding in general is of great importance, it is a “must” to meet nutritional as well as emotional and psycho logic needs of the infant.

The basic food for infant feeding is milk, and the breast feeding is the most natural method.

The modern concept allows considerable flexibility, but certain general principals of infant feeding have got to be respected. That because infant feeding practices show a considerable variation on more than one front.So, breast milk is decidedly superior to other milks, therefore, it deserves encouragement at least for first 4 months and preferably for 6 months to 12 months,and when mother is not able to supply enough proteins from outside, she should be allowed to continue more (14).

Extensive researches , especially in recent years, documents diverse and compelling advantages to infants, mothers, families and society from breastfeeding and the use of human milk for infant feeding (15) .

These include health, nutritional, immunological benefits. Breast milk is uniquely superior for infant feeding and is species-specific; all substitute feeding options differ markedly from it. The breastfed infants is the reference or normative model against which all alternatives feeding methods must be measured with regard to growth, health, development, and all other short and long term outcomes(15) .

Epidemiologic research shows that human milk and breastfeeding of infants provide advantages with regard to general health, growth, and development, while significantly decreasing risk for a large number of cute and chronic diseases (15).

In some developed countries, the rate of breastfeeding has increased since 1970s. Korea however has seen a gradual and steady decline in breastfeeding, reaching its lowest level of 16.9% in 1999 (14).

The breastfeeding rate in the United States declined from a peak of 60% in 1984 to a low of 52% in 1991, slowly rebounding to only 56% in 1993 (16), Unlike the trends found in western Europe and the united states, in Korea the decrease in breastfeeding occurred among the women with better education. According to brown's policy statement " the promotion of breastfeeding outlines the education steps, change in formula advertising in hospital and processional practices, and the need for environmental and occupational support systems that will encourage more women to breastfeed" (17).Breastfeeding promotion is one of the objectives of healthy people 2000 and national health promotion and disease prevention (18).

Health care professionals have a vital role and responsibility to promote breastfeeding among all women and thus establish breastfeeding as societal norm for infant feeding (19). Breastfeeding remains the best food for the proper growth and development of the infant, it is often cited advantages especially prevalent to the developing countries include infection properties, nutritional superiority over animal milk, low cost, free of contamination, contraceptive effects and psychological benefits (20). In the early 1970s a declining trend in the prevalence of breastfeeding was documented in almost every country of the world (21). Recent studies in India have also shown a declining trend in breastfeeding especially in the urban areas (22, 23, 24). Recently, there has been a stress on exclusive breastfeeding for the first four to six months of life in India (24, 25, 26).

In Macedonia and Kosovo, which was undergoing an armed conflict, there was sharp decline in the breastfeeding rate, As a result of concerns expressed about using infant formula and the need for more information regarding weaning practices during and after the conflict in Kosovo, action a against hunger was done to examine infant feeding practices in the area and found that some a aspects of infant feeding were extremely poor (27). In the year 1999 a study revealed that12.2% of children were breastfed exclusively until 4 months (28). More recently, another study revealed also that 25.6% of breastfeeding mothers did not continue feeding past 3 months, during the recent Kosovo crisis.

Survey in Macedonia refugee camps found that 23% of infants less than 4 months received neither breast milk nor a suitable breast milk substitute (29).

Throughout human history, mother and child have entwined their sleep habits. Even today, most of the world's cultures Practice some parent- infant co-sleeping.

But North American culture undermined breastfeeding when separated sleep and nighttime breastfeeding. In the United States parents generally focus on getting baby to sleep through the night on his own within just a few weeks, and breastfed infants are less likely to do so at such an early age, infants who are fed artificially eat less frequently because formula, usually based on cow's milk, forms rubbery curds in the infant stomach, causing or promoting the early cessation of breastfeeding". If more mother's elected to sleep in the same bed as their infants, arising for feedings in the middle of the night would be no more effort than rolling over and pulling baby close to nurse(30).

Baby and mother can both drift off to sleep together and get a good night's rest. Sleep patterns of breastfed infants vary greatly from the sleep patterns of bottle fed infants.

Breastfed infants typically begin sleeping through the night at a later age and wake frequently through the night. So breastfeeding mothers may be tempted to change their feeding regimen to let him to feel full longer.

Thus, artificially fed infants have longer meal intervals, which may result in longer period of sleep, "the mother's need for an uninterrupted night's sleep may order to get their infants to sleep through the night, at an earlier age is quoted as one of the advantages of formula-feeding.

In a study of mother-infant pairs when the infants were 3-4 months old, infants who routinely slept in the same bed as their mothers nursed approximately three times longer during the night than infants who routinely slept separately (30). The number of nursing episodes was doubled and the duration of breastfeeding episodes was 39 % longer in the mother-infant pairs who slept together .These findings are significant to breastfeeding success, because frequent nursing, especially at night, promotes an abundant milk supply, and low milk supply is the most common reason women give for quitting nursing (30).

In Malaysia a cross sectional community based study was conducted in semi urban low cost housing area in hula langat, selangor, to determine the association of knowledge, attitude of mothers and infant feeding practices with socio-cultural factors and nutritional status of infants 0-12 months of age. All households with infant aged 1-12 months old were included. One hundred and thirty-seven mothers were interviewed using a structured questionnaire. Initiation of breastfeeding was practiced by 68.6% of mothers, when the infants reached the age of two months, 19% of mothers stopped giving breast milk (31). The majority of the respondents practiced mixed feeding despite the fact that most of them were non-working (66.4%).

The prevalence rate of breastfeeding was especially low (25.8%) among the 20-29 age groups of mothers (31).

In Libya the Arab country, a study was conducted in Benghazi, it was a community health study based on cross-sectional study design of 214 mothers (having babies between 12 to 23 months) during the months of June and July in 1996. Majority of the women included in the study were educated (93%), between ages of 25-34 years (54.7%) and were of Para 1-3 (52.3%). Regarding feeding patterns the rates of ever and exclusive breast feeders till 4 months per 100 women respectively were 83.2 %and 49.1%, and the rate of breastfeeding for 6 or more months was 24.8/100 women .Weaning was completed within 6 months by 13.1%, between 7-11 months by 56.5% and between 12-23 months by 30.4% women, The type of weaning food was mostly local and home made (64.5%) compared with the practice of using commercial foods by 35, 5%. The maternal characteristics of age, parity and educational status revealed no obvious influence either on ever or exclusive breast-feeding practices (32).

In West Bank and Gaza strip, in spite of considering breastfeeding as the best type of feeding for infants, particularly during the first six months of the child's life, the pattern and duration are some of the most important determinants of the child's health status (33).

Breast-feeding also is a very common practice in the West Bank and Gaza strip, as emphasized by the survey findings. In the five years preceding the survey, about 96% of children were breastfed for an average of 11.1 months which nevertheless tends to increase among children in Gaza strip.

Moreover, male children have longer duration of breastfeeding (with one month in average) than female, but the average duration of breastfeeding generally tends to decrease with increase in mother's educational level (33).

In Palestine the initiation of breastfeeding was not problem, its rate lies between 95% and 98% while the continuation of exclusive breastfeeding lies between 23%and 47.2% for six months after delivery (55, 56)**,** and need more efforts to increase it.

2.2. Exclusive breastfeeding

WHO recommends that breastfeeding exclusively should be continue between the fourth and sixth month (31).

Exclusive breastfeeding for about six months is increasingly being shown to be central to infant health and even maternal health, in part due to its impact on birth spacing. Previous researches has too often been based on an inadequate definition of exclusive breastfeeding ,and thus has underestimated its importance .The best definition of exclusive breastfeeding is breastfeeding without any additions for at least four to six months of life, even the giving of the glucose water soon after delivery is unnecessary and harmful practice (34,141).Using the beast definition of breastfeeding researchers had discovered numerous health problems connected to the failure of breastfeeding exclusively even in industrialized countries (35,36).

Researchers also added that there was fairly good evidence that, apart from the effect of any abandonment of breastfeeding on the health of young infants, women's employment is not associated with reductions in child health and nutritional status (37).

In order to understand the importance of the exclusive breastfeeding, an overview on exclusive breastfeeding initiation and duration in some industrial and developing countries should be introduced according to the findings of numerous studies which were conducted in many countries in the world in the years 1997-2002 such as:

Europe: The maximum initiation and duration for 4 - 6 months is practiced by Luxemburg mothers. The percent of initiation and duration for 4 -6 months were 88, 54% respectively ,while Ireland (North) scored the lowest percentage in both initiation and duration of exclusive breastfeeding 31-54% , 14 % for 4 –6 months (38,40). In the mean time UK and Italy lied in between the two mentioned countries with percentage of 69, 21% and 85, 19% respectively (39,41) .

Latin America and the Caribbean: Bolivia were found to be the best in those countries in practicing breastfeeding for initiation and continuation of exclusively breast feeding with percent 97% initiation and 50% for 4-6 months (38). The Haiti mothers had reasonable initiation percent of 96%,but the percent of exclusive breastfeeding continuation declined sharply for the first 4 - 6 months to reach the lowest percent of 2% only , mean while countries like Brazil , Dominican Republic Belize , Elsalvador , had initiation percent of 90+% and continuation range of 15 –29% for the first 4 -6 months (38).

Asia: China seems to be more interesting in the breastfeeding field than the others in Asia with percent of 95% initiation and 64% exclusive breastfeeding for 4 months after birth (4 2), followed by Bangladesh, India, and Indonesia with percentages of 97, 45% and 95, 43% and 96, 42% consequently. Thailand and Pakistan were approximately

similar of percent of 97, 24% and 94, 23% respectively for initiation and duration of exclusive breastfeeding for the first six months (38, 40).

Middle east and North Africa: Iran and Egypt had highest indicators of initiation and duration of exclusive breastfeeding for first six months among the group of Middle east and North Africa countries with percent of 98, 56% and 95, 56% respectively, while Tunisia remained in the lowest level of practicing breastfeeding exclusively with percent of 94, 5% for 4-6 months after birth. Some of the rest of countries in this group such as Oman, Yemen, Syria, Lebanon, Turkey had initiation percent of 92+% except Lebanon 88% ,and continuation percent for 4 -6 months after birth lies between 10- 28% exclusively breastfeeding (38) .

Sub-Saharan Africa: Rwanda seemed to be the first country in the world in the field of practicing exclusive breast feeding, mothers initiate with percent of 97% and continue to 4- 6 months after birth with percent of 90%. Sudan, Niger, Chad, Central Africa Republic and Burkina Faso had shameful reduced percentages in exclusive breastfeeding for 4 - 6 months 1- 5%, while Eritrea, Uganda and Madagascar had relatively acceptable exclusive breastfeeding percents for 4 - 6 months of 48 - 59%. Other counters like Benin, Cameron, Ghana and Mozambique had percents of 10-31% exclusive breast feeding for the first six months of infant age (38).

North America: USA and Canada are found to have noticeable reduction in initiating and continuing exclusive breastfeeding to the minimum recommended period with percents of 69.5 , 32.5 % and 72 , 31 % for 4 - 6 months of age (43 , 44).

Australia and New Zealand had percents of 87, 48 % and 93.8, 11 % respectively for initiation and continuation of exclusive breastfeeding (45, 46).

The above effort of the researchers over the world shows that the exclusive breastfeeding for the first six months of life needs more serious work to increase its percentage to reach the optimal breastfeeding status.

As for the neighboring countries: Egypt has made the promotion of breastfeeding one of its key strategies. One of its goals is to raise the exclusive breastfeeding rate to 80% by the year 2000 (47). In spite of the declaration of goals and targets, breastfeeding programs have seldom been assessed. This is because breastfeeding is practice carried out entirely by mothers, and its determinants are multiple and complex. Moreover, there are no quantifiable commodities associated with its practice. Hence it is difficult to define what should be measured and how to measure it. Further more ,assessing breastfeeding practices as an out come of promotional services is difficult as many breastfeeding services are integrated into maternal and child health and primary health care services (48). Survey on breastfeeding practices have been carried out in Alexandria in the year 1995 on the exclusive breastfeeding rate and the rate of timely introduction of complementary foods to infants. The survey showed that only 42.2% of infants below 4 months were currently exclusively breastfed, while 21.1% were predominantly breastfed. Hence the rate of breastfeeding was 63.3%. The prevalence rate of timely complementary feeding was 62.3% .Continued breastfeeding rate at 1 year was 64.4% and at 2 years was 39.9%. The bottle feeding rate (among infants less than 12 months) was 44.3%. The above study results in Egypt indicates that mothers practices related breast feeding are still not optimum ,and efforts should be made to change their behavior and reinforce healthy feeding practices (49).

Syria and Lebanon also had situation of 12% of exclusive breastfed infants for 6 months after birth (40).

In Jordan : UNISEF and WHO launched the Baby–Friendly Initiative in 1990,with support from world leaders, health experts and Nongovernmental organizations, to convince hospitals, health services and parents that breastfeeding gives babies the best possible start in life. In order to become baby friendly, hospitals and maternity centers should pass ten steps to reach successful breastfeeding developed by UNISEF and WHO, these steps include informing all pregnant women about the benefits of breastfeeding, helping mothers initiate breastfeeding within half an hour of birth and practice"rooming in" by allowing mothers and babies to remain together 24 hours a day. Jordan adopted the baby friendly hospital initiative in 1993, starting with the important hospitals in the Kingdom such as ALBashir hospital in Amman and Badia Hospital in Irbid which is the largest and the first hospital in Jordan to be certified as baby friendly.

Many information campaigns and work shops have been conducted in order to raise the awareness and commitment nationally. Jordan has also approved national breastfeeding policy and has prohibited the marketing of breast milk substitutes in all public hospitals Queen Noor chairs two-year old multi-sect oral national breastfeeding committee that ensures the successful implementation of the baby-friendly hospital initiative and the Jordanian code of marketing breast milk substitutes.

In Jordan the percentage of babies 0– 4 months exclusively breastfed is 53% and for children 6– 9 months, 48% are breastfed with complementary food, whilst at 20- 23 months, only 13% are still breastfed. The initiation rate of breastfeeding in Jordan was 94% and 27% initiate within the first hour after birth (50, 51).

Inside the Historic Palestine (Israel now) the breastfeeding status is summarized as follows: The number of hospitals / maternities officially designated by UNISEF as" Baby Friendly" were 28 hospital, but the number of these hospitals which fulfilled the ten criteria supportive of breastfeeding were 0 of total of 28, i.e. non of the designated hospitals had took any step toward "Baby Friendly" (52, 53).

Length of maternity leave: 12 weeks and length of parental leave: 1 year (54).

In our country Palestine, representative sample survey was conducted in the West Bank and Gaza Strip in the year 1991/1992 with objectives of measuring the knowledge, attitudes and practices of Palestinian mothers concerning feeding of children in the first year of life .The survey showed that 98% of children in their first month were breastfed, and this percentage declined during the first year of life to 53% of children being breastfed in their twelfth month. By the fourth month less than 50% of infants were predominantly breastfed (i.e. did not receive bottle milk or solids). Fifty one percent of children had solids introduced before the end of the fourth month, and 84% before the end of the sixth month. Ten percent 10% of children in their eight month had still not received solids .

The study showed also that 21% of children were bottle-fed in their first month and rose to 64% of children in their twelfth month receiving bottle milk. The study referred also to rare exclusive bottle feeding (55). In the year 1997 research was carried out in Gaza Strip including North and south areas. It was found that 96.1% of mothers began to breastfeed 95.7% North, 97.1% South, but after four months of age, 65.1% had introduced other liquids 59.9% North, 72.8% South, while 54.6% had introduced formula milk 52.6%North, 5.5% South, also 21.9% had introduced solids 6.6% North , 14.4% South .

The study showed also that the majority of mothers 70.8% received help to continue breastfeeding from grandmothers 64.5% North, 79.1% South.

The reasons of stopping or disrupting breastfeeding were shown as: "not enough milk"14.1%,"pregnancy"19.7%, and the same reasons also affect adding of formula (56).

In the year 2003 MARAM introduced a Household Baseline Health Survey (HBHS) confirmed that breast feeding in Palestine was universal, with 95% of infants in the years 2000, 2002. The survey also revealed that there was no significant variation in initiation of breastfeeding based on region or locality of residence and on mother's education (57)

2.3. Benefits of breastfeeding

2.3.1. On mothers

Breastfeeding establish healthy mother–child relationship, this is due to the psycho-physiologic interaction that occurs during the act of breastfeeding.

The mother derives much satisfactory and a sense of fulfillment from nursing her baby successfully (58).

Breastfeeding helps in spacing children since chances of conception in a lactating mother are less (59).

Incidence of breast cancers in such mother is relatively very little (60).

Breastfeeding also helps in slimming, which enables uterus to return to normal size drains a way extra fat accumulated during pregnancy (61). Improved bone remineralization, fewer hip fractures in later life, reduced risk of ovarian cancers (63, 64, 65). Increases levels of oxytocin, resulting in less postpartum bleeding and more rapid uterine involution (62, 66).

2.3.2. On infants

Human milk has a composition that meets the requirements of a small infant (58). It is always fresh and ready –made, requiring no preparation, it is at the right temperature, it is uncontaminated and aseptic and breastfed babies have 7 times less chances of an allergy (59, 60, 61).

Further important benefit of breastfeeding is found in the breast milk, it is a new protein which stimulates immune cells in babies to produce their own antibodies, and helps babies develop permanent immunity (67).

Breast milk protects against certain diseases such as, incidence and /or severity of diarrhea, lower respiratory infection, otitis media, Bactermia, Bacterial meningitis, Botulism, urinary trac infection, and necrotizing enter colitis. Possible protective effect of human milk feeding against sudden infant death syndrome, insulin dependent diabetes mellitus, Cohn's disease, ulcerative colitis, lymphoma, allergic diseases, and anther chronic digestive diseases, breastfeeding has also been related to possible enhancement of cognitive development (68).

2.3.3. Other benefits

In addition to individual health benefits, breastfeeding, providing significant social and economic benefits to the nation, including reduced health care costs and reduced employee absenteeism for care attributable to child illness.

The significantly lower incidence of illness in the breastfed infant allows the parents more time for attention to siblings and other family duties and reduces parental absence from work and lost income. The direct economic benefits to the family are also significant. It has been estimated that the 1993 cost of purchasing infant formula for the

first year after birth was $855, during the first 6 weeks of lactation, maternal caloric intake is no greater for the breastfeeding mother than for the no lactating mother (69, 70), but after that, food and fluid intakes are greater, but the cost of this increased caloric intake is about half the cost of purchasing formula.

Thus, a saving of >$400 per child for food purchases can be expected during the first year (71, 72).

2.4. The disrupting factors of breastfeeding

Studies showed that breastfeeding were affected by the patterns and practicing, socio-economic factors, religious factors, health status of both mother and infant, and environmental factors

2.4.1. Patterns and practicing

Patterns and practicing factor includes the following

2.4.1.1. Inexperienced mothers

A study revealed that not all mothers are good enough and well prepared for the newborn, some sadly want in self confidence and unsure as to how to handle the baby.

They worry too much and are very apprehensive. Their nervousness some how influences the baby. As result, he becomes more demanding and cries a lot which add further annoyance to the mother (60).

Such interaction lead to rather unhealthy relationship between the mother and the baby; and its observed very often in the case of young educated mothers who opt to live by one or to the other stereotyped handbook of baby care. They just try to blindly ape it rather than follow sound advice and their own judgment based on individual merits of the situation (73).

2.4.1.2. Mother's knowledge

In adequate mother's Knowledge of the advantages of breastfeeding practices and the reasons for introducing solid foods affects breastfeeding (74). In a study conducted in hulu langat selangor Malaysia about infant feeding practices and its relationship with nutritional status and socio- cultural factors in infant 0-12 months of age the study showed that the knowledge scores of mothers showed significant association between the weight for–age nutritional indicator of the infant (p value = 0.043).There was also positive significant association (p value = 0.014) between the education level of the mother and her knowledge related to breastfeeding patterns (31) .

2.4.1.3. Advice sources

A major barrier to successful in hospital breast-feeding is inconsistency in information and nursery practices related to breast feeding management.

Typically breast feeding support services are not research based and mothers receive conflicting advice from professionals and friends (75).

2.4.1.4. Sleeping pattern

Co-sleeping affects directly the breast feeding, so, sleep patterns of breastfed infants vary greatly from the sleep patterns of bottle fed infants. Breastfed infants typically begin sleeping through the night at later age and wake frequently through the night. Even in the popular press, sleeping through the night at an earlier age is quoted as one of the 'advantages' of formula feeding (68).

2.4.1.5. Delivery type

An uncomplicated birth facilitates breastfeeding, the incision from cesarean surgery is painful and the fatigue, discomfort, and pain-relieving drugs often make breastfeeding

difficult. In addition, increased self-esteem and reduced rates of depression make it likely that a woman will continue to breastfeed, although breastfeeding itself may be somewhat responsible for higher self-esteem, reduced depression, and increased attention for infant (68).

2.4.1.6. Hospital nurseries

Immediate mother infant contact after delivery directly correlates with breastfeeding success. The sooner after delivery mothers start breastfeeding, the more bonding is facilitated and the better the mother's milk supply and baby's weight gain (76).

The baby friendly hospital initiative, enacted in 1989 by the WHO and UNECEF in order to promote breastfeeding. This initiative provides ten guidelines such as giving the newborn only his mother's milk unless it is medically necessary to do otherwise, helping mothers initiate breastfeeding within a half hour of birth (68) .

2.4.1.7. Employment

Working women make fundamental decisions about breastfeeding based on when they go back to their work. A study conducted in USA in the year 1995, revealed that the women who work full time represented the lowest percentage of breast feeders, while the women working one to nine hours per week breastfed most frequently, comparing the daily work hours and breast feedings at infant ages three and six months, and the duration of both breastfeeding and leave from work. The researcher's findings was indicating that, about half 54 % of women who returned to fulltime work more than 34 hours a week within three months after giving birth had stopped breastfeeding. That compares to only 35 % of women who had not returned to work (81).

2.4.1.8. Baby's feeding patterns

The pattern of baby's feeding may be considered as disrupting factor, so, the mother will soon get to know her baby's feeding patterns. Each baby has a particular style of feeding, some slower, some faster. Learning her own baby's feeding patterns makes it easier to determine when he/ she is hungry, how often he/ she needs to eat, and how much time he/ she needs for feedings (68).

2.4.2. Socioeconomic factors

2.4.2.1. Income and educational level

Income and educational level play an observable role in breastfeeding.

Studies showed that, the highest rates of breastfeeding are observed among higher income, college educated women > 30 years of age living in the mountain and pacific regions of the United States (77).

The studies also showed that physician apathy, misinformation and insufficient prenatal breastfeeding education are considered as obstacles to the initiation and continuation of breastfeeding (78, 79, 80). In the mean time in some countries, education level had no effect on ever and exclusive breastfeeding such as in Benghazi (32).

2.4.2.2. Culture and nature of the family

Culture affects the breastfeeding noticeably, the Europeans differ from the Arab world in culture, and both of them differ from the black Africa. So the breastfeeding in public is a common behavior in the black communities, and it is considered a perfect breastfeeding because the baby is carried all the time of working of his/her mother's back. The baby is breastfed in consequent periods and in public.

In USA the idea of breastfeeding in public makes many people feel uneasy unfortunately, as Katie Granju writes in her book, attachment parenting (82).

Surveys have revealed that far too many women are uncomfortable at the thought of nursing their baby in public and this discomfort is a common cause for disruption of breastfeeding relationship", mothers may feel uncomfortable even when the "public" they are breastfeeding in front of is family members in their own home. The key point is not the place, but the presence of other people with the mother, whether those people are strangers or people she knows. Beyond practical considerations, many women make a philosophical choice about breastfeeding in public because they feel it is the most effective and natural way to meet their babies need (82). Family relationships also affects the mother's feeling about nursing, whether she is with siblings or grandparents, one friend or several friends, strangers or business associates (83). When women become mothers in societies in which breastfeeding is the norm, they have societal support and approval, as well as ample models and reliable advisors in their own families. Due to complex cultural and economic factors, the lowest rates of breastfeeding ever seen in the US occurred during 1960s (84).

2.4.3. Religious factor

Moslems religious supported breast feeding since more than 1400 years when the Quran Al Kareem urged the Moslems in "sorat Lokman" to continue breastfeeding till two years, before the existence of the WHO and the UNESEF organizations. But in spite of the Islamic constraints on revealing such sensitive part of the woman's body " her breasts" in public, the Islam allowed the Moslem mothers to breastfeed their babies in public with covered breasts which was mentioned in Al Kortobi interpretation .

2.4.4. Health status

2.4.4.1. Mother's health status

The mother health status affects or stops breastfeeding.

There are some situations in which breastfeeding are not in the best interest of the infant in case of mother who uses illegal drugs, mother who has untreated active tuberculosis and mother in United Status who has been infected with the human immunodeficiency virus, also in countries with populations at increased risk for other infectious diseases and nutritional deficiencies resulting in infant death, the mortality risks associated with not breastfeeding may outweigh the possible risks of acquiring human immunodeficiency virus infection (85, 86, 87, 88) .

Although most prescribed and over- the counter medications are safe for the breastfed infants, there are a few medications that mothers may need to take that may make it necessary to interrupt breastfeeding temporarily, these include radioactive isotopes, ant metabolites, cancer chemotherapy agents, and a small number of other medications (85) .

Many environment contaminates in food persist in our bodies, where they are stored in body tissues, such chemicals are transported from the mother's body into the fetus and into breast milk, resulting in early life exposures (89, 90, 91).

Although not very common, a few women have nipples that are drawn inward, or are inverted, when nibbles are inverted, a baby may not be able to grasp the areola properly

to get milk, such problem can be treated late in pregnancy or soon after baby are born as shown in appendix 11 (92).

Chronic diseases such as, leprosy, malignancy, beriberi (mothers suffering from beriberi pass in their milk a substance called methylglyoxal which is toxic to the infant), and mothers who stubbornly addicted to alcohol or heavy doses of some drugs. Those on heavy metals, Phenobarbital, hydantion, steroids etc, should also not be allowed to breastfeed their babies.

Local conditions e.g. breast abscess, cracked nipples etc. (breastfeeding must be resumed as soon as possible) (93).

Breast surgery or breast implant likely to cause breast feeding problems .Studies said that any kind of breast surgery, including breast implant surgery, makes it at least three times more likely that a woman trying to breast feed will have an inadequate milk supply (lactation insufficiently) (94) .

Postpartum Depression affects Breastfeeding and childhood outcomes. This was demonstrated by studies which identified psychosocial factors associated with reduced breastfeeding during the first six months of life, even mid systems of post partum depression led to reduced breast feeding and adverse infant outcomes (95).

2.4.4.2. Infant health status and conditions

Gross prematurity of baby or other conditions in which the newborn cannot suck, inborn errors such as phenylketonuria, galactosemia or lactose intolerance. Breast-milk jaundice, provided that serum bilirubin approaches critical level. Biological mother may avoid breastfeeding an infant who is to be passed on to another couple (96).

2.4.5. Environmental factors

Breastfeeding offers the developing infant the benefits of balanced nutrition and passive immunization, but the detection of persistent, environmental chemicals in human breast milk, samples from various regions of the world has led to concerns that these chemicals may have detrimental effects on the health and / or development of children. Chlorinated dibenzo–p-dioxins (CDDS), hexa chlorobenzene, P.P–DDE, methyl mercury, and polychlorinated biphenyls (PCBs) were selected as an important subset of persistent chemicals detected in breast milk for the purposes of reviewing data on their joint toxic actions following oral exposure.

Epidemiological studies in Michigan, North Carolina New York, the Netherlands and the Faeroe Island found statistically significal association between increasing concentrations of particular persistent chemicals found in maternal fluid samples (i.e. PCB s, CD D s, PP-DDE, or mercury in cord serum or breast milk) and deficits in motor and cognitive functions in children (97).

British babies Fed on breast milk could be receiving as much as 40 times world health organization (WHO), recommended levels of a wide range of potentially harmful chemicals. Man made pollutants have been identified in the breast milk of women in the UK, these include 87 dioxins, the poison which sparked the recent Belgian health scare, but experts have urged mother to continue breast feeding saying the potential benefits to the child still out weigh the risks posed by contaminated milk (98).

2.4.6. Other factors

Father discomfort with nursing was the top reason cited by new mothers who choose formula feeding. In a Pennsylvania medical center, just 44% of new moms were breastfeeding at the hospital, and by six months the number had dropped to 13% and of the women who used formula 36% cited "the baby's father's feelings", and 24.3 %, were women who cited the feeling of "grandmothers or other family members (99). In spite of the advantages of breast feeding for both infant and his mother, Britain's Royal College of nursing found that men are sometimes responsible for mothers choosing not to breastfeed. The men who disapprove often find the practice disgusting.

Other men are simply selfish and sexist and think that breastfeeding taints their image of breasts as sexual objects.

So, men need more awareness about the benefits of breastfeeding (100).

2.5. Healthy practicing of breastfeeding

Breast milk is the perfect feeding for all infants, including premature and sick newborns with rare exceptions, so to breastfeed well, pediatricians should provide parents with complete current in formations on the benefits and methods of breastfeeding to ensure that the feeding decision is a fully informed one.

When direct breastfeeding is not possible, expressed human milk fortified when necessary for the premature infant, should be provided (101, 102, 103, 104).

Before advising against breastfeeding or recommending premature weaning, the practitioner should weigh thoughtfully the benefits of breastfeeding against the risks of not receiving human milk. Breast feeding should begin as soon as possible after births

usually in the first hour, and the newborn infant should remain with the mother throughout the recovery period except under special circumstances concerning with the health status of infant and mother (105, 106, 107, 108). When breastfeeding, procedures that may interfere with breastfeeding traumatize the infant should be avoided or minimized.

Newborns infant should be nursed when ever they show signs of hunger, such as increased alterness or activity, mouthing, or rooting. Crying is a late indicator of hunger. Newborns should be nursed approximately 8 to 12 times every 24 hours until satiety , usually 10 to 15 minutes on each breast (109, 110, 111, 112).

In the early weeks after birth, non demanding babies should be aroused to feed if 4 hours have elapsed since the last nursing.

Appropriate initiation of breast feeding is facilitated by continuous rooming –in, formal evaluation of breastfeeding performance should be undertaken by trained observers and fully documented in the record during the first 24 -48 hours after delivery and gain at the early follow up visit, which should occur 48 -72 hours after discharge . Maternal recording of the time of each breastfeeding and it its duration, as well as voiding and stoolings during the early days of breastfeeding in the hospital and at home greatly facilitates the evaluation process (113, 114, 115). No supplements (water, glucose water, formula, and so forth) should be given to breastfeeding newborns unless medical indication exists (116, 118). With sound breastfeeding knowledge and practices, supplements rarely are needed. Supplements and pacifiers should be avoided whenever possible and, if used at all, only after breastfeeding is well established (117, 119). When discharge <48 hours after delivery, all breastfeeding mothers and their newborns should

be seen by pediatrician or other knowledgeable health care practitioner when the newborn is 2 to 4 days of age. In addition to determination of infant weight and general health assessment, breastfeeding should be observed and evaluated for evidence of successful breastfeeding behavior. The infant should be assessed for jaundice, adequate hydration, and age appropriate elimination patterns (at lest six urinations per day and three to four stools per day) by 5 to 7 days of age. All newborns should be seen by 1 month of age (120). Exclusive breastfeeding is ideal nutrition and sufficient to support optimal growth and development for approximately the first 6 months after birth (121), infants weaned before 12 months of age should not receive cow's milk feeding but should receive iron-fortified infant formula, gradual introduction of iron-enriched solid foods in the second half of the first year should complement the breast milk diet (122, 123, 124). It is recommended that breastfeeding continue for at least 12 month, and thereafter for as long as mutually desired (125).

In the first six months, water, juice, and other foods are generally unnecessary for breastfed infants. Vitamin D and iron may need to be given before 6 months of age in selected groups of infants (vitamin D for infants whose mothers are vitamin D –deficient or those infants not exposed to adequate sunlight. Iron for those who have low iron stores or anemia) (126, 127, 128, 129).

2.6. Recommended concepts on breastfeeding

2.6.1. First feeding after delivery

The American Academy of Pediatrics recommended that, **immediately** after delivery, baby should be placed on your chest or abdomen, skin to skin. Babies are very alert after they are born, and they are usually hungry, too, your baby's first feeding can take place within 30 minutes to an hour after delivery , the protection against infection that human milk provides is important immediately after birth, your milk, also stimulated the baby to nurse better later. If you had a vaginal delivery, you can nurse in bed or in a chair in the following ways:

Lie on your side with your baby facing you. Hold your baby in the cradle position, with the head in the crook of your arm. Firmly support the baby's back and buttocks. When feeding this way, make sure your baby's entire body is facing your body, not the ceiling. If you had cesarean section delivery you can nurse your baby in the following ways: Sit up using one or two extra pillows to support your baby and protect your incision. Lie down on your side with your baby facing you. Use a side sitting or "football" hold.

Always take time to make yourself comfortable. Do not be shy about asking for help during the first few feedings, just as with learning any thing new, it may take several feedings before you and your baby become a skilled nursing team (92).

2.6.2. Steps for success

To breastfeed successfully, a study revealed that mothers should talk to women who have breastfed well in the past, and to breastfeed their babies as soon as they can after they give birth, even if mother is not making enough milk, her breasts contain a thin fluid that help protect their babies from getting sick (130) .

Also mother should feed her baby on demand where newborns need to eat often , and to breastfeed at least every three hours in the beginning.

Many newborns will want to nurse every 1: 30 -2 hours. Breast milk is easier for baby to digest than formula, so breastfed babies will eat more often than those who feed from a bottle. New born may nurse 10-12 times a day (130).

Mothers should avoid extras like sugar water. Some babies get confused when a bottle is given to them early on Sugar water which makes the baby not wants to nurse. Bottle milk given in the first few days can reduce both the baby's hunger and the mother's milk supply and demand.

The more the baby nurses, the more milk the mother will make. Delay use of plastic nipples, so the baby dos not get confused, wait a week or two a after the baby is born before giving him/her a pacifier, plastic nipples require different sucking action than real ones (130, 131).

2.6.3. latching–on

According to the American Academy of Pediatrics instructions about breast feeding , the touching of breast to the center of baby's lips stimulates the baby to open his mouth widely, this is called "rooting reflex", as this occurs, the baby must be pulled straight forward onto the nipples and areola, and kept in mind that when a baby is correctly positioned ,or "latched –on", the nipples and much of the areola are pulled well into the

baby's mouth , the baby's lips and gums should be around the areola and not on the nibble. This is why it is important for the baby's mouth to be opened wide, and the mother can help her baby to latch-on by holding the breast with her free hand ,and placing fingers under the breast and resting thump lightly on top (Back behind the areola as shown in appendix 7,8).

The mother have to make sure that the baby is properly lined up at her breast, also be sure that fingers are well back from the areola so they do not get in the way. When the baby first nurse there will be tugging sensation.

If the latch-on hurts , pinches, or produces pain, the latch–on may be incorrect, so, the mother have to break the latch-on by slipping her finger into the corner of the baby's mouth, reposition, and try again. It can takes several tries, if the nipples are not sore, breastfeeding should not be painful, if it hurts while breastfeeding, then the baby may not be latch-on correctly and may need to repositioned (92).

The correct latch-on is very important as it**:** Makes milk flow better, prevent sore nipples, keeps the baby satisfied, Stimulates a good milk supply, Helps to prevent overly full (engorged) breasts. If the baby is latched–on correctly but the mother still have pain while breastfeeding, she must talk with her pediatrician (92).

2.6.4. Breast compression

The aim of breast compression is to continue the flow of milk to the baby once the baby no longer drinks on his own; breast compression stimulates alet down reflex and often stimulates a natural let down reflex to occur. The technique is useful for: Poor weight gains the baby, colic in the breastfed baby, frequent feedings and/or long feedings, sore nipples in the mother, recurrent blocked ducts and /or mastitis and encouraging the baby

who falls a sleep quickly to continue drinking. Breast compression is not necessary if every thing is going well (132).

2.6.5. Breast milk making

Knowing how breast milk is made and how it works to produce milk is helpful in understanding the breastfeeding process. The breast actually begins developing in the first few weeks of gestation before birth. But the mammary gland, the gland that produces milk, does not become fully functional until lactation begins. When a woman's breasts become swollen during pregnancy, this is a sign that the mammary gland is getting ready to work. The breast it self is a gland that is composed of several parts: glandular tissue, blood, lymph, nerves, and fatty tissue. Fatty tissue is what mostly affects the size of a woman's breast. Breast size does not have an effect on the amount of milk or the quality of milk a woman produces. Milk is secreted from the alveoli cells. When the alveoli cells are stimulated by a hormone, they contract and push the milk into the ductules and down into larger mammary ducts. These mammary ducts are underneath the nipple and areola and widen to collect the milk (133) .These widen ducts are called milk or lactiferous sinuses. When the baby's gums press on the areola and the nipple, it is the lactiferous sinuses that are being compressed, squeezing the milk into the baby's mouth.

The nipple tissue protrudes and become firmer with stimulation, which lets the nipple to be more flexible and easy to grasp in the baby's mouth. The diagram in appendix 7 shows that each mammary gland forms a lobe in the breast. And each lobe consists of a single branch of alveoli, milk ducts, and lactiferous sinuses that narrows in an opening in the nipple. Each breast has 15-25lobes as shown in appendix 6 (133).

2.6.6. How to bring baby to breast

As shown in appendix 8, bringing baby to breast is done by tickling the baby's lips to open. When open wide mother brings baby to breast so mouth is around both nipple and areola, and baby's tummy is facing mother's tummy.

When baby is latch well, his/her nose and chin touch mother's breast.

The proper position of baby's mouth around the nipple and the areola, the nose and the chin are touching the breast as shown in appendix 9. Baby's lips are turned out (flanged) (134).

2.6.7. Positions of breast feeding

There are several positions in which the mother can hold her baby while breastfeeding she can try all of them and choose the one that she and her baby feel most comfortable in. No matter which one she chooses, but to make sure that her infant tummy is facing her tummy.

This helps the baby to properly "latch on" to the nipple and areola. The mother can use pillows for support, as shown in appendix 10 there are five possible positions for breastfeeding:

1- Cradle: the easy and commonly used position.

2- Cross-cradle: modified clutch or transitional: The baby is given extra head support, this may help babies stay on the breast.

This position is good for premature babies or those babies with weak suck or having problems latching on.

3- Clutch or "foot ball": This position allows mother to better see and control baby's head. (Good for mothers with large breasts or inverted nipples).

4- Side lying: allows mother to rest or sleep while baby nurses. This position is good for mothers who had a caesarean section. (Puts no pressure on the section).

5- Slide-over : This position can help encourage a baby who refuses one breast to nurse on the less refused one as shown in appendix 10 (134).

Studies refer to nurse on demand as a fruitful practicing of breast feeding, where newborns need to nurse often. Breastfeed at least every 2 hours and when they show signs of hunger, such as being more alert or active, mouthing (putting hand or fists to mouth and making sucking motion with mouth) or rooting (turning head in search of nipple). Crying is a late sign of hunger. The ideal nursing is about 10-15 minutes on each breast. Breastfed babies can eat more often than bottle-fed babies. This is because breast milk is easier to digest than formula (135).

Chapter Three

Methodology

Methodology

3.1. Study design

It is descriptive cross sectional study, and it was chosen because the cross sectional studies are economical, cheap and examine the cause and results at the same time (136).

3.2. Study population

The study population includes all women with their children of age group 4-24 months who visit the primary health care centers in the North of Gaza for immunization or medical advice. The study population was calculated by determining the number of infants who immunized by BCG Vaccine for the first time after delivery in each of the four health care centers in the period 15th of April 2002 to 15th of December 2003. By testing the records in the four health centers, the study population was found to be 11,000 (table1)

3.3. Sample size

A sample of 205 mothers with their children of age group 4-24 months were selected randomly from the study population. The sample size was calculated by using the power calculation method which depends on the probability theory using the equations of the standard deviation and the standard error ($SD = SE / \sqrt{N}$, $SE = \sqrt{P(1-P)} / \sqrt{N}$).

Since the prevalence of breastfeeding (P) in Gaza was 84 % (55), so, the equation led to a sample size of 196 women. The sample size was increased to 205 women.

The sample was distributed on areas according to the proportion of the study population in each area (table 1).

PHCCs		Study population destribution	% of Total	Number of Selected mothers
Beit hanoun	UNRWA P.H.C.C	1562	14.2	29
Beit lahia	MOH P.H.C.C	2464	22.4	46
Jabalia	UNRWA P.H.C.C	3696	33.6	69
Jabalia	MOH P.H.C.C	3278	29.8	61
Total		**11,000**	**100**	**205**

Table 1 Distribution of population over areas in the north of Gaza

3.4. Sampling process

Since the study has to be conducted in the north of Gaza, the primary health care centers are chosen to be the work field in the North. Mothers with their infants of age group 4-24 months, who visited the four primary health care centers for immunization or medical advice for their babies, represent the study population. The samples were selected randomly, where the data collector started the interviews with any woman in the waiting hall with baby of age from 4 to 24 months, and after finishing, she started with another woman in the waiting hall.

3.5. Ethical considerations and procedures

The approval of Helsinki committee in Gaza was obtained to conduct the study (Appendix 15).

The approval of Ministry of health and UNRWA were also obtained (Appendix13, 14)

Mothers of concern were informed through a written consent and orally about the purpose of the study, and about their optional participation (Appendix 2).

3.6. Study place

The study was conducted at the four primary health care centers existing in the North of Gaza, which belong to MOH and UNRWA. These centers are UNRWA Primary health care center in Biet hanoun city, MOH primary health care center in Biet lahia city, UNRWA primary health care center in Jabalia Camp and MOH primary health care center in Jabalia city.

These centers include immunization units which facilitate data collection and secure the subjects of concern.

3.7. Pilot Study

Piloting was done on 20 mothers with their infants who were selected by convenient sampling from the four centers in the North of Gaza. Such procedure was done to test recruitment, response rate, validity and suitability of the questionnaire. After testifying the questionnaires, some changes on the questionnaire were performed to be more clear and understandable as shown in appendix 1. Subjects of the pilot study were excluded.

3.8. Content validity

Content validity was conducted before data collection by the help of experts to evaluate the questionnaire. Ten experts in maternity and research participated in evaluating the content validity of the research tool. The researcher had provided each of them by the study objectives and the operational definitions. There were few comments on the questionnaires, and those comments were taken into consideration.

3.9. Eligibility criteria

Inclusion criteria

Each mother with her breastfed infant of age group 4-24 months who entered one of the selected four primary health care centers for immunization or medical advice.

Exclusion criteria

Infants visiting the health center with another woman, mothers from other provinces, Visitors from abroad, foreign mothers (not Palestinian) and Infants of age less than four months.

3.10. Data collection

A face to face self administered questionnaires were prepared for 205 mothers with their infants of age (4-24) months in the four health centers.

The researcher and two well qualified trained females worked together in data collection. After checking the infant's age from his/her file, each data collector explained briefly the purpose of the study to each mother, and verify her right to accept or refuse the participation before filling the questionnaire. After obtaining informed consent (Appendix2), mothers were interviewed and privacy and confidently was maintained all the time. After filling each questionnaire the researcher reviewed it and checked up the completion of the information.

The questionnaire was designed to meat the objectives of the study, it included family and personal profile, social and economic profile, mother–child health profile and information about breastfeeding and its practice.

3.11. Response rate

The number of respondents was 205 women of the sample size, so the response rate was 100 %.

3.12. Data collection period

The data collection was achieved through one month from 15th of April to 15th of May 2004. The team worked three days a week with a average of ten questionnaires per day for each one for three hours a day, also the time needed to fill each questionnaire was approximately 15 minutes. Since the interview was conducted in the time of immunizing infants, so all information about the baby were available in the medical record and were checked by the interviewer.

3.13. Data entry and analysis

The data was entered and analyzed using statistical package for social sciences SPSS. Data analysis was carried out as follows: reviewing the field questionnaires, Coding of questionnaires, Choosing data entry model, Data entry, Data cleaning, Frequency table for all the study variables, Defining and recoding of certain variables, and cross tabulation and advanced statistical analysis.

Statistical relationships between the variables and breastfeeding patterns were assessed using Chi-Square test.

Chapter Four

Results

Results

This chapter presents the breast feeding patterns and practice among women in the North of Gaza and the factors that influence the practicing of it. On the other hand this chapter also explores the rates of exclusive breastfeeding, prolonged breast feeding, mixed feeding and formula feeding which was related to the study variables.

4.1. Characteristics of study population

The population was distributed by area as follows, Beit Hanoon 14%, Beit Lahia 23%, and Jabalia 63% (figure 1). Two-thirds (64.4%) of the mothers were living in towns and 35.6% of them were living in camps (figure2). Also it was observed that 54.6% of the study population were refugees compared with 45.4% were civilians (figure3).

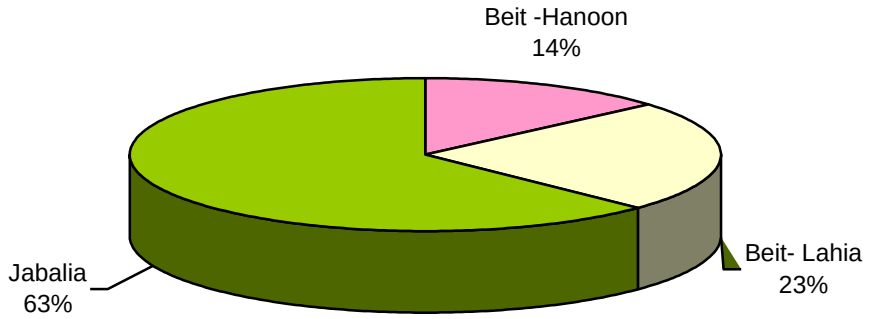

Figure 1 Distribution of the study population by areas

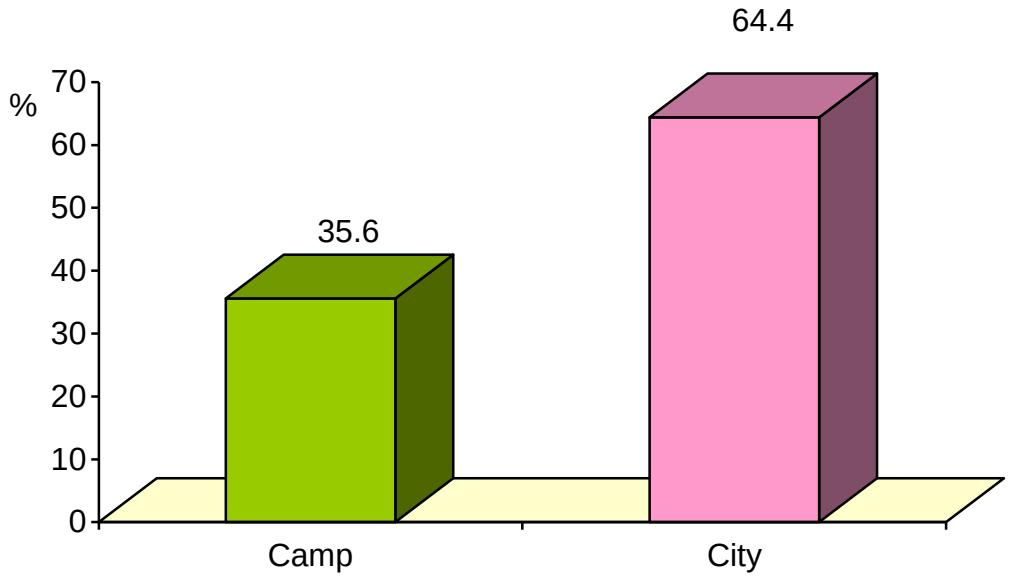

Figure 2 Distribution of the study population by locality

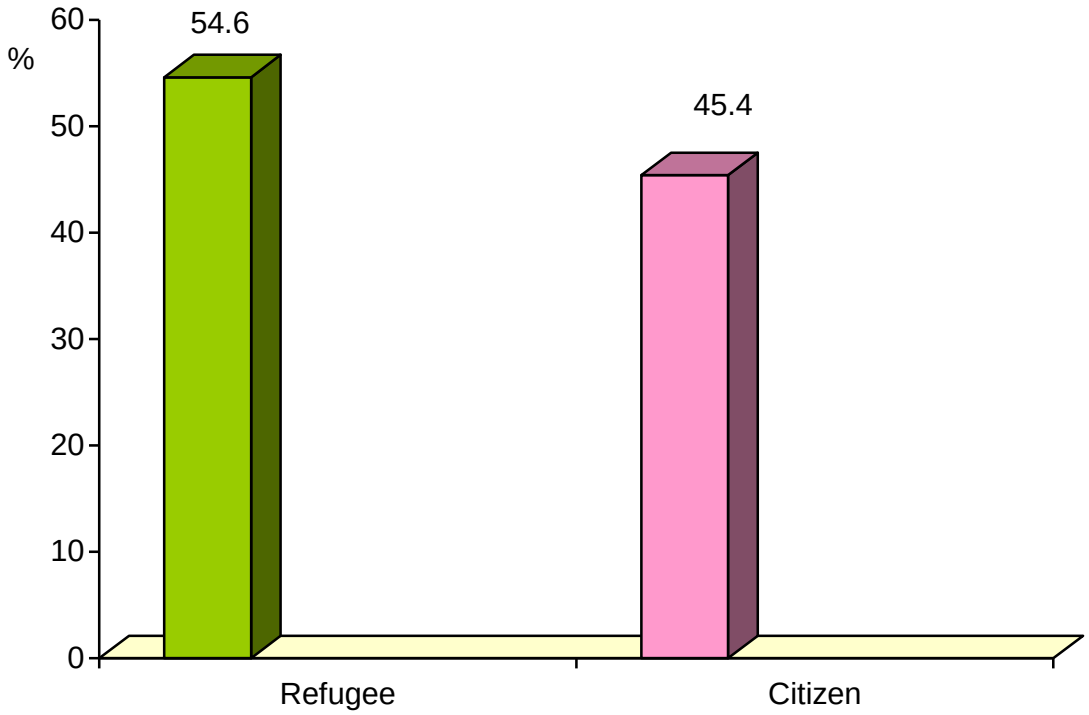

Figure 3 Distribution of the study population by citizenship

The percent of infant males and females of the study population were 56%, 44% respectively (figure 4) The average age of infants was 9.38 ± 5.32 months . The average birth weight of infants was 3.2± 0.6 Kg, and the current weight of them was 7.8± 2.4 Kg.

The mean ages of mothers was 26.3± 5.9 distributed as 19-34 years old group were 157 with percent of 76.6 and 35+ years were 48 with percent of 23.4, and their study years were years 9.1± 4 (figure5).

The means of ages of infant's fathers and mothers were 30± 6.2 and 26.3 ± 6.2 years, and study years of 9.17±3.3 and 9.9 ± 4 years respectively (figure5).

It is found that 98% of women of the study population were house-wives. In the mean time only 22.4% of men of the study population were employees and 76.6% of them were non-skilled workers or without jobs.

It is found also that 56.6% of women of the study population were living in nuclear families and 43.4% in extended ones (figure6).

As for the consanguinity the results showed that, 42.4% of couples were of consanguineous marriages versus to 57.6% of non consanguineous marriages (figure7).

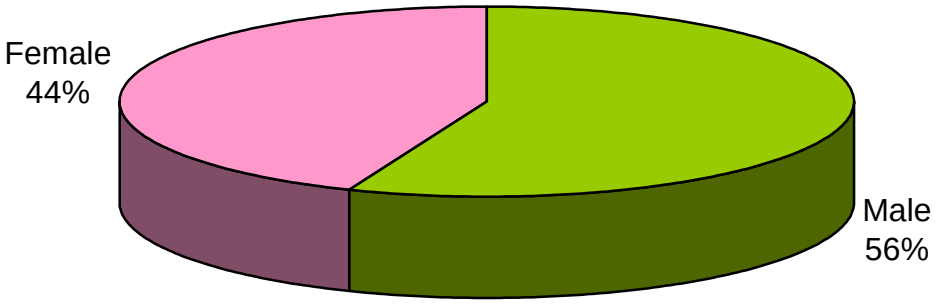

Figure 4 Distribution of the study population by gender

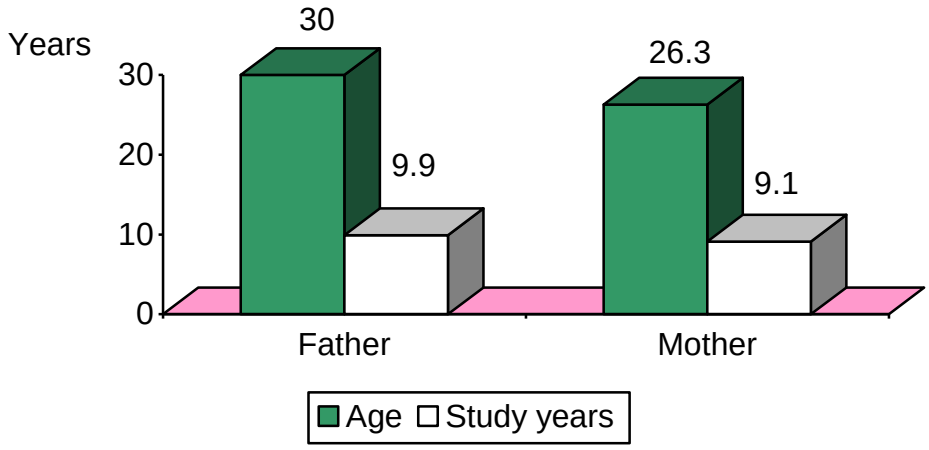

Figure 5 Distribution of the study population by parent's age and average years of study

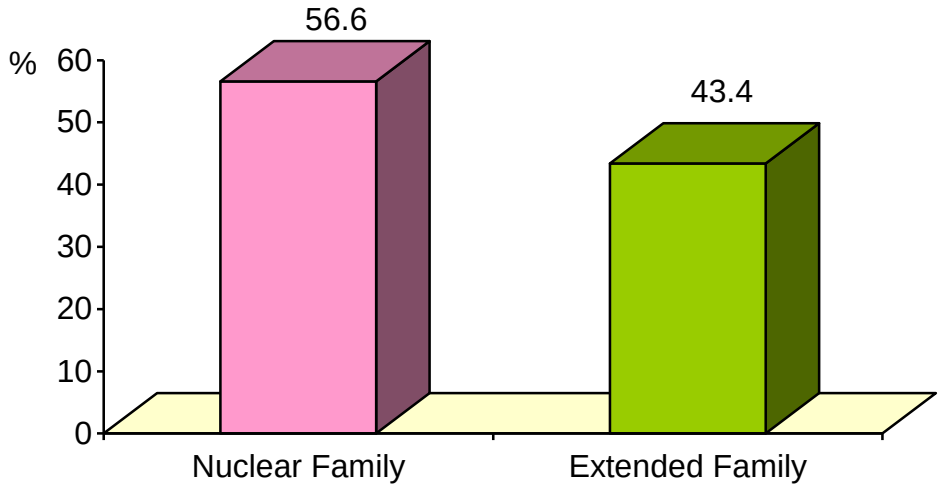

Figure 6 Distribution of the study population by family type

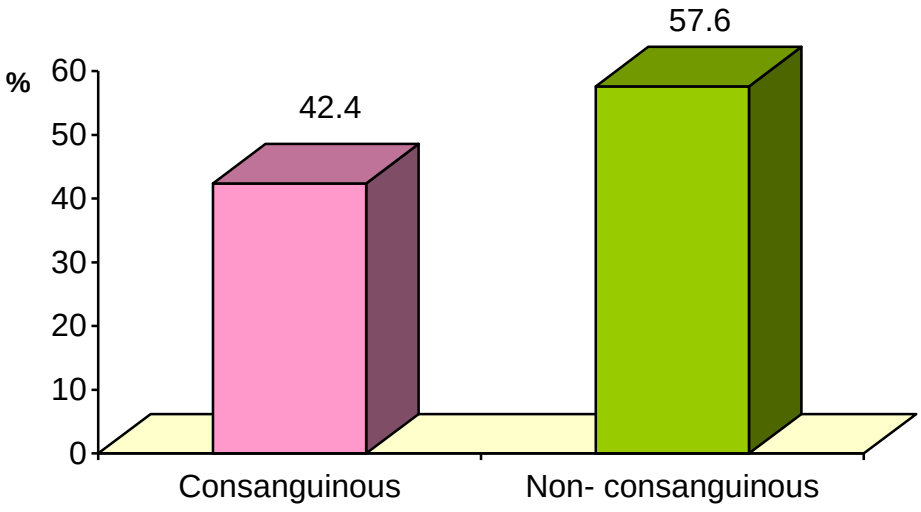

Figure 7 Distribution of the study population by consanguinity

As for housing, the results shows that 72 % of the study population was living in flats, and 22.6% in asbestos houses, and 5.4 % in villas (figure 8). The results also showed that 65.4% of the population was living in families owned houses, versus 30.4% of them living in houses of their own and 4.2% of them in rented houses (figure 9).

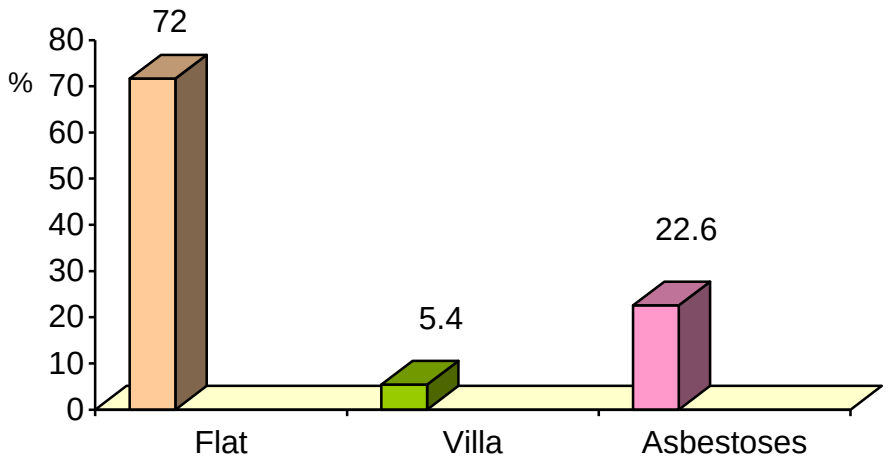

Figure 8 Distribution of the study population by housing

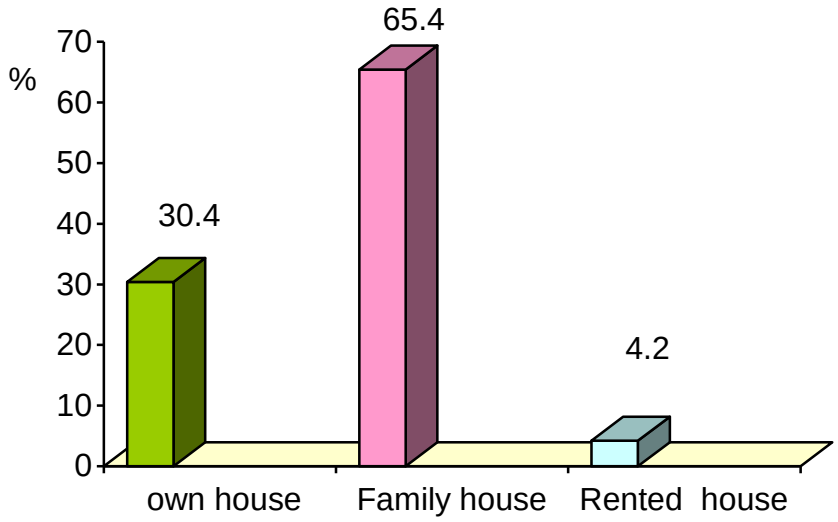

Figure 9 Distribution of the study population by house ownership

4.2. Breast feeding patterns

There were different patterns of infants feeding. The most common pattern of feeding were the mixed feeding 66.3%, the prolonged exclusive breastfeeding was 12.2 %, infants while formula feeding were 2.4% and those who were exclusively breastfed within the recommended period were 19.1% (figure 10). The initiation rate of breast feeding among the Study population was 97.6%.

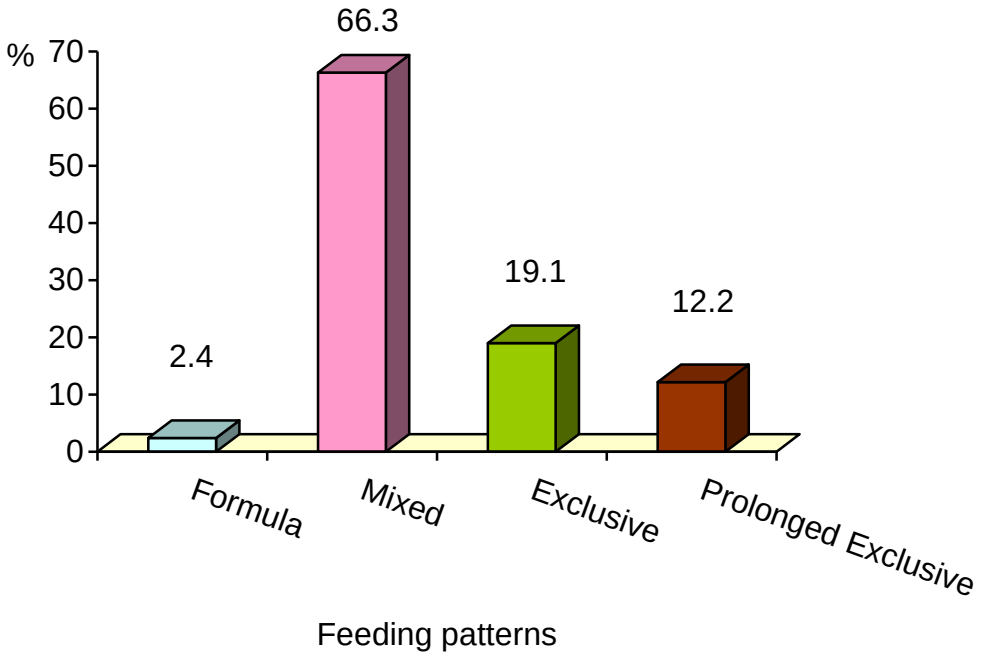

Figure 10 Distribution of study population by feeding patterns

According to age groups of children, the results showed that the mixed feeding was the most frequent among all age groups, but it was more frequent among the age group 4-6 months (83.3%). More over the exclusive and prolonged exclusive breast feeding was more frequent among the age groups 12-18 months (28.8%, and 15.4 % respectively) and 18-24months (25%, and 31% respectively). This indicates that there were tendency toward mixed feeding among Palestinian women instead of exclusive breast feeding. There were also tendency towards only formula feeding among the study population reflected that 4.5% of infants from 4-6 months were formula fed compared with 1.4% and 1.9%of children of ages 6-12 months and 12-18 months respectively (figure11).

As for the gender of baby, the exclusive breast feeding was more frequent among female babies 22.2% compared to 16.5% among males and the mixed feeding was more among males 69.6% compared to 62.2% among females. But there was no difference between

males and females in the formula feeding or in prolonged exclusive breast feeding 2.6, 2.2% and 11.3, 13.3% respectively (figure12).

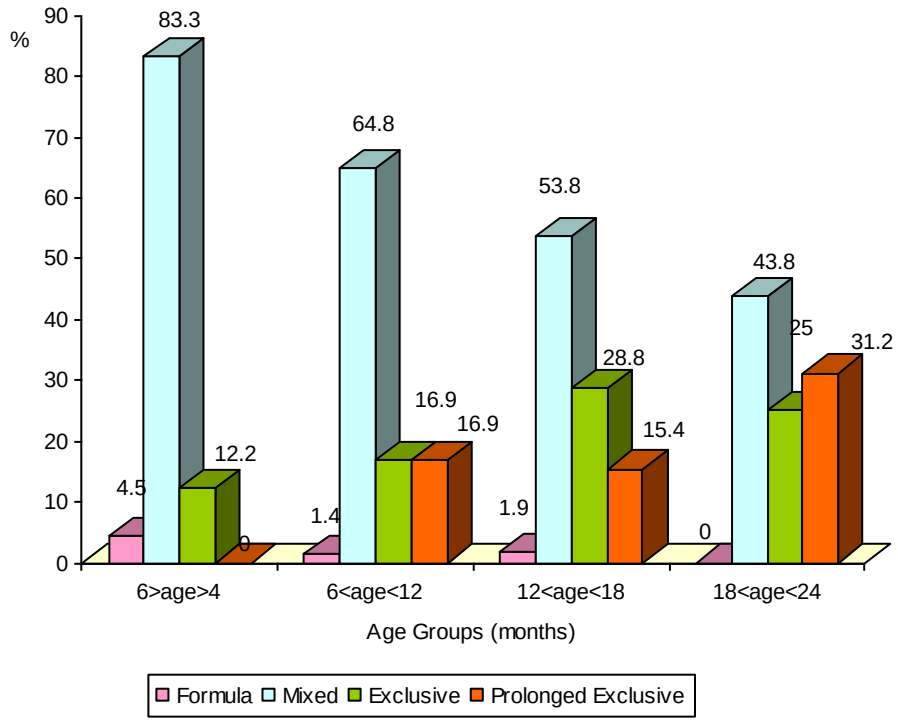

Figure 11 Distribution of study population by children age groups and feeding pattern

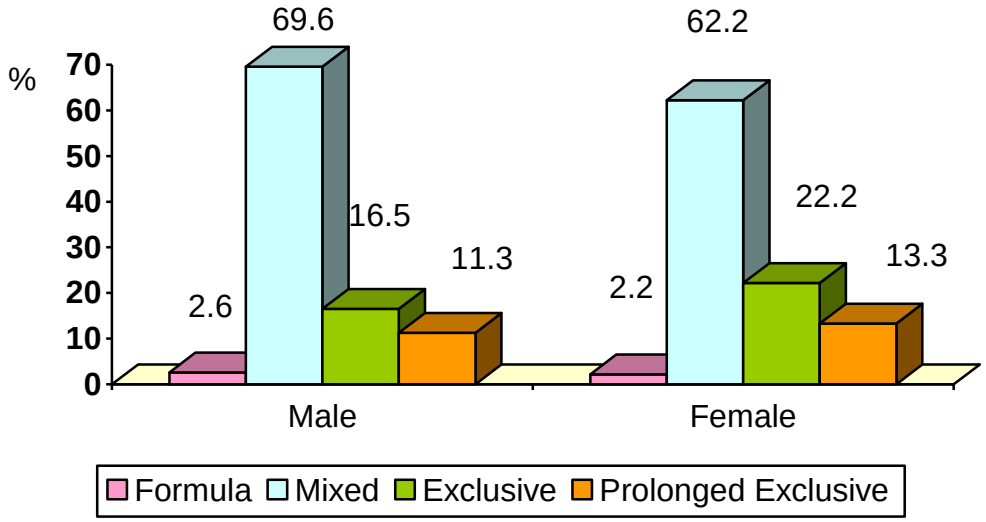

Figure 12 Distribution of study population by baby's gender and feeding patterns

In case of areas of residency, Beit Lahia Women were more tend towards mixed 75%, and formula feeding 4.2%, while the exclusive feeding was very low 2.1 % compared to other areas. As for the feeding patterns in Jabalia camp the exclusive breast feeding was more frequent 31% and the mixed feeding was less frequent 49.3% compared to other areas. The prolonged exclusive breast feeding was less frequent in both Jabalia town 1.7% and Beit Hanoon 3.6% compared to Beit Lahia 18.8% and Jabalia Camp 19.7 %. But in Beit Hanoon, in spite of the high percent of mixed breastfeeding 67.9%, the exclusive breastfeeding still high 25% in comparison with other areas of North Governorates.As for Jabalia town, the results showed that the highest frequency of mixed feeding was among their women 79.3%x^2=33.2,p value<0.0001(Table2). According to the Locality, the results was congruent with the previous result, where the population who lived in camps were more tend for exclusive feeding 30.1% compared to (12.9%) of towns population. The prolonged exclusive was more frequent among camp's population 20.5%, where it was 7.6% among town's population, the formula and mixed feeding

were more frequent among town's population 3.8% and 75.8 respectively compared to 0% and 49.4% respectively of camp's population,x^2=20.6, p value < 0.0001 (table2). The refugees were more tend towards exclusive and prolonged exclusive feeding 27.7% and 15.2% respectively compared to 8.6% and 8.6% of citizens. On the other hand the citizens were more tend toward formula and mixed feeding 4.3% and 78.5% respectively compared to 0.9% and 56.3% respectively of refugees , x^2=17.7, p value < 0.0001(table2). The women who were visiting UNRWA clinics were more tending to exclusive and prolonged exclusive feeding 29.9% and 15.5% respectively compared to 9.3% and 9.3% of women were visiting MOH clinics ,x^2=19.05, p value = 0.00 (table2) .

Item	**Formula**		**Mixed**		**Exclusive**		**Prolonged**		**Total**		**P-v**
	No	**%**	**No**	**%**	**No**	**%**	**No**	**%**	**No**	**%**	
Area											
Beit Hanoon	1	3.6	19	67.9	7	25	1	3.5	28	100	**0.00**
Beit Lahia	2	4.2	36	75	1	2.1	9	18.7	48	100	
Jabalia camp	0	0	35	49.3	22	31	14	19.7	71	100	
Jabalia city	2	3.4	46	79.3	9	15.5	1	1.7	58	100	
Total	**5**	**2.4**	**136**	**66.3**	**39**	**19.1**	**25**	**12.2**	**205**	**100**	
Locality											
Camp	0	0	35	49.4	22	30.1	14	20.5	71	100	**0.00**
City	5	3.8	101	75.8	17	12.9	11	7.6	134	100	
Total	**5**	**2.4**	**136**	**66.3**	**39**	**19.1**	**25**	**12.2**	**205**	**100**	
Citizenship											
Refugee	1	0.9	63	56.3	31	27.7	17	15.2	112	100	**0.00**
Citizen	4	4.3	73	78.5	8	8.6	8	8.6	93	100	
Total	**5**	**2.4**	**136**	**66.3**	**39**	**19.1**	**25**	**12.2**	**205**	**100**	
Clinic Type											
UNRWA	1	1	52	53.6	29	29.9	15	15.5	97	100	**0.00**
MOH	4	3.7	84	77.8	10	9.3	10	9.3	108	100	
Total	**5**	**2.4**	**136**	**66.3**	**39**	**19.1**	**25**	**12.2**	**205**	**100**	

Table 2 Relationship between feeding patterns, area of residency, locality, Civility, and clinic type

Regarding women's age group, educational level and their husbands' age groups and educational level, results showed that the women of middle age (19-34 years) were more tend to exclusive breast feeding 20.3% compared to 11.1%, 12.5% of younger (≤18 years) or older (≥35 years) respectively but the p value did not reach statistical significant level. Also it was observed that the exclusive breast feeding percentage increased among women of high educational level (≤13 years) 28.6% compared to 19.5% of women of 7-12 years of educational level and 14.3% of women of≤6 years educational level. Also the same results were found for fathers' age and educational level and the p value did not reach statistical significant level (table 3).

Item	**Formula**		**Mixed**		**Exclusive**		**Prolonged**		**Total**		**P-v**
Women	**No**	**%**	**No**	**%**	**No**	**%**	**No**	**%**	**No**	**%**	
Age Group											
≤18	1	11.1	6	66.7	1	11.1	1	11.1	9	100	**0.49**
19-34	4	2.3	111	64.5	35	20.3	22	12.8	172	100	
≥35	0	0	19	79.2	3	12.5	2	8.3	24	100	
Total	**5**	**2.4**	**136**	**66.3**	**39**	**19.1**	**25**	**12.2**	**205**	**100**	
Educ. Years											
≤6	1	2.4	30	71.4	6	14.3	5	11.9	42	100	**0.92**
7-12	4	2.7	98	65.8	29	19.5	18	12.1	149	100	
≥13	0	0	8	57.1	4	28.6	2	14.3	14	100	
Total	**5**	**2.4**	**136**	**66.3**	**39**	**19.1**	**25**	**12.2**	**205**	**100**	
Husband											
Age group											
19-34	5	3.2	104	66.2	31	19.7	17	10.8	157	100	**0.43**
≥35	0	0	32	66.7	8	16.7	8	16.7	48	100	
Total	**5**	**2.4**	**136**	**66.3**	**39**	**19.1**	**25**	**12.2**	**205**	**100**	
Educ. Years											
≤6	2	3.7	36	66.7	9	16.7	7	13	54	100	**0.82**
7-12	2	1.7	79	68.7	20	17.4	14	12.2	119	100	
≥13	1	2.8	21	58.3	10	27.8	4	11.1	36	100	
Total	**5**	**2.4**	**136**	**66.3**	**39**	**19.1**	**25**	**12.2**	**205**	**100**	

Table3 Relationship between feeding patterns, parent's age and parent's educational level

As for occupation and family income, results showed that the relation between feeding patterns, parent's occupation and family income did not reach statistical significant level (table4). It is fair to mention that the non skilled fathers means those who work on demand and not having specific work .

Item	Formula		Mixed		Exclusive		Prolonged		Total		P-v
	No	%	No	%	No	%	No	%	No	%	
Women's Job											
House wife	5	25	13.3	66.5	38	19	84	12	200	100	**0.94**
Employee	0	0	3	60	1	20	1	20	5	100	
Total	**5**	**2.4**	**136**	**66.3**	**39**	**19.1**	**25**	**12.2**	**205**	**100**	
Husbands' job											
Not work	1	3.7	22	81.5	3	11.1	1	3.7	27	100	**0.59**
Employee	1	2.2	28	60.9	11	23.9	6	13	46	100	
Non- skilled	3	2.3	86	65.2	25	18.9	18	13.6	132	100	
Total	**5**	**2.4**	**136**	**66.3**	**39**	**19.1**	**25**	**12.2**	**205**	**100**	
Family Income											
Low (-1000)	2	1.8	82	71.9	20	17.5	10	8.8	114	100	**0.34**
Moderate (1001-2499)	3	5	34	56.7	13	21.7	10	16.7	60	100	
High (+2500)	0	0	20	64.5	6	19.4	5	16.1	31	100	
Total	**5**	**2.4**	**136**	**66.3**	**39**	**19.1**	**25**	**12.2**	**205**	**100**	

Table 4 Relationship between feeding patterns and parent's occupation& Income

About family type, the women who lived in nuclear family were more tend to exclusive breast feeding 20.7% than those who lived in extended family 16.9% but the differences did not reach significant level. The women who lived in rented houses were more tend towards exclusive breast feeding 44.4% than those who lived in owned houses 19.4% or in their family houses 17.2%. Also the same for feeding pattern and house ownership and the p value did not reach significant level (table 5).

Item	Formula		Mixed		Exclusive		Prolonged		Total		P-v
	No	%	No	%	No	%	No	%	No	%	
Family Type											
Nuclear	2	1.7	75	64.7	24	20.7	15	12.9	116	100	**0.76**
Extended	3	3.4	61	68.5	15	16.9	10	11.2	89	100	
Total	**5**	**2.4**	**136**	**66.3**	**39**	**19.1**	**25**	**12.2**	**205**	**100**	
House Ownership											
Owned House	2	3.2	39	62.9	12	19.4	9	14.5	62	100	**0.54**
Family House	3	2.2	93	69.4	23	17.2	15	11.2	134	100	
Rented House	0	0	4	44.4	4	44.4	1	11.2	9	100	
Total	**5**	**2.4**	**136**	**66.3**	**39**	**19.1**	**25**	**12.3**	**205**	**100**	
House Type											
Asbestoses	2	4.3	24	51.1	10	21.3	11	23.4	47	100	**0.07**
Flat	3	2	102	69.4	28	19	14	9.5	147	100	
Villa	0	0	10	90.9	1	9.1	0	0	11	100	
Total	**5**	**2.4**	**136**	**66.3**	**39**	**19.1**	**25**	**12.2**	**205**	**100**	
Family Problems											
Yes	3	2.5	87	72.5	21	17.5	9	7.5	120	100	**0.06**
No	2	2.4	49	57.6	18	21.2	16	18.8	85	100	
Total	**5**	**2.4**	**136**	**66.3**	**39**	**19.1**	**25**	**12.2**	**205**	**100**	

Table 5 Relationship between feeding patterns, family type, house type, house ownership and family problems

It was observed that the women who lived in asbestoses houses were more tend to exclusive and prolonged exclusive breastfeeding 21.3% and 23.4% respectively than those who lived in flats 19% and 9.5% respectively or in villas 9.1% and 0% respectively with remarkable differences but the p value did not reach significant level .

Also the women who did not suffer from family problems were more tend to exclusive breast feeding 21.2% than those who were suffering from family problems 17.6%. While

the mixed breast feeding was more frequent among women who suffered from family problems 72.5% than those who did not 57.6%, the p value did not reach significant level.

Mother who had a warm relationships with her friends were more tend towards exclusive breast feeding 20.2% compared to 7.1% of mothers with normal relationships and with No relations with her friends x^2=15.9, p value = 0.01. The results showed also that the exclusive breast feeding increased among women with worse relationship with their sisters 25% compared to 18.9% of those of good relationship with their sisters, the p value not significant (table6).

Regarding the role of husbands in relation to feeding pattern of baby, the exclusive breast feeding was more frequent among families of constructive husband role 21.8% compared to 12.5% of destructive husband role (p value not significant). Regarding the role of grand parents in caring the baby table 6 showed that the exclusive breast feeding was more frequent among babies whose their grandparents had negative role in caring baby 26.8% compared to 17.7% of those of positive role (p value not significant).

It was clear that the women who were getting tired in home duties were more tend toward exclusive breast feeding 23.3% compared to 13.5% of those who were not getting tired (p value not significant (table 6).

Item	Formula		Mixed		Exclusive		Prolonged		Total		P-v
	No	%	No	%	No	%	No	%	No	%	
Friendship											
No	0	0	41	61.2	13	19.4	13	19.4	67	100	**0.01**
Warm	3	2.4	86	69.4	25	20.2	10	8.1	124	100	
Normal	2	14.3	9	64.3	1	7.1	2	14.3	14	100	
Total	**5**	**2.4**	**136**	**66.3**	**39**	**19.1**	**25**	**12.2**	**205**	**100**	
Relationship with sister											
No Sisters	0	0	2	40	1	20	2	40	5	100	**0.6**
Good	5	2.6	131	66.8	37	18.9	23	11.7	196	100	
worse	0	0	3	75	1	25	0	0	4	100	
Total	**5**	**2.4**	**136**	**66.3**	**39**	**19.1**	**25**	**12.2**	**205**	**100**	
Husband Role											
No Role	2	2.6	51	65.4	12	15.4	13	16.7	78	100	**0.26**
Constructive	2	1.7	79	66.4	26	21.8	12	10.1	119	100	
Destructive	1	12.5	6	75	1	12.5	0	0	8	100	
Total	**5**	**2.4**	**136**	**66.3**	**39**	**19.1**	**25**	**12.2**	**205**	**100**	
Grand- parents Role											
No Role	3	2.9	70	69.9	17	16.7	12	11.8	102	100	**0.14**
Positive	2	3.2	45	72.6	11	17.7	4	6.5	62	100	
Negative	0	0	29	51.2	11	26.8	9	22	41	100	
Total	**5**	**2.4**	**136**	**66.3**	**39**	**19.1**	**25**	**12.2**	**205**	**100**	
Tiredness in Home											
Yes	4	3.4	73	62.9	27	23.3	12	10.3	116	100	**0.18**
No	1	1.1	63	70.8	12	13.5	13	14.6	89	100	
Total	**5**	**2.4**	**136**	**66.3**	**39**	**19.1**	**25**	**12.2**	**205**	**100**	

Table 6 Relationship between feeding patterns, Friendship type, relation with relatives and women tiredness at home

As for women's health and nutritional status, the results showed that women who were not complaining of chronic diseases were more tend towards exclusive breast feeding 20.3% than those who were complaining of chronic diseases 5.6% and the women who were complaining of chronic diseases were more tend towards mixed feeding 83.3% than

those who were not complaining 64.7%, where the p value did not reach significant level. Also the women with poor or very poor nutritional status either quantitatively or qualitatively were more tend towards exclusive breast feeding 27-50% than those whose nutrition status was normal or good 15-22%, p value not significant (table 7).

Item	**Formula**		**mixed**		**Exclusive**		**Prolonged**		**Total**		**P-v**
Women	**No**	**%**	**No**	**%**	**No**	**%**	**No**	**%**	**No**	**%**	
Chronic Diseases											
Yes	0	0	15	83.3	1	5.6	2	11.1	18	100	**0.36**
No	5	2.7	121	64.7	38	20.3	23	12.2	187	100	
Total	**5**	**2.4**	**136**	**66.3**	**39**	**19**	**25**	**12.2**	**205**	**100**	
Quantity of											
Good	0	0	32	65.3	11	22.4	6	12.2	49	100	**0.57**
Normal	4	3	91	67.9	21	15.7	18	13.4	134	100	
poor	1	5.6	11	61.1	5	27.8	1	5.6	18	100	
Very poor	0	0	2	50	2	50	0	0	4	100	
Total	**5**	**2.4**	**136**	**66.3**	**39**	**19**	**25**	**12.2**	**205**	**100**	
Quality of Nutrition											
Good	0	0	47	71.2	12	18.2	7	10.6	66	100	**0.45**
Normal	4	3.4	78	65.5	20	16.8	17	14.3	119	100	
poor	1	6.3	9	56.3	5	31.3	1	6.3	16	100	
Very poor	0	0	2	50	2	50	0	0	4	100	
Total	**5**	**2.4**	**136**	**66.3**	**39**	**19**	**25**	**12.2**	**205**	**100**	

Table 7 Relationship between feeding patterns, health and nutritional status of Women

In case of health status of baby, the duration of pregnancy, and the birth weight to duration of pregnancy, it was clear that there was more tend towards mixed feeding

among women of babies of birth health problems 68% (p value not significant), preterm babies 100% (p value not significant) and small for gestational age 81% with x^2=12.3,p value = 0.05 than those of babies of no health problem 66.1% or full-term 65.3% or appropriate or large for gestational age 65.5% and 50% respectively (table 8) .

Item	Formula		Mixed		Exclusive		Prolonged		Total		P-v
	No	%	No	%	No	%	No	%	No	%	
Birth Health Problems											
Yes	0	0	17	68	4	16	4	16	25	100	**0.76**
No	5	2.8	119	66.1	35	19.4	21	11.7	180	100	
Total	**5**	**2.4**	**136**	**66.3**	**39**	**19**	**25**	**12.3**	**205**	**100**	
Pregnancy Term											
Full-term	5	2.5	130	65.3	39	19.6	25	18.6	199	100	**0.37**
Preterm	0	0	6	100	0	0	0	0	6	100	
Total	**5**	**2.4**	**136**	**66.3**	**39**	**19**	**25**	**12.3**	**205**	**100**	
Birth Weight/Age											
Small for gestational age	2	9.5	17	81	2	9.5	0	0	21	100	**0.05**
appropriate for gestational	3	1.7	114	65.5	33	19	24	13.8	174	100	
Large for gestational age	0	0	5	50	4	40	1	10	10	100	
Total	**5**	**2.4**	**136**	**66.3**	**39**	**19**	**25**	**12.2**	**205**	**100**	

Table 8 Relationship between feeding patterns, health status and growth characteristics of baby

4.3. Feeding practice

It is known that many issues could be studied in the field of infant feeding practice. Those issues are of the following practices: the first time of breast feeding, the frequency of breast feeding in the first months, duration of breast feeding at each meal, position of baby during breast feeding process, supplementaries, and the source of advice.

Regarding the first time of breast feeding, the results revealed that most of women 78% had initiated breast feeding during the first hour after birth, while 12.2% of them had initiated after the first hour till the twelve hours, and 8.3% after twelve hours, where there are 1.5% had not fed their children by breast (figure 13) .

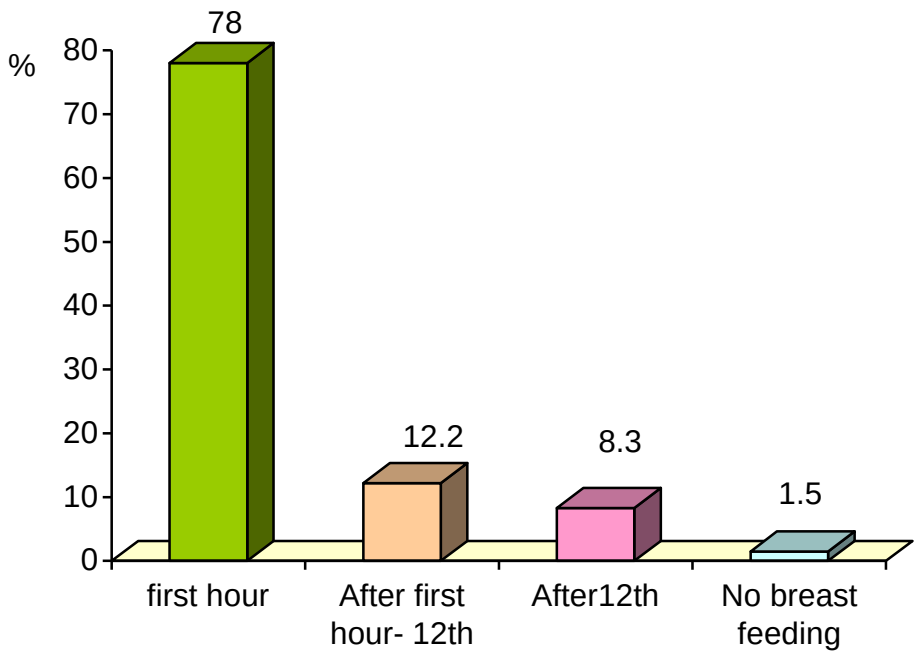

Figure 13 distribution of study population by the first time of breastfeeding

As for the frequency of breast feeding during the first six months, the study revealed that 200 women of 205 with percent of 97.6 had initiated breast feeding. But about more than half of them 53% were breast feeding their babies 10-12 times daily, while 47% of them were breast feeding less than 10 times daily during the first six months (figure 14) .

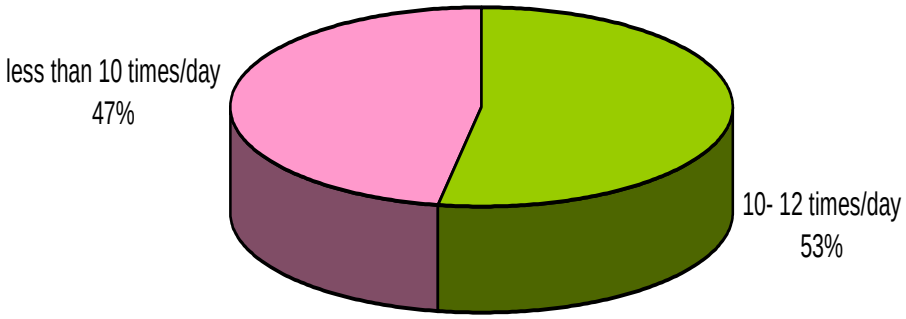

Figure 14 Distribution of study population by the frequency of breastfeeding in the fist six months

Regarding the positions of breast feeding it was clear that 82% of women in North Gaza use cardle and cross cardle, while 12% were using side lying position, and 5% were using other positions not have specific names. In general it is observed that the women in the North of Gaza were practicing correct positions of breast feeding (figure15).

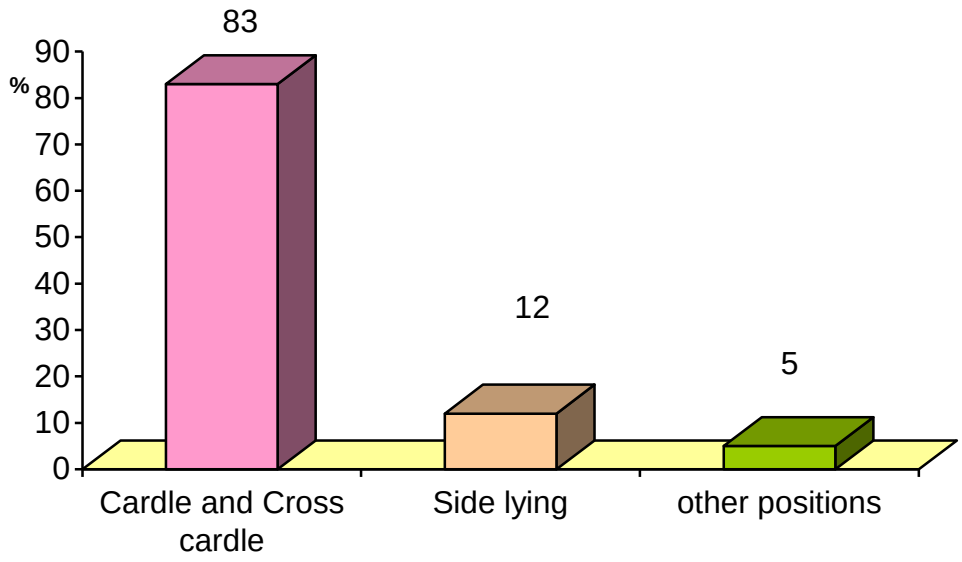

Figure 15 Distribution of study population by the position of breastfeeding

The results of the study also revealed that 23.9% of study population had stopped breast feeding during the first 18th months of age, where 17.1% of them had been stop it during the first year of life, and 9.3% had stopped it at the age 6 months, but 3.4% of them stopped it during the first month of age. Those results indicate that in spite of the high initiation rate of breast feeding, there was a noticeable drop of breastfeeding in the first sixth months and first year of life (figure 16).

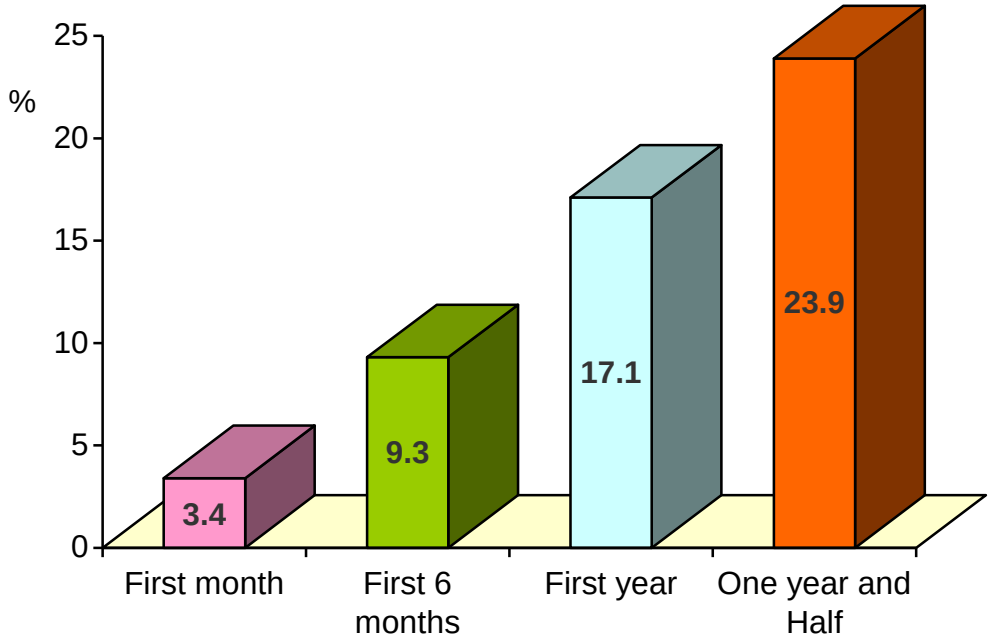

Figure16 Distribution of study population who stopped breastfeeding by age of children

Regarding the causes of stopping breast feeding among those subjects, it was obvious that 79.6% of those who stopped breast feeding before one year and half were believing that it was the right time to wean her baby at that age, and 2% had no reason or explanation for stopping, while 8.2% of them attributed the stopping for child disease, 6.1% of them attributed it to her disease, and 4.1% of them to lack of milk execration. It is important to mention that the mean age of infants at which weaning occurred among the study population was 9.16 $\pm$ 5.64 months (figure17).

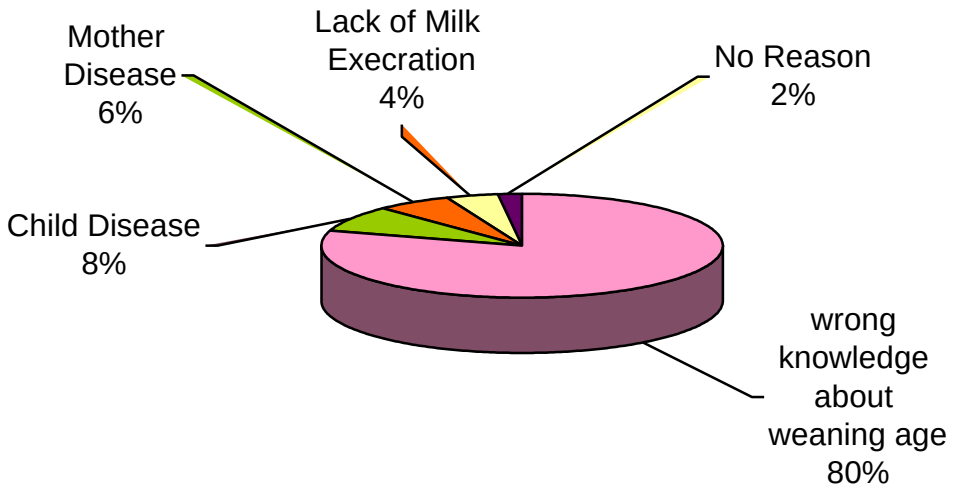

Figure 17 Distribution of study population who stopped breastfeeding by causes of stopping

Concerning the introduction of supplementary foods, the results showed that the most frequent food which was introduced for infant feeding was formula milk 51.3%, then the home made food 44.4%, and the Herbal drinks was 30.2%, while the soap 28.3% . The solid food was less frequent such as bread and biscuits 18.5%, vegetables 12.2%, fruits 3.9% and meat 2.4% (figure18).

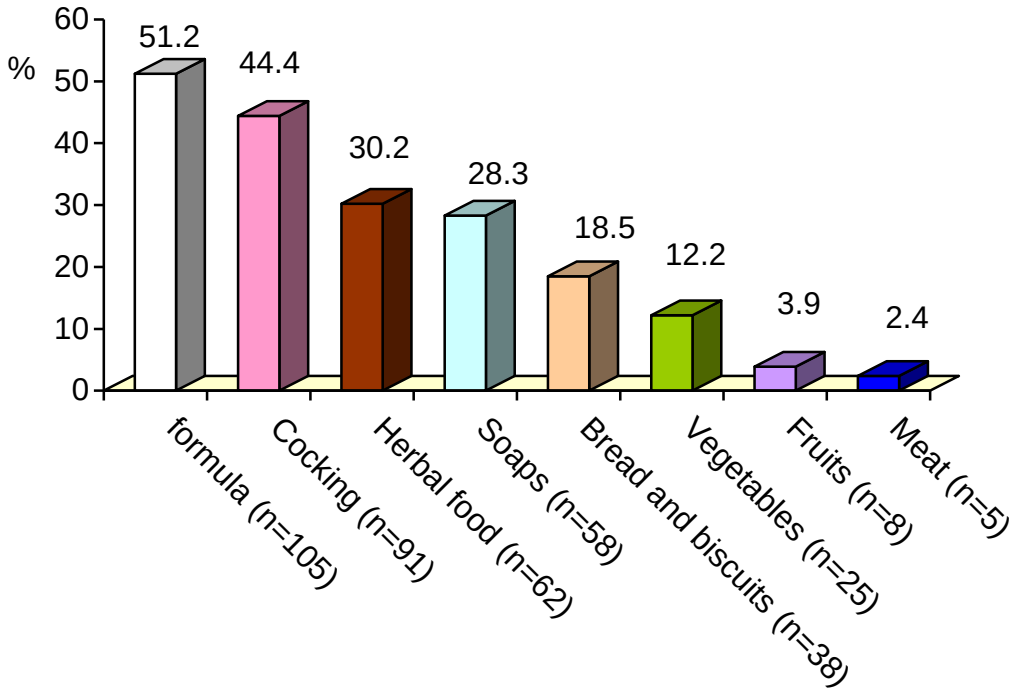

Figure 18 Distribution of study population by supplementary food

The formula and Herbal drinks were the most materials that introduced during the first four months of infant's life, where 82.9% of subjects who introduced formula for baby feeding had done that during the first four months.

Also 83.9% of study population who introduced Herbal food had done it during the first 4 months of infant's life. It was observed that bread and Biscuits were also introduced more than other foods during the first four months of infant's life 42.1% (Table9).

Materials	Before or during first 4		After first 4 months		Total	
	No	%	No	%	No	%
Formula	97	82.9	18	17.1	105	**100**
Herbal food	52	83.9	10	16.1	62	**100**
Bread and Biscuits	16	42.1	22	57.9	38	**100**
Fruits	3	37.5	5	62.5	8	**100**
Vegetables	3	12	22	88	25	**100**
Soaps	4	6.9	54	93.1	58	**100**
Home made food	5	5.5	86	94.5	91	**100**
Meat	0	0	5	100	5	**100**

Table 9 Distribution of study population by supplementary food and time of introduction

As for the reasons for introducing the supplementary foods for breastfed infants, mothers attributed the main cause of introducing the formula was baby's hunger 61.9%, then the mother and child disease 21.9%, and then the desire to increase the growth of child 15.3%. At the same time the main cause of introducing Herbal drinks was mother or child disease 51.6%, while 48.4% of women had introduced those liquids without reasons. For other supplementary foods, it was very clear that the baby's hunger was the only reason for introducing them (figure19).

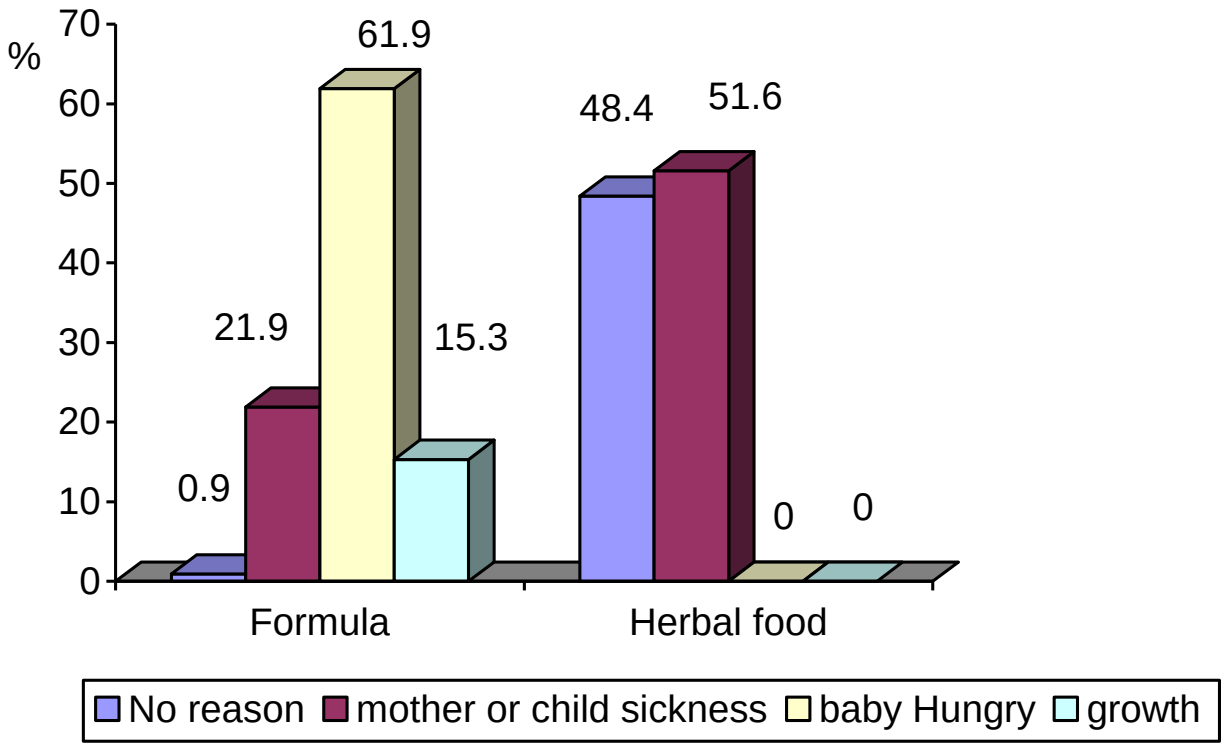

Figure 19 Distribution of study population by reasons of introducing supplementary foods

Regarding the sources of advices for introduction of supplementary foods to infant feeding during the first months of infant's life, it is obvious that 66% of the study population did not receive advice from any one , while 17.5% received it from their relatives, and 14.8% from the health staff. The media such as TV and Journals 0.5% had the lowest role in supplying mothers by information's about supplementary foods which must be introduced and the time of introducing (figure20).

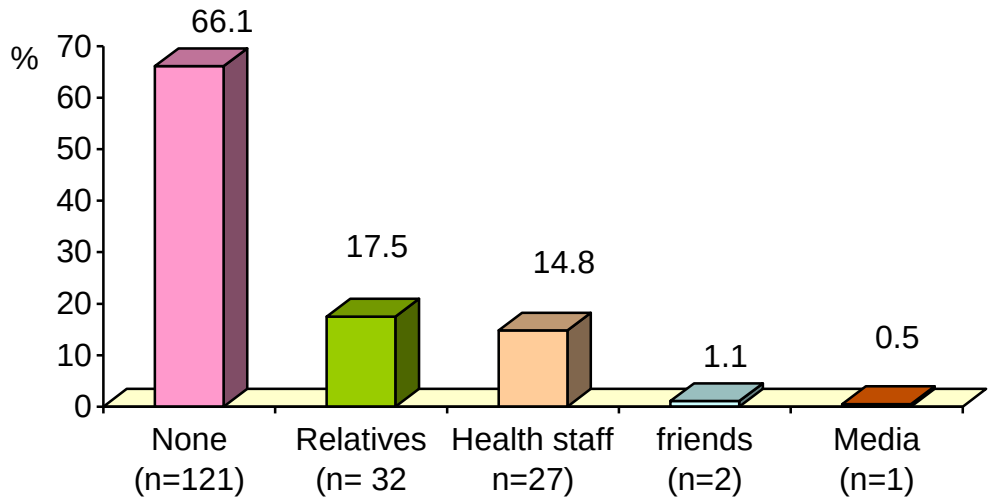

Figure 20 Distribution of study population by advice sources

The results revealed that 26.8% of women were suffering from breast pain when breast feeding their babies which prevents them to continue the breast feeding process, and 14.6% of them were complaining of psychological embarrassments when practicing breast feeding. Further more 59.5% of women were feeling that the Intifada had a negative effects on practicing and continuing breast feeding process properly (figure21) .

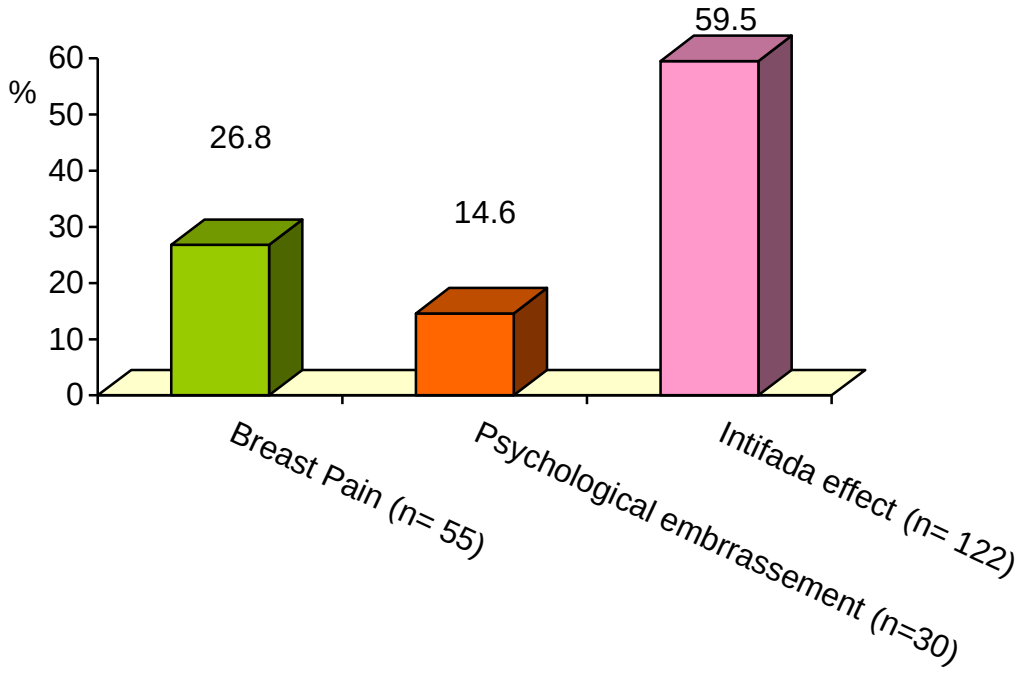

Figure 21 Distribution of study population by problems experienced by mothers during breastfeeding

Chapter Five

Discussion

Discussion

This chapter is discussing breastfeeding patterns among women in the north of Gaza.

5.1. Breast feeding patterns and trends

The results of this study indicated that only 19.1% of the study population were practicing exclusive breastfeeding for 4-6 months according to the WHO recommendations (31), and 12.2% of the population had practiced prolonged exclusive breastfeeding without giving any solid food after the first six months, with total exclusive breastfeeding rate for 4-6 months of 31.2%, this indicates that the exclusive breastfeeding trend went down when compared with exclusive breastfeeding rate in the north of Gaza 40.1% in the year 1997 (40), and 42.2% in Egypt (49). This trend reflected a reasonable tendancy towards mixed feeding 66.3%. The explanation of such increase in mixed feeding was attributed to the availability of formula in the Palestinian market and the intensive advertisement of formula. Also it could be attributed to the lack of knowledge of the Palestinian women about the benefits of breast feeding. The breastfeeding patterns related to educational level revealed differences but did not reach statistical significant level. The prolonged breastfeeding could be attributed to the lack of knowledge about the recommended period of breastfeeding and the time at which supplementary foods are needed where (66%)of women who introduce the supplementary foods was according to their own and not depending on previous experience or acquired advices from relatives , health professionals and information from the media. Such differences in breastfeeding pattern related to educational level could be compared with results of study conducted in Malezia which revealed that there was significant association between the educational level and knowledge of mother and feeding patterns P value=0.014 (31).

In spite of the high exclusive rate among refugees, the tendency toward mixed feeding also attributed to the dependence of refugees on the UNRWA aids which include formula milk. Such aids enabled 54.6% of the study population to obtain easily formula milk which explains also why the formula milk was the most supplementary food introduced to infants during the first four months. Exclusive formula feeding 2.4% were attributed to infant and mother illness, and such low percent did not refer to significant trend.

Regarding gender of baby, the pattern of exclusive breast feeding was more frequent among females 22.2% compared to 16.55% among males. Such results could be explained by the unfair fact that the Palestinian community is more biased to males than females which is forbidden in the Islamic legislations, and according to the dislocated culture of Palestinian mothers who believe that the early introduction of supplementary foods to baby enable him to grow .Regarding birth weight mixed feeding were more dominant among infants of small for gestational age received 81% than infants of appropriate for gestational age 65..5% or baby of large for gestational 50%.

This is attributed also to the mother's belief and culture.

Mixed feeding were more frequent among babies who were delivered with health problems 68% than those who were delivered without health problems 66.1% .But the baby of preterm was fed mixed 100% more than the baby of full term 65.3%.

The explanation of the high rate of mixed feeding among infants with health problems to loosing sucking abilities, such problem pushes the mother to use formula, other infant's health problems such as inborn errors (Phenylketonuria, Galactosemia and Lactose intolerance) contributes also in raising the rate of mixed feeding among those infants (96).

The unit percent of using mixed feeding among the preterm infants could be explained by the difficulties which face mothers when exercising milk and taking it to her preterm baby when it was needed .

5.2. Socio- Demographic Factors and Breast Feeding Patterns

5.2.1. Area of residency, Locality and Citizenship

The areas which are inhabited by refugees or receive maternal health service from UNRWA such as Jabalia camp 31% and part of Beit Hanoon 25%were practicing exclusive breast feeding more than areas which are inhibited by citizens and covered by MOH services such as Jabalia 15.5% and Beit Lahia Town 2.1%. The results also indicated that the areas of citizens were more tending towards mixed feeding while the rate of mixed feeding among refugee was not low. This could be explained by the observable tendency in Palestinian community towards the mixed feeding and that's due to the lack of knowledge of Palestinian women about the importance of exclusive breast feeding, the saturation of the Palestinian market with many kinds of formula, intensive advertisement which encourage the using of formula, and the availability of formula which provided by UNRWA to most of Palestinian Families as nutritional aids. In other words the differences in the feeding patterns of infants over the different areas and locality could be justified by the variety of health service providers, where the refugees received the health services from UNRWA health centers, while citizens received the health services from MOH centers. This variations in the health providers resulted in differences in the programs which were used in each organization to encourage breastfeeding, where the programs of UNRWA about breast feeding awareness and education are more active and effective than those practiced in MOH centers, where

14.8% of the study population received their advice about the supplementary foods from health staff, so this low percent highlighted two important points:

The health organization in Palestine needs to increase its attention and activities towards infant feeding and nutrition practice.

Cooperation between the different health organizations in the public health field especially in breast feeding domain should be existed.

The high rate of exclusive breast feeding among refugees could be also attributed to the culture of refugee women which differs from the culture of citizens, where the refugee women had tendency toward saving money than citizen women, also the refugee women who live in crowded areas under difficult conditions are accustomed to practice breastfeeding easily without disruption, while the native women prefer to practice their breastfeeding in separated area, so they feel uncomfortable when nursing their babies in public and this discomfort is a common cause for disrupting breast feeding process (80) which push the native mothers to use formula feeding in public areas increasing the rate of mixed feeding in the study population .

5.2.2. Parents' Age

According to the results of this study, it is observed that the mothers of age group (19-34) were more tend towards exclusive breast feeding and that is matched with a study conducted in the mountain and pacific region in United states which showed that the highest rates of breast feeding are observed among women > 30 years of age (77).

5.2.3. Parents' Educational level and Occupation

The results of this study also revealed differences in infant feeding patterns related to the parents' education, occupation and family income, where the rate of exclusive breast

feeding was the highest among the parents of high educational level 27-29% compared with parents of low educational level 14 -17% . This result was matched with the study conducted in United States which showed that the highest rate of breastfeeding was practiced by college educated women (77), and with other studies which showed that misinformation and insufficient parental breast feeding education are considered as obstacles to the initiation and continuation of breastfeeding (78, 79, 80).

The results of this study about the parents age, educational level are matched also with results of a study conducted in Benghazi which revealed, that the maternal characteristics of age and educational status had no obvious influence either on ever or exclusive breastfeeding practice (32).

5.2.4. Family Income, Nature and Problems

In this study it was observed that the exclusive and prolonged exclusive breast feeding is higher among the families of moderate income 38.4% and high income 35.5% compared with low income families 26.3%, such results were matched with results of a study conducted in United States which showed that breastfeeding was practiced more among women with high income than those with low income (77). The study also revealed that the rate of exclusive breast feeding among mothers who were living in nuclear families 20.7 % is higher than those who were living in extended families 16.9%. This result coincided with the study which was conducted in the United States (82) which showed that the presence of strangers or others in the place when breastfeeding her baby lead the mother to feel uncomfortable and this discomfort is a common cause of disruption when practicing breastfeeding, so the mother who lives in nuclear family nurses her baby

without interruptions of others when compared with mother who lives in extended family.

This study also showed that the rate of exclusive breast feeding is higher among women who did not suffer from family problems (with the family members such as suns, husband, grand parents etc ...). This could be explained by the fact that those women with no family problem have a normal environment which encourages her to breastfeed with family support and approval (84), and more over mothers can produce milk normally, while mothers who complains from family problems cannot produce enough milk to lactate their babies, in addition they cannot receive family support for breast feeding. That's confirmed that the family problems are considered as a reason for cessation of breastfeeding (27).

5.2.5. Friendship, Relation with and Roles of Relatives and husbands

The results of this study showed differences between breastfeeding patterns related to friendship degree, these differences reached significant level, so exclusive breastfeeding increased when mothers were in worm friendship. This encourage the idea of that the mother of good relationship with her friends seems to be in acceptable health situation and so good physiological function which enables her to produce sufficient milk and push her to nurse her baby very well depending also on her friend's advice .The results also showed differences related to relationship with sisters but did not reach significant level Differences related to husband's role with feeding patterns did not reach significant level ,but it was observed that the exclusive breast feeding increased among families of constructive role (supporting breastfeeding) 21.8% compared with families of destructive role of husbands 12.5%. This could also explained by socio-psycho-physiological model

which assumed that the healthy environment and culture socially give chance for absence of or non developing the psychological disorders which then leads the organs of body to function well and not to be ill. So the presence of constructive husband's role in the family reflected a good relationship between husband and mother which support her socially and psychologically and leads her to be well when nursing her baby. This could be matched with Pennsylvania study which revealed that 36% of women who used formula cited the discomfort of father with nursing (99). The result was also matched with another study which showed the role of psychological factors in reducing breast feeding during the first 6 months of life (95).

Regarding the role of grand- parents in relation to breast feeding patterns, the differences did not reach significant level, but the results showed that families of negative role of grand parents in caring the baby result in high exclusive breast feeding rate 26.8% in comparison with families of positive role of grand parents 17.7%. That's attributed to the fact that the grandparents are always interested in infant's health and growth, so when they experience a positive role in caring the baby they encourage the adding of supplementary foods to infant feeding early, but when they experience negative role they will not encourage adding supplementary foods which increased the chance for continuation of exclusive breast feeding.

The results of the study also demonstrated that the women who were exposed to tiredness in home duties were more tend toward exclusive breast feeding 23.3% compared to 13.5% of those who were not. This could be attributed to that the women of tiredness complaint had no enough time to prepare the formula feeding which considered as additive duty to her responsibilities so she prefers to breastfeed her baby, considering the

time of nursing as rest interval. Studies also showed that the mother derives much satisfactory and fulfillment sense when nursing her baby and relieve her tiredness and refresh her for more duties (58).

5.3. Health Services provider and Breast Feeding Patterns

The study showed high differences in the breastfeeding patterns related to health services provider which reach to significant level, where the women who received health services from UNRWA health centers were more practicing exclusive breast feeding 29.9% and prolonged exclusive breast feeding 15.5%, than those who received health services from MOH who were more tending toward formula 3.7% and mixed feeding 77.8%. This significant variation was attributed to the high quality MCH services which provided in UNRWA primary health care centers, and the effective programs which applied in the field of infant's feeding. So further studies about the evaluation of quality and content of maternal childhood services in both MOH and UNRWA should be conducted in the future.

5.4. Women Health and Nutritional status and Breast feeding Patterns

Previous studies indicated that mother health status affects the weaning age (85, 86, 87). And that's was the same result in our study , where the women of chronic diseases were of less tendancy towards exclusive breast feeding 5.6% while mother of good health status were more tending toward exclusive breast feeding 20.3%. These differences in breast feeding patterns related to women's health status were considered as logical differences in spite of not reaching the significant level.

Regarding the nutrition status of women, the results of this study showed that the women of poor and very poor nutritional status in either quantity or quality were more tending

towards exclusive breast feeding compared with those of normal or good nutrition status. This result seems to be a strange result, where it is supposed that the women of good and normal nutrition status, will have good health and normal organs functions, and enough milk production which encourages the women to continue breast feeding exclusively in the first four or six months of infant's life and vice versa. But this result cannot match with such presumption; the justification for this strange result is that the evaluation of the level of nutritional status among women depends on her answerer about her nutritional status which also depends on her culture, knowledge, educational level. So, asking mothers are not valid and reliable tool and need more accurate and reliable measures. Or this result could be explained by the absence of breastfeeding alternatives for women of poor and very poor nutritional status. This explanation confirmed the economic benefits of exclusive breast feeding where the cost of needed caloric intake for breast feeding is about half the cost of purchasing formula (71, 72).

5.5. Infant Health Status, Birth Weight and Breast Feeding Patterns

The study results showed that the Palestinian women tend toward mixed feeding if their babies were born with health problems 68%, or preterm 100% or small for gestational age 81%. Where there were high significant differences in breastfeeding patterns related to birth weight. This reflected the belief of the Palestinian women that the presence of supplementary foods beside breast feeding in early life of infants increase the growth and improve the health status. This belief which existed in the Palestinian women's mind was resulted from wrong massages about breast feeding from different sources such as misinformation from the health professionals, wrong advice received from relatives and friends or the Media about Formula. These beliefs need a change, and such change needs

Intensive efforts and cooperation between different sectors in the Palestinian community to change women's mind toward correct knowledge, attitudes and practices. So it is important to investigate this attitudes and its sources seriously in the future studies.

5.6. Feeding Practice

5.6.1. Initiation of Breast Feeding

In spite of the high rate of initiation of breast feeding in North Gaza in Palestine which is considered as the highest rate recorded in the world 97.6% which similar to results in Egypt and Iran in the middle east (38) and similar to results in China, Bangladesh, India , Indonesia Thailand, and Pakistan in Asia (38, 40), but there is clear drop in the rate of continuation of exclusive breast feeding during the first 4 months and in the rates of continuation of breast feeding. The rate of exclusive and prolonged breastfeeding 31.2% reflected that many factors that interfered with continuation of exclusive breast feeding, such as locality, area of residency, health services provider programs, and some socio-economic factors such as age, educational level of parents, and family nature, culture, relationships and presence of problems, in addition to health status of mother and the health status and birth weight of infants. So studies should be continued seriously to develop the breastfeeding status.

The rate of exclusive breast feeding in Palestine is low when compared with other countries in the world such as Rwanda 90%, and other neighboring countries such as Egypt 56% , Iran 56% and Jordan 48% (38, 51), on the other hand This figure of this study is similar to that in Canada and USA 31% and 32.5% respectively (45, 46). More over this rate reflected that even the concept of exclusive breast feeding in North Gaza

women is not accurately understood, because there are 12.2% of them practice exclusive breast feeding for long period (more than 6 months) and this pattern of breast feeding also is not healthy for infant health and growth.

Regarding the stop of breast feeding during the first 18 months, 12 months, and 6 months. It is found in this study that 23.9% of the sample had been stop the breast feeding during the 18 months that means that only 76.1% of sample continue breast feeding during the first 18 months of infant life and about 83% of the sample continue breast feeding during the first year of infant life where 17% of the sample stop breast feeding during the first year of life. In the first six months of life about 90% continue breast feeding. Due to the above results it is clear, that about 10 - 25% of infants lost the benefits of breast feeding during the first 18 months of their life.

The current study showed that about 82% of women have dislocated knowledge about stopping breast feeding during the first 18 month, where most of them stopped breast feeding because they thought that it is good to stop breast feeding at such age.

This supports the previous interpretation of the causes and explanations of the increase of formula feeding. The lack of correct knowledge about the healthy feeding patterns had led women to believe that they practice the correct one when continuing or stopping exclusive or mixed breastfeeding. Another reason for stopping breast feeding was the "insufficient milk" 4%, compared with results of Palestinian research which conducted in 1997 and revealed that "the not enough milk" reason was 14.1% (56). Also in this study the results revealed that 14% of mothers who stopped breast feeding were attributed to mother or infant diseases while a Palestinian research revealed that 17% of mothers who stopped breast feeding were attributed to pregnancy status (56).

5.6.2. Frequency and positions of Breast feeding

Regarding the frequency of the breastfeeding times during the first six months, the study showed that there was wrong practice, where about half of the study population was feeding their infants less than ten times. This could be explained by that the decrease of frequency was compensated by formula feeding, where the percentage of mixed and formula feeding in the first months of infant life was 69% , or by the explanation that those infants were not fed enough. In the two conditions, it is clear that there was disruption in the breastfeeding practicing. In the first condition the mothers added supplementary foods or formula milk which is not recommended at this age of infants, and in the second condition there is real decrease in the number of breastfeeding times which means that there is malnutrition. The two conditions reflected malnutrition indicator either quantitative or qualitative. This wrong practice is attributed to lack of knowledge and misinformation of women about the recommended breast feeding pattern and practice. As the results demonstrate, it is clear that the position of breastfeeding was the most correct practice among Palestinian women in the North Gaza, where 82% of them were using cardle and cross cardle position, and only 13% were feeding their baby by side lying position. These positions reflected that the percentage of using cardle and cross cardle is coincident with the rate of babies who was born normally 83.9% and the percentage who labored by C.S also coincident with the rate who used side lying position. It is concluded that the Palestinian women was using the recommended position according to their conditions for breast feeding. This explanation of the good practicing of breastfeeding positions in the North of Gaza is that it was acquired just by imitation (vision), in other words the women acquired this practice by asking each other about the

correct method for lactating their babies, moreover this practice remains under the concept of trial till the woman and her baby reach the right comfortable position (134).

5.6.3. Introduction of Supplementary Foods

The results showed that the most frequent supplementary was the formula milk. The explanation of using of formula milk too much was attributed to the availability of formula milk in the markets and attributed also to that formula milk not digested easily which leads the baby to feel saturated for long period (135), where this study revealed that the main cause of introducing the formula milk was baby's hunger 61.9%, then the mother and child disease 21.9%, then the desire for child's growth 15.3%. So it is clear that infant's hunger is the main cause of introducing supplementary foods. So the explanation that the introducing of formula milk in infant feeding especially in the first months of infant's life is due to the availability of formula milk in most of Palestinian families, child's hunger, and other explanations mentioned above. The home made food is considered as the second common supplementary which introduced for infant's feeding and especially after the first 4 months of infant life, because of its availability and low cost. It is important to focus on the introduction of fluids which derived from plants such as tea and yansoon which considered as social habits that acquired from older women by the younger mothers, where those fluids considered as the second common foods introduced for infant feeding in the first four months of infant's life. There are many factors that affect the introduction of home made food, the first one is the low cost of such food which saves money from the economic view for the family, the second factor is the effect of this food on sedation of baby which let him / her to feel saturated, the third is the social habits which acquired by younger women from orders without checking the

level of accuracy of these habits or knowledge. This presumption is supported by the results of this study which demonstrated that the advice for introducing supplementary foods wasn't received from any one, which means that those women acquired this practice without realization from the society and media. So the social factor is considered as important factor that affects habits and behaviors of the study population especially their lifestyle such as feeding and other practices during the first month, the first 6 months, first year, and first 18 months. The rate of initiation of breast feeding in North Gaza is coincident with the rates of the survey which was conducted in the West Bank and Gaza Strip, and with the rates of research which was carried out in Gaza (55, 56) in the years 1991/1992, 1997 respectively.

Chapter six

Conclusion and recommendations

Conclusion and recommendations

6.1. Conclusion

The present work indicates that the practicing of the breastfeeding patterns exposed to different disrupting factors which violate the WHO recommendations of breastfeeding. So, according to the study results and findings, we concluded that the breastfeeding in the North of Gaza is still not optimum.

The mixed feeding pattern's rate (66.3%) indicated that the Palestinian women tend toward mixed feeding instead of exclusive breastfeeding pattern, and indicated also that the Palestinian women did not realize the meaning of exclusive breastfeeding and its benefits and the recommended period, which was reflected by the rate of prolonged feeding pattern (12.2%).

In spite of the low rate of the exclusive formula feeding (2.4%), we concluded that such low rate should be minimized.

From the high rate of mixed feeding pattern, we concluded that the exclusive breastfeeding pattern (19.1%) very low and needs hard effort to reach it to advanced rate such as the rate recommended in the Egyptian health strategy (80%) in the year 2000(45%).

We concluded also that there were lack of knowledge for the Palestinian women, and there were less supportive effort from the Palestinian official health organization compared with UNRWA services.

6.2. Recommendations

Health education programs for breastfeeding should be well planned and address the factors which reinforce and enable breastfeeding.

Breastfeeding support groups should be used to expand, to counsel, convince and change the behavior of women in the North of Gaza who do not attend MOH and UNRWA facilities in the field of breastfeeding.

Health team members should be properly trained in breastfeeding essentials and in the communication skills. They should be well motivated to carry out their responsibilities in the promotion of breastfeeding and should be sensitized both to the need for change and how to introduce it.

The Palestinian Authority represented in MOH, should carry out its responsibility to face the dangerous aggression of bottle feeding and the wide spread formula propaganda, by means of contradictive campaigns in the Palestinian T.V and the official newspapers and magazines

Health professionals should play constructive role in promoting the recommended practicing of breastfeeding by means of their scientific advice to breastfeeding mothers to increase their awareness about breastfeeding.

Ministry of health have to generalize a written instructions for all primary health care centers about the breastfeeding promotion, including warning statement to any health professional who violate such instructions .

The decision makers in our country have to consider the breastfeeding as one of the important issues and give it more space on their agenda if they want to obtain strong and productive Palestinian generations.

MOH have to impose a discriminating measures against any health professional who advices mothers to use formula milk on the expense of infant health future, for money or motivations from the formula dividers or companies .

The researcher suggests that MOH should take some hard measures against any formula products which are not containing a warning phrase "for infant health don't use this product without pediatrician advice".

The researcher suggests that the ministry of education should take parallel effort to promote breastfeeding by educative programs in the primary and secondary schools about breastfeeding and its benefits .

Research recommendations

Further studies are needed to find the optimum ways to overcome the difficulties that impede the exclusive breastfeeding practicing in the north of Gaza.

Study including all provinces of Gaza is needed to obtain more representative results about breastfeeding status.

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APPENDICES

Appendix 1

استبانة حول الرضاعة الطبيعية في شمال غزة

الرقم المتسلسل:----------.

العيادة: □ حكومة □ وكالة

المنطقة: □ بيت حانون □ بيت لاهيا □ جباليا

أولا: معلومات شخصية وأسرية

مكان الإقامة: □ قرية □ معسكر □ مدينة

الحالة المدنية: □ مواطن □ لاجئ

تاريخ الميلاد: اليوم----------/ الشهر ----------/ السنة---------- .

وزن الطفل عند الولادة:---------- كجم.

وزن الطفل حاليا:---------- كجم

عمر الأم:---------- سنة.

عمر الأب:---------- سنة.

عدد سنوات دراسة الأم:---------- سنة.

عدد سنوات دراسة الأب:---------- سنة.

عمل الأم:----------.

عمل الأب:----------.

طبيعة الأسرة: آ نووية آ ممتدة.

القرابة بين الزوجين: آ لا يوجد آ قرابة درجة أولى آ قرابة درجة ثانية.

العلاقة بين الزوجين: آ جيدة آ يوجد مشاكل آ انفصال.

نوع السكن: آ اسبست آ باطون شقة في عمارة أو برج آ باطون فيلا.

ملكية السكن: آ ملك كامل آ ملك أقساط آ ملك للعائلة آ إيجار.

عدد الغرف في السكن: ----غرفة ------دورة مياه ------ مطبخ -------- ملحقات

مساحة السكن: ----------م^2 .

إذا كانت الأسرة نووية: عدد أفراد الأسرة النووية:---------- فرد.

إذا كانت الأسرة ممتدة: عدد أفراد الأسرة التي تعيشون معها:----------فرد.

ثانيا: معلومات اجتماعية واقتصادية:

هل تواجهك مشاكل أسرية في الوقت الحالي؟ آ نعم آلا

إذا نعم: ما هي طبيعة هذه المشاكل؟ آ اجتماعية آ اقتصادية آ سياسية.

إذا اجتماعية: مع آ الزوج آ الأبناء آ أهل الزوج أو أقاربه آ أقاربك آ أصدقائك وزملاءك.

إذا اقتصادية: سببه:آ قلة الموارد المالية آ كثرة الالتزامات الأسرية آ عدم التزام الزوج.

إذا سياسية: شكلها: آ اعتقال الزوج آ استشهاد الزوج آ قرب من مناطق التماس آ اعتقال اواستشهاد أحد الأقارب.

عدد الأصدقاء:----------

طبيعة العلاقة مع الصديقات: آ حميمة آ عادية.

عدد الأخوات: ---------- أخت.

طبيعة العلاقة مع الأخوات: آ جيدة آ سيئة.

هل لأحد الجدتين دور في رعاية الطفل؟ آ نعم آلا

إذا نعم: هل ترين أن هذه الرعاية ايجابية أو سلبية؟ آ ايجابية آ سلبية

إذا كنت عاملة: أين تضعين طفلك فترة عملك؟ آ حضانة آ عند أهل الزوج آ عند أهلك آ حضانة عمل

كم ساعة تقضين في عملك بعيدة عن طفلك الرضيع؟ ---------- ساعة.

ما تقييمك لمستوى رعاية طفلك الرضيع في المكان الذي تضعينه فيه أثناء عملك؟ أ جيدة أ سيئة

ما هي الوسيلة البديلة للرضاعة الطبيعية لطفلك أثناء غيابك عنه؟----------

---

هل تعملين عمل البيت لوحدك؟ أنعم أ لا

إذا لا: من الذي يساعدك في عمل البيت؟ ----------

هل تشعرين بالتعب أثناء عملك في البيت؟ أنعم أ لا

هل تشعرين أن عملك في بيتك يؤثر على رضاعتك لطفلك؟ أنعم أ لا

إذا نعم: كيف؟ ----------

متوسط دخل الأسرة شهريا:---------- سيقل جديد شهريا.

ثالثا: معلومات عن صحة الأم والطفل:

هل تعانين من الأمراض الآتية:

أمراض مزمنة □ نعم □ لا

إذا نعم ما هو المرض ؟.....وما هو العلاج ؟.....

أمراض نفسية □ نعم □ لا

إذا نعم ما هو المرض ؟.....وما هو العلاج؟.....

أمراض معدية □ نعم □ لا

إذا نعم ما هو المرض؟.....وما هو العلاج؟ .....

هل لأي من الأمراض السابقة تأثير على رضاعتك لطفلك؟ :أ نعم أ لا

إذا نعم: أذكري المرض:---------- وكيف يؤثر؟----------

هل لأي الأدوية السابقة تأثير على رضاعتك لطفلك؟ :أ نعم أ لا

إذا نعم: أذكري العلاج:---------- وكيف يؤثر؟----------

هل أجريت أي عمليات جراحية في صدرك؟ أ نعم أ لا

إذا نعم ما السبب؟---------- و متى؟----------

كيف تصفين غذائك اليومي من حيث الكم والنوع؟

الكم : أ جيد أ عادي أ ضعيف أ ضعيف جدا

الكيف أ جيد أ عادي أ ضعيف أ ضعيف جدا

هل تركزين في غذائك أثناء فترة الرضاعة على مواد معينة؟ أ نعم أ لا

إذا نعم: ما هي هذه الأغذية؟----------

هل ولد طفلك بمشاكل صحية؟ أ نعم أ لا

إذا نعم: ما هي هذه المشكلة؟----------

كم استمرت فترة حملك بهذا الطفل؟----------أسبوع.

كيف كانت ولادة طفلك؟ أ طبيعية أ قيصرية أ أساليب أخرى: ----------

هل استقبلت طفلك مباشرة بعد الولادة و ضممته إلى صدرك؟ أ نعم أ لا

هل أ دخل طفلك الحضانة بعد الولادة مباشرة؟ أ نعم أ لا

إذا نعم: سبب دخوله الحضانة:----------

هل كان دخوله للحضانة تأثير على رضاعته الطبيعية؟ أ لا أ أخرت رضاعته الطبيعية أ حرمته من الرضاعة الطبيعية

هل أرسلت له حليب من صدرك؟ ؟ أ نعم أ لا

رابعا: معلومات عن الرضاعة وأساليبها:

هل كانت أول رضاعة لطفلك من صدرك؟ أ نعم أ لا

إذا نعم: متى كانت أول رضاعة من صدرك بعد الولادة؟ ----------

إذا لا: ما السبب؟ ----------

هل استقبلت طفلك مباشرة بعد الولادة مباشرة و ضممته إلى صدرك؟ أ نعم أ لا

إذا كان قد دخل الحضانة بعد ولادته مباشرة هل أرسلت له حليب من صدرك؟ أ نعم أ لا

هل ما زلت ترضعينه؟ أ نعم أ لا

إذا لا: ما السبب:----------

--- إذا ما زلت ترضعينه: هل هناك مواد إضافية تضيفينها له بجانب الرضاعة؟ آ نعم آ لا

إذا نعم: من متى بدأت بذلك؟ ---------- هل تعتقدين ذلك صحيح؟ آ نعم آ لا

إذا نعم: من أين أتيت بتلك المعلومة؟---------- وما هي المواد التي تضيفيها بجانب الرضاعة؟----------

---

كم مرة كنت ترضعينه يوميا من ثدييك أثناء الأشهر الأولى من عمره؟ ----------

كم مرة ترضعينه يوميا الآن؟ ----------

هل ترضعينه من الثديين في المرة الواحدة؟ آ نعم آ لا

ما هي مدة الرضاعة من الثدي الواحد؟---------- دقيقة.

هل تعانين من مشاكل أثناء إرضاعك لطفلك؟ آ نعم آ لا

إذا نعم: مشاكل نفسية: آ نعم آ لا السبب:----------

مشاكل عائلية: آ نعم آ لا السبب:----------

مشاكل عضوية: آ نعم آ لا السبب:----------

هل هناك إزعاجات أو مضايقات تواجهينها أثناء إرضاعك لابنك؟ آ نعم آ لا

إذا نعم ما شكل هذه الإزعاجات ؟ ----------

كيف ترضعين طفلك؟----------

----------.

من أين حصلت على معلوماتك حول طريق الرضاعة الطبيعية الصحيحة؟ ----------

هل تعتقدين أن هذه المعلومات صحيحة؟ آ نعم آ لا

إذا لا: لماذا؟----------

هل هناك فرق بين إرضاعك لطفلك هذا وغيره من أبناءك؟ آنعم آ لا

إذا نعم: ما السبب؟----------

هل هذا الفرق في طريق الرضاعة اظهر اختلافا في صحة طفلك؟ أنعم أ لا

إذا نعم: كيف؟----------

إذا كنت فطمت طفلك: متى فطمته؟ ----------.

لماذا فطمته؟----------.

هل للوضع السياسي الذي نعيشه تأثيره على إرضاعك لطفلك؟ أ نعم أ لا

إذا نعم؟ كيف؟ ----------

هل ما زلت ترضعين طفلك رضاعة طبيعية (من صدرك)؟ أ نعم أ لا

إذا لا: ما سبب توقفك عن إرضاع طفلك رضاعة طبيعية؟ ----------

ومتى توقفت عن إرضاعه رضاعة طبيعية؟----------

إذا نعم: هل ترضعينه رضاعة طبيعية (من صدرك) فقط؟ أ نعم أ لا

إذا نعم: إلى متى ستستمرين برضاعته الطبيعية المطلقة؟----------

إذا لا: ارجوا تعبئة الجدول التالي

المادة المضافة	عمر الطفل عند الإضافة	عدد مرات الإضافة/اليوم	سبب الإضافة

من نصحك بإعطائه هذه المواد الإضافية؟----------

هل كانت أول رضاعة لطفلك من صدرك؟ أ نعم أ لا

إذا نعم: متى كانت أول رضاعة من صدرك بعد الولادة؟ ----------

كم مرة كنت ترضعينه من صدرك في اليوم الواحد في (الأشهر الستة الأولى)؟----------/ اليوم.

إذا لا: ما السبب؟ ----------

كم مرة ترضعينه من صدرك الآن؟ ----------/ اليوم.

هل ترضعينه من الثديين في المرة الواحدة؟ آ نعم آ لا

ما هي مدة الرضاعة من الثدي الواحد؟---------- دقيقة.

إذا كنت ترضعينه من الثديين ما هي مدة الرضاعة الإجمالية من الثديين الواحد؟---------- دقيقة.

ما هي الوضعية التي ترضعين أو كنت تضعين بها طفلك؟----------

هل تعانين أو كنت تعانين من مشاكل أثناء إرضاعك لطفلك؟ آنعم آ لا

إذا نعم:

مشاكل عائلية: آ نعم آ لا السبب:----------

مشاكل عضوية: آ نعم آ لا السبب:----------

مشاكل نفسية: آ نعم آ لا السبب:----------

هل هناك إزعاجات أو مضايقات تواجهينها أثناء إرضاعك لطفلك؟ آنعم آ لا

أذكري الظروف التي أعاقت أو تعيق عملية الرضاعة الطبيعية من صدرك لطفلك؟----------

---

هل تعتقدين أن ظروف الانتفاضة التي نعيشها لها تأثير على رضاعتك الطبيعية لطفلك؟ آنعم آ لا

إذا نعم: كيف تؤثر هذه الظروف على رضاعتك؟----------

هل كان هناك اختلافات بين إرضاعك لطفلك الحالي والأطفال السابقين ؟ نعم □ لا □

إذا نعم ما هو سبب ذلك ؟.....

.....

.....

هل سببت هذه الاختلافات تغيرات فى صحة الطفل ؟ □ نعم □ لا

إذا نعم كيف حصل ذلك ؟.....

.....

هل تدركين فوائد الرضاعة الطبيعية ؟ □ نعم □ لا

إذا نعم اذكريها.....

.....

بسم الله الرحمن الرحيم

مقدمة الاستبانة

تتمحور هذه الدراسة حول نماذج الرضاعة وطرق ممارستها والعوامل التي قد تعيقها في شمال غزة يقوم بها الطالب الباحث/ سعيد محمد 'إبراهيم، وهو طالب ماجستير في جامعة القدس.

عزيزتي الأم:

نأمل منك المشاركة في إنجاح هذه الدراسة عبر تزويدنا ببعض المعلومات التي تساهم في تحقيق أهداف هذه الدراسة لنتمكن من الوصول إلى وضع أفضل للرضاعة الطبيعية في بلدنا فلسطين، علماً بأننا سنحافظ على سرية المعلومات التي سنحصل عليها ولن يطلع عليها سوى الباحث وأن نتائج الدراسة ستكون عامة وعلى شكل معدلات وأشكال إحصائية ولا تحتوي على أسماء أو عناوين، ومن حقك الموافقة أو الرفض في المشاركة.

طالب ماجستير الصحة العامة

سعيد محمد إبراهيم

Appendix 2

بسم الله الرحمن الرحيم

إخطار بالموافقة

التاريخ ----------/----------/2004

اسم المشاركة :----------

أشهد أنني قد قمت بإجراء المقابلة مع السيدة المذكورة أعلاه وأنها قد علمت مسبقا بكل الأمور والظروف المتعلقة بالدراسة، وبأن لها حق الاختيار في الإجابة على أسئلة الأستبانة أو عدم الإجابة، كما أنها علمت بأن لها حق الانسحاب من الإجابة في أي وقت ترغبه أو عدم الجواب على أي سؤال لا ترغب الجواب عليه، كما أنها أدركت أن المعلومات التي سنحصل عليها في الاستبانة سرية وخاصة ولن يطلع عليها أحد سوى الباحث.

اسم وتوقيع مجري المقابلة----------

Appendix 3

QUESTIONNAIRE ABOUT BREASTFEEDING IN THE NORTH OF GAZA

Serial number …….

Clinic : MOH □ UNRWA □

Zone Biet hanoun □ Biet lahia □ Jabalia □

First :Family and personal profile :

Residency place Village □ Camp □ City □

Civilian case Citizen □ Refugee □

Birth date Day……/ month……../ Year…….

Infant age in months …….

Gender Male □ Female □

Birth weight after delivery ……..kg

Current weight …….kg

Infant order …….

Mother age ……. Years

Father age ……years

Study years for mother ……years

Study years for father ……years

Occupation (mother) ……..

Occupation (father) …….

Family nature nuclear □ extended □

Consanguinity there is no □ first degree □ second degree □

Relationship between couple good □ there is problems □ divorced □

Housing type asbestos □ flat in building □ villa □

House ownership completely owned □ family owned □ rented □

Number of units in the house rooms …… kitchen ….. WCs …..annexes ….

House area ……m²

If the family is nuclear ,what is the number ? …….person

If the family is extended ,what is the number ? …….person

Second : social and economic profile :

Do you face family problems now ? yes □ no □

If yes : what's the nature of the problems social □ economical □ political □

If it is social with husband □ with sons □ with husband family □ with relatives □ with friends and fellows □

If it is economical ,that's because : lack of money □ increased responsibilities of the family □ no committed husband □

If political : resulted from : husband detention □ husband death □ living near check points or borders □ detention or death of some relatives □

Friends number ……..

Nature of relationship with friends : worm □ normal □

Number of sisters …….

Nature of relationship with sisters good □ bad □

Is there a role for grand mothers in sponsoring the baby ? yes □ no □

If yes : do you this sponsoring : constructive □ destructive □

If you are working woman : where do you leave your baby ? with husband's family □

with your family □ with you in the work field □ in nursery

□

What is the period do you stay at work distant of your baby ? ……hours

How can you evaluate the level of sponsoring at the place which you put the baby in ?

good □ bad □

What is the breast milk alternative during your absence of the baby ?.....

……..

Do you finish your home work alone ? yes □ no □

If yes , from whom do you receive assistance ? …….

……..

Do you feel tired during homework ? yes □ no □

Do you see that that your homework affects your breastfeeding practicing ?

Yes □ no □

If yes , how it affects breastfeeding ?.....

……

Average income /month…….SN

Third : mother-child health profile

Do you suffer from the following diseases ?

Chronic diseases yes □ no □

If yes , what is the disease ?....., and what is the treatment ?

……

Psychological diseases yes □ no □

If yes , what is the disease ?....., and what is the treatment?.....

…….....

Infectious diseases yes □ no □

If yes , what is the disease ?....., and what is the treatment?.....

Does any kind of the previous diseases affect the breast feeding ? yes □ no □

If yes , what the disease ?....., and how does it affect your practicing

?.....

Does any kind of the previous medicine affect your breastfeeding ?

Yes □ no □

If yes , what is that medicine ?....., and how does it affect your breastfeeding

?.....

Do you exposed to breast surgery ? yes □ no □

If yes , what was the cause ? ……, and when it was done?.....

……..

How do you describe your daily food ?

Quantity good □ normal □ few □ very few □

Quality good □ normal □ poor □ very poor □

Do you concentrate on certain food during breastfeeding ? yes □ no □

If yes , what is that food ?.....

Did your baby was born with health problems ? yes □ no □

If yes , what was the problem ? …….....

What was your pregnancy duration ?.....weeks

What was the nature of delivery ? normal □ cesarean □ other methods □

Do you receive your new born directly after delivery and put her/ him on your chest (skin to skin) ? yes □ no □

Did your baby enter the incubator directly after delivery ? yes □ no □

If yes , what was the cause to enter the incubator ?.....

……

Did that entry affected the breastfeeding ? no □ delayed it □ stopped it □

Did you send to him exercised breast milk ? yes □ no □

Fourth :information about breastfeeding and its practicing

Do you still breastfeed your baby ? yes □ no □

If no ,what was the cause of weaning ?.....

When did you stopped breastfeeding ?.....

If yes , do you breastfeed exclusively (without additional food) ? yes □ no □

If yes , Till what time do you want to continue breastfeeding exclusively ?.....

If no fill the following table

Kind of additional food	**Infant age when receive the food**	**Times/day**	**Reason**

Who advised you to give such supplementary feeding ?

Did the baby's first feeding was from your breasts ? yes □ no □

If yes , when did you breastfeed after delivery

?.....

How many times do you breastfeed /day in the first six months ?

……..

If no , what is the reason

?.....

How many times do you breastfeed now /day ?

Do you breastfeed your baby from both breasts in each time ? yes □ no □

What is the breastfeeding time from each breast ? …… minute

If you breastfeed from both breasts , what is the total time of breastfeeding ?

……minute

What is your position when you practice breastfeeding ?

……

……

Do you face problems during breastfeeding ? yes □ no □

If yes , was it

Organic problems (pain) yes □ no □

Psychological problems yes □ no □

Do you face interruptions and annoyances during breastfeeding yes □ no □

Mention the conditions which obstruct your breastfeeding practicing ? ……..

……

Is their a role for your husband about breastfeeding ? promoting and constructive □

Destructive and source of anxiety □ with no role □

Do you think that Intifada conditions influenced your breastfeeding ? yes □ no □

If yes , how did those conditions influence breastfeeding ?.....

……

.Was their a differences between the current baby and his brothers in breastfeeding ?

yes □ no □

If yes , what was the reason ? ……

……

Did those differences cause variations in baby's health ? yes □ no □

If yes , how it occurred ? ……..

Do you realize the breastfeeding benefits ? yes □ no □

If yes , mention

:…….

……

Questionnaire introduction

This study revolves around patterns and practice of breastfeeding , and the disrupting factors in the North of Gaza stip . The study is prepared by researcher/Said Mohammed Ibrahiem the student of Master Degree in AL-Quds university .

Dear mother :

I hope you to participate in this study and provide us with some information which will contribute in achieving the objectives of the study , which enables us to reach better situation of breastfeeding in our country Palestine , in the mean time we have to keep the information secret , and no one have the right to see it except the researcher .

The results of the study would be in the form of rates and statistical meanings and not include any names or addresses . Also you have the right to accept or refuse to participate .

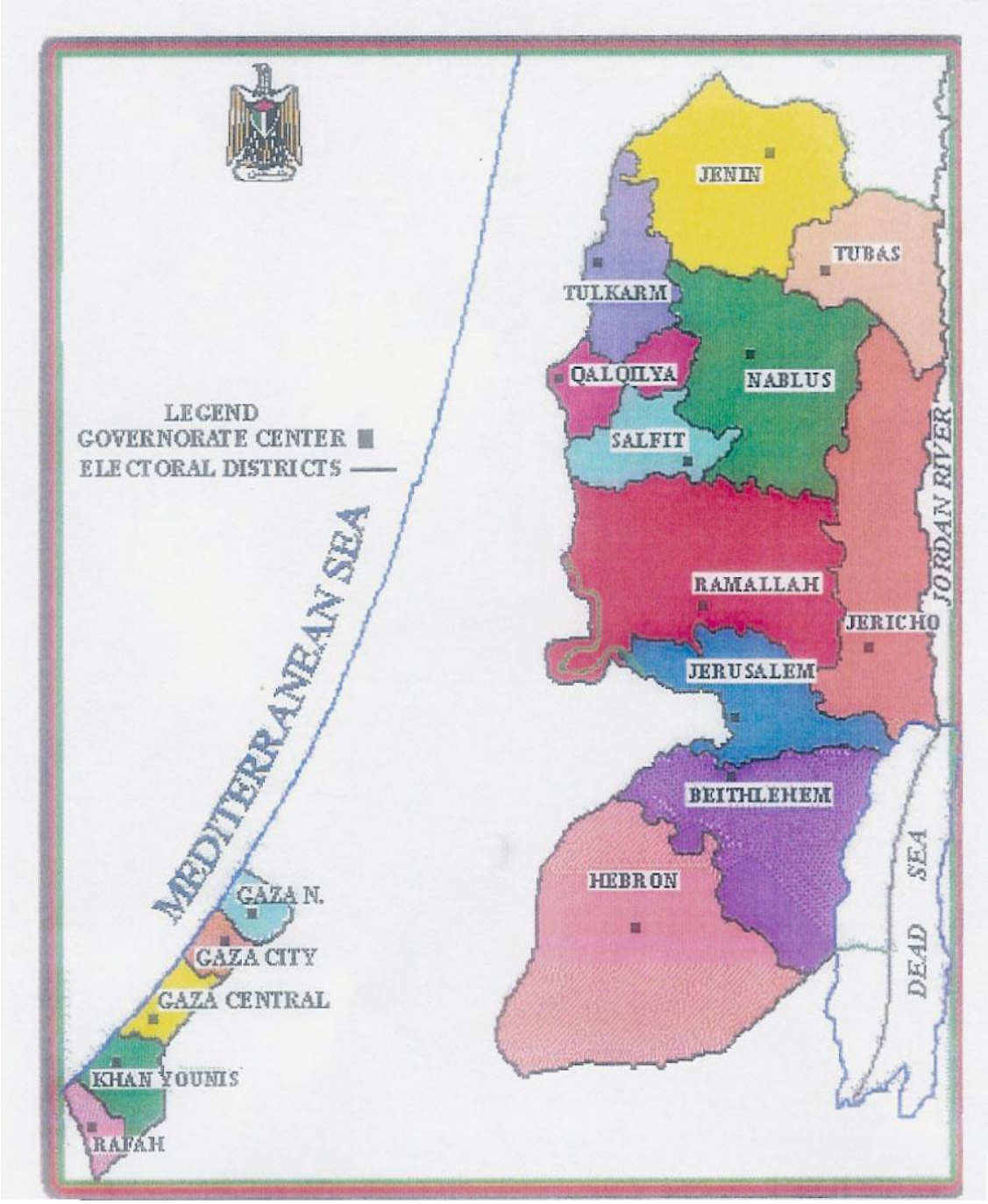
Student of Master Degree in public health

Said .M.Ibrahiem

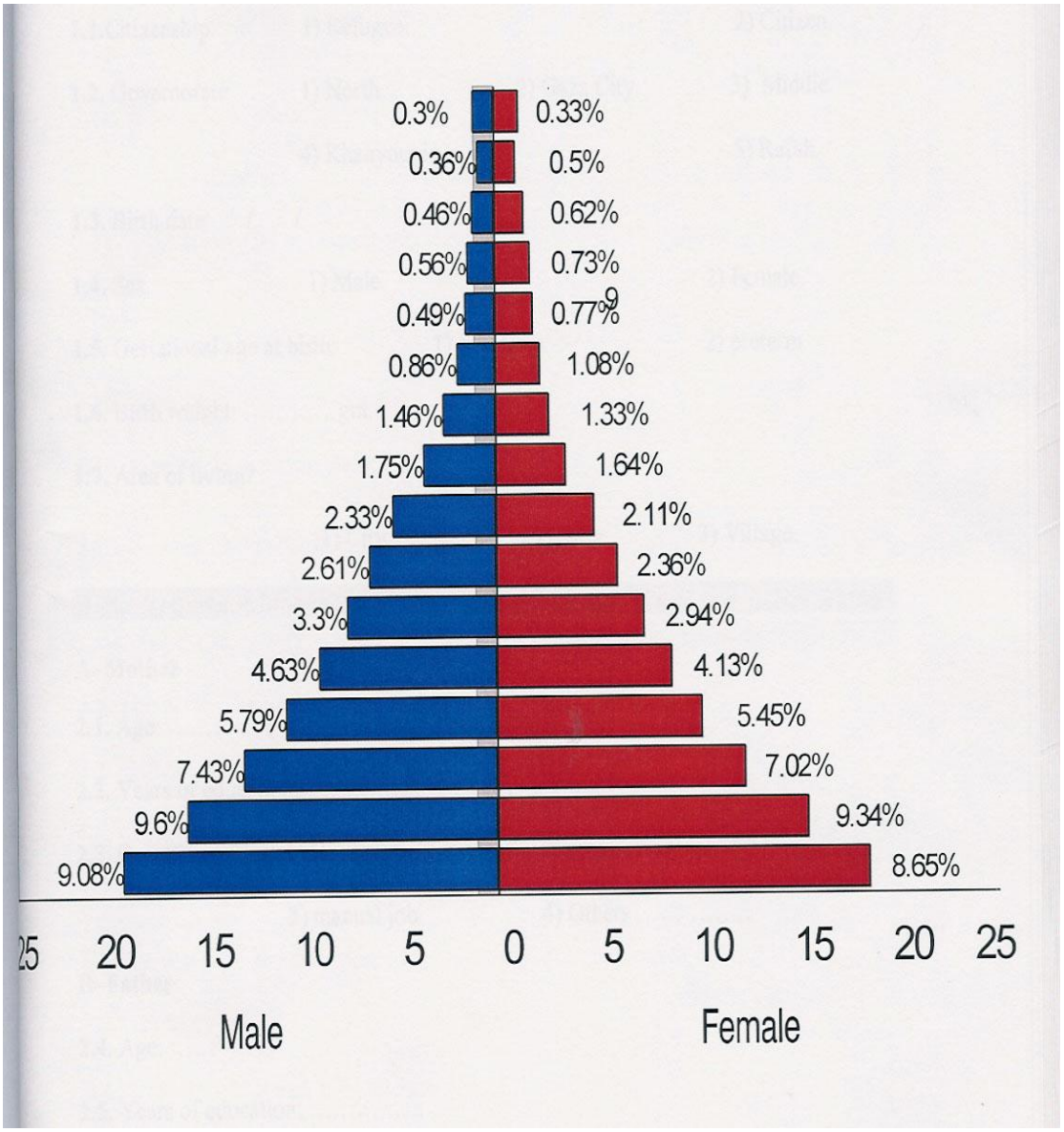
Appendix 4


لبنان
الحولة
راس الناقورة
صفد
عكا
حيفا
طبريا
الناصرة
البحر المتوسط
بيسان
جنين
طولكرم
نابلس
يافا
رام الله
الرملة
اريحا
القدس
بيت لحم
الخليل
البحر الميت
غزة
دير البلح
خانيونس
رفح
بئر السبع
الاردن
مصر
ايلات
العقبة

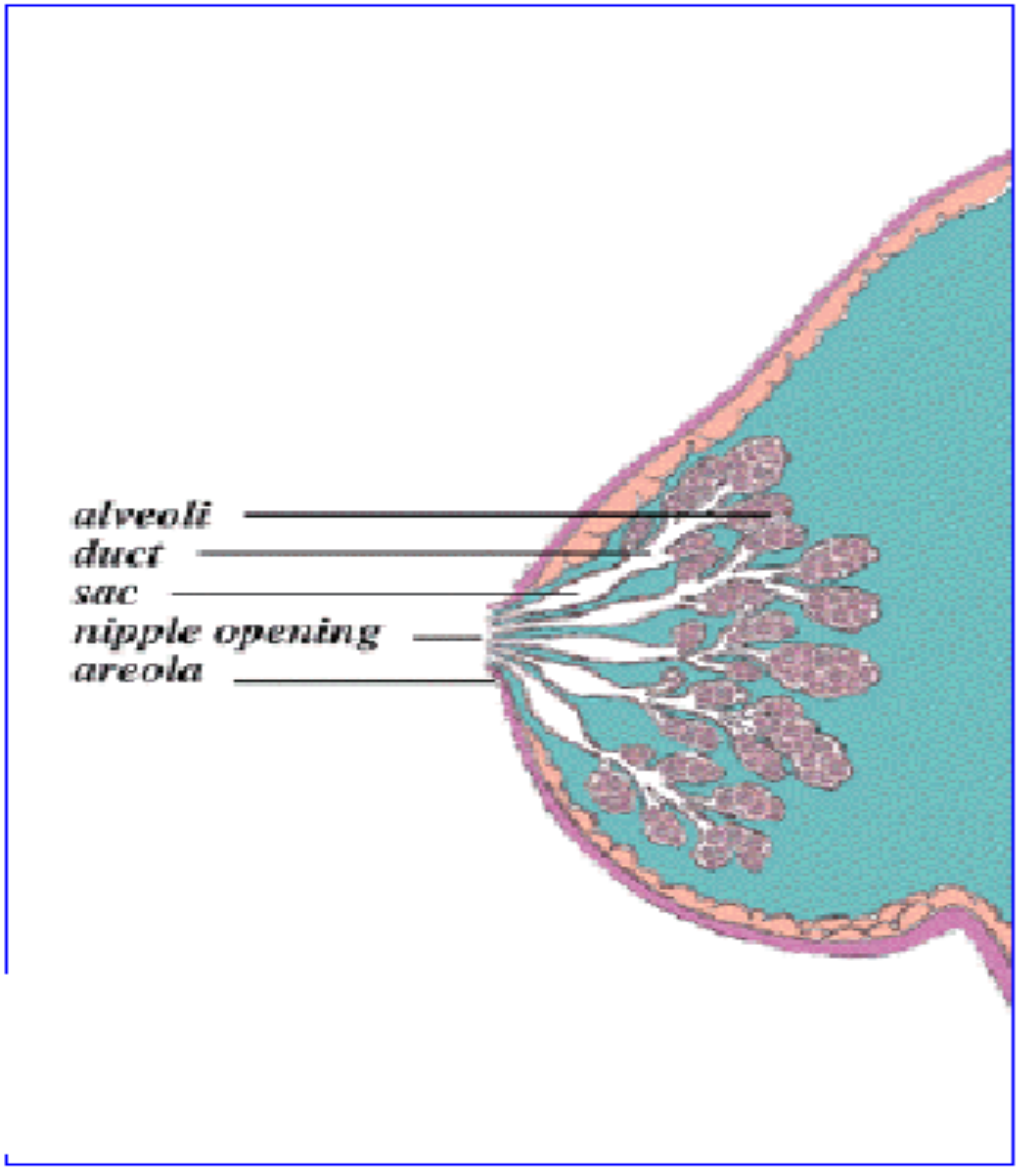
Appendix 5


LEGEND
GOVERNORATE CENTER
ELECTORAL DISTRICTS
MEDITERRANEAN SEA
JENIN
TUBAS
TULKARM
QALQILYA
NABLUS
SALFIT
RAMALLAH
JERICHO
JERUSALEM
BEITHLEHEM
HEBRON
JORDAN RIVER
DEAD SEA
GAZA N.
GAZA CITY
GAZA CENTRAL
KHAN YOUNIS
RAFAH

Appendix 6

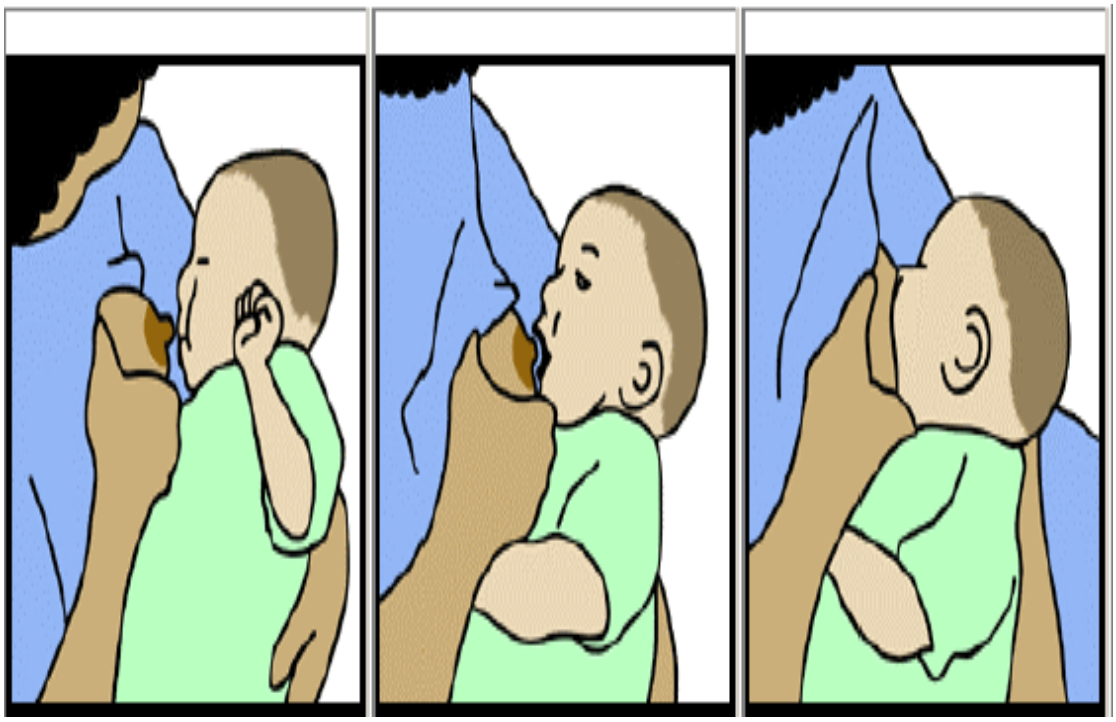

0.3%
0.33%
0.36%
0.5%
0.46%
0.62%
0.56%
0.73%
0.49%
0.77%
0.86%
1.08%
1.46%
1.33%
1.75%
1.64%
2.33%
2.11%
2.61%
2.36%
3.3%
2.94%
4.63%
4.13%
5.79%
5.45%
7.43%
7.02%
9.6%
9.34%
9.08%
8.65%
25 20 15 10 5 0 5 10 15 20 25
Male
Female

Appendix 7



Breast Anatomy

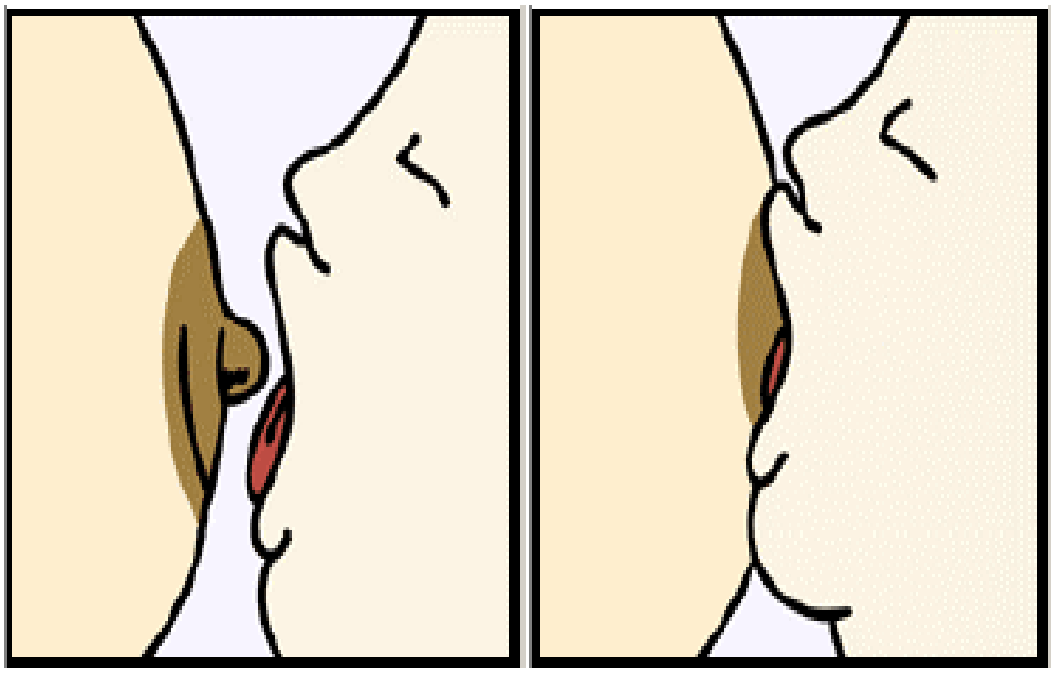
Appendix 8



How to bring baby to breast

Source: NWHI

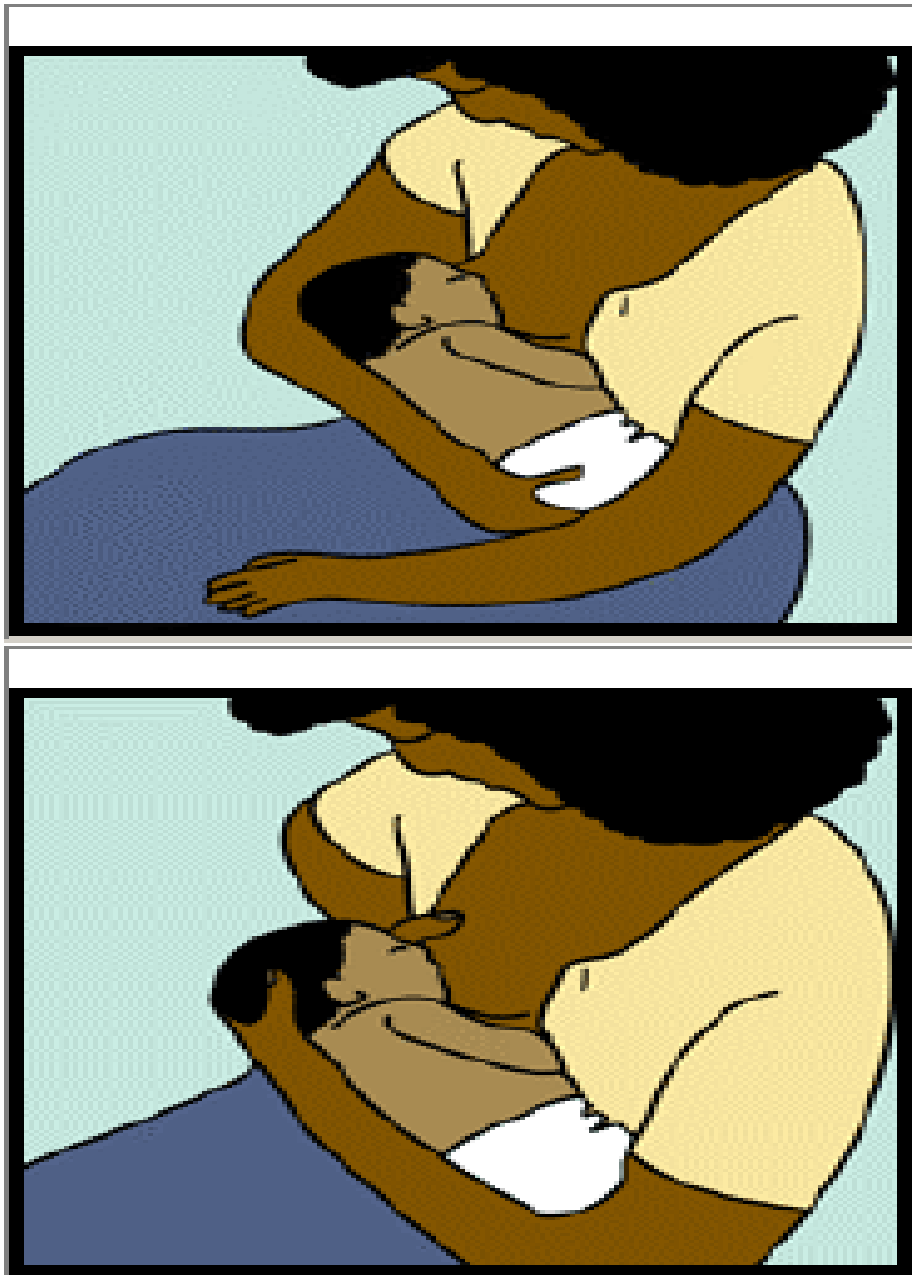
Appendix 9



Proper position of baby's mouth

Source : NWHI

Appendix 10



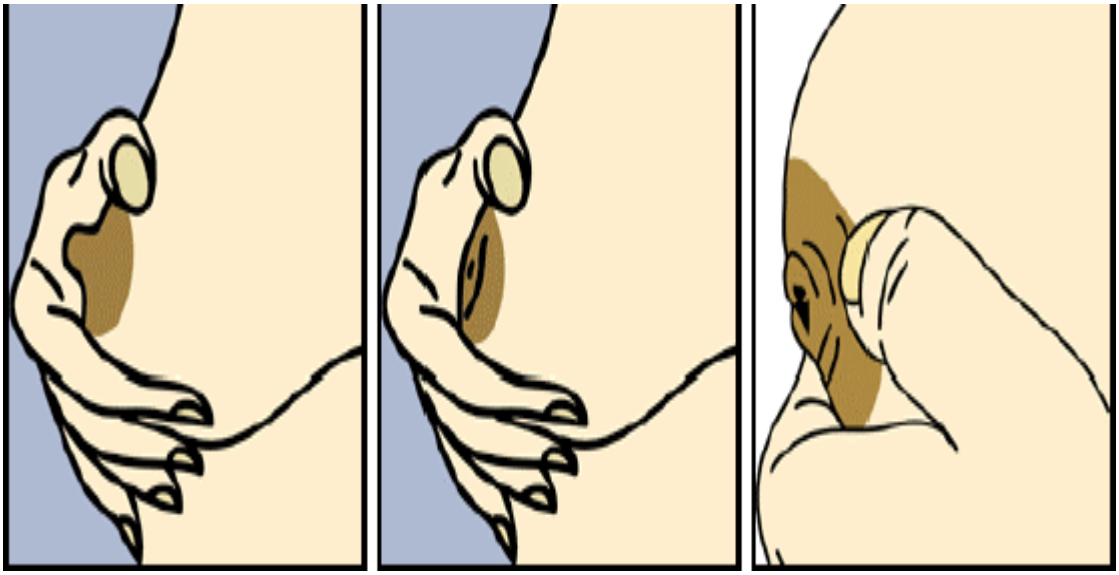
Positions of breastfeeding

Position 1&2

Source: NWHIC

Position 3,4&5

Appendix 11:



Normal **Flat** **Inverted**

Breast Nibble forms

Appendix 12:

SOME GENERIC NAMES OF FORMULA AVAILABLE IN THE PAESTINIAN MARKET

The consumption of each kind depends on health professional's advice to mothers

Milk's name	Company's name	Milk's kind	Baby's age	Price for people	Net weight	E-Mail	Iron content
Aptamil 1	Milupa Germany	Cow milk	(0-6) months	12-22 SN	450g	www.Milupa Me.comp	Enriched Iron 9.1 mg/100g
Aptamil 2	//	//	6-12+ months	//	//	//	//
Similac	Abbot-Irland	//	0-7+ months	22SN	//	There is no	Normal Iron
Similac with Iron	//	//	0-7+ months	22SN	//	//	Enriched Iron 9.1 mg/100g
Nutrilon premium	Holand N.V-Nutrica	//	0-5 months	18-19 SN	400g	//	Normal Iron
Nitrilon follow on	//	//	6-12+ months	//	400g	//	//
Bebelac 1	N.V-Nutrica	//	0-6 months	//	450g	www.nutricME.comp	4.1 mg/100g
Bebelac 2	//	//	6-12+ months	//	//	//	9.2 mg/100g
Fabi-milk1	France by interfood Limited iso 9001	//	0-6 months	//	//	www.Fabi-milk.com	Enriched-Iron 6 mg/100g
Fabi-milk2	France by interfood Limited iso	Cow milk	0-12 months	//	//	//	6 mg/100g

	9001						
Guigoz1	**France nestla**	**Cow milk**	**0-6 months**	**//**	**450g**	**There is no**	**6 mg/100g**
Guigoz2	**//**	**//**	**6-12 months**	**//**	**//**	**//**	**7.9 mg/100g**
NAN1	**//**	**//**	**0-6 months**	**22 SN**	**//**	**//**	**Normal 3.8 mg/100g**
NAN2	**//**	**//**	**6-12 months**	**//**	**//**	**//**	**//**
S26	**Wyeath Nutrica Iriand**	**//**	**0-6 months**	**23 SN**	**400g**	**//**	**Enriched 9.1 mg/100g**
Promil	**//**	**//**	**6-12 months**	**23SN**	**//**	**//**	**//**
Progress	**//**	**//**	**12-24 months**	**//**	**//**	**//**	**12.5 mg/100g**
Materna Plus	**Materna laboratories Ltd Kibbuts Maabarot Israel**	**//**	**0-6 months**	**18SN**	**450g**	**www. Materna co.il**	**7.5 mg/100g**
Materna	**//**	**//**	**//**	**//**	**//**	**//**	**6 mg/100g**
Materna conflour	**//**	**//**	**4-12+ months**	**//**	**4oog**	**//**	**7.3 mg/100g**

.

APPENDIX 13

Appendix 14

Appendix 15

Appendix 16

Appendix 17

Don't forget

The Breastfeeding is the best investment for our future