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Al-Quds University

**Evaluation of timely targeted counseling intervention on
newborn care in Bethlehem villages**

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**Evaluation of timely targeted counseling intervention on
newborn care in Bethlehem villages**

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requirements for the degree of Masters in Public Health.**

**School of Public Health
Deanship of Graduate Studies
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Thesis Approval

**Evaluation of timely targeted counseling intervention on newborn care in
Bethlehem villages**

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Jerusalem – Palestine

1433/2012

Declaration

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

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Acknowledgement:

This thesis would have never been possible without the support of many people, some of whom I would sincerely like to thank here.

First I want to thank my whole family for their love and support. Sincere thanks to my parents who raised me to believe that I could achieve anything I set my mind to.

To my beloved Husband Fadi, thank you for being very supportive ,without your encouragement and understanding it would have been impossible for me to finish this work.

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Abstract:

Background: A previous qualitative assessment on maternal child health and nutrition conducted by World Vision in Bethlehem governorate showed lack of knowledge and poor newborn care practices among mothers. These poor knowledge and practices such as inappropriate feeding practices, poor illness management ,salting the newborns and subjecting them to a harmful massage , are believed to have direct effect on newborn morbidity and mortality. The assessment findings indicate the need for strengthening household level behaviors among women in relevance to the different maternal and child health issues. Literature showed that this can be done through implementing the timely targeted counselling intervention (TTC) which is an international approach developed by World Vision International in partnership with WHO, UNICEF, the American College of Nurse-Midwives, and the USAID Health Care Improvement Project . In this study this method will be tested and evaluated in four villages in Bethlehem governorate.

Objectives: To assess mothers' knowledge and practices regarding new born care and to evaluate the effectiveness of TTC on new born care in the targeted four villages in Bethlehem governorate. The specific objectives were to: (1) assess mothers' knowledge regarding infants feeding practices, such as exclusive breastfeeding, duration of breastfeeding and timely introduction of solid foods before and after the intervention; (2) assess mothers' practices regarding new born day care such as wrapping the newborns , applying salt and oils to baby's skin before and after the intervention; (3) assess mothers' knowledge regarding infant danger signs before and after the intervention; and (4) to assess infants' health status at birth and after the intervention.

Material and method: This study is an experimental research. All newborns and their mothers in the four targeted villages during the months of March and April 2011 were identified by the Community Health Workers (CHWs). The total number of the identified newborns and their mothers was 118, of whom 66 children and their mothers were randomly assigned to an intervention group and 52 children and their mothers were the comparison group.

The CHWs targeted the intervention group with key messages and support for behavior change during organized home-visits throughout one year. The comparison group members

were not exposed to any messages but were visited only for the purpose of data collection. Baseline and end-line data were collected from both groups through person-to-person interviews.

Results: Mothers' feeding practices such as exclusive breastfeeding and duration of breastfeeding were significantly improved in the intervention group, they were 30 times more likely to exclusively breastfeed their babies compared to mothers in the comparison group (OR=29; 95% CI 8.02 - 108), 3 times likely to breastfeed their children for more than a year (OR=2.94; 95% CI 1.03 – 8.41), 83.6 times more likely to introduce food at six months (OR=83.6; 95% CI 17.237 – 405).

In regards to new born caring practices, mothers in the intervention group were five times less likely to wrap their newborns (OR=0.196; 95% CI .05 – .76), 30 times less likely to apply salt on the babies skin (OR=.033; 95% CI 0.006 – 0.19) and 4.6 times less likely to use baby oil (OR=0.21; 95% CI 0.06 – 0.72) compared to mothers in the comparison group.

In regards to recognizing the danger signs, mothers in the intervention group were four times more likely to recognize babies' danger signs (OR 3.96; 95% CI 0.17– 9.2) compared to mothers in the comparison group.

TTC effectiveness was reflected on the babies' health in general, during the study period the monitoring forms used by the community health workers revealed that ,cases with different health problems such as diarrhea and infections were lower in the intervention group than the comparison group.

Conclusion: This intervention study proved that using the TTC in newborn care is very effective and can contribute to the change in mother's knowledge and behavior that is reflected in their new born health. Moreover, it proved that the non compliance with the international guidelines and recommendations regarding new born care can play a major role in affecting child morbidity and mortality in Palestine.

The TTC is recommended to be used at the household level as one of the effective methods to scale-up positive health and nutrition practices among mothers and their children and prevent the common malpractices in other areas. Also, to improve health outcomes among Palestinian children, we need to work in parallel with the policy makers to convince them to adopt this approach at a national policy level.

تقييم فعالية منهجية "الإرشاد الموقت و الموجة" في رعاية المواليد الجدد في قرى بيت لحم

إسم الطالبة: هناء الربضي

إسم المشرفة: د. نهى الشريف

الملخص:

خلفية الدراسة: أظهرت نتائج التقييم النوعي بخصوص صحة و تغذية الأم و الطفل الذي نفذ من قبل مؤسسة الرؤيا العالمية في محافظة بيت لحم تدني في مستوى المعرفة والدراية والممارسات الخاصة بالرعاية الصحية من قبل الأمهات لمواليدهن و يتمثل ذلك بعدم الإلتزام بالممارسات التغذوية الصحيحة، عدم الرعاية الصحية أثناء المرض ، تعريض الأطفال للمساج العنيف و وضع الملح على جلد الأطفال ، الأمر الذي له الأثر الرئيسي في رفع معدل الأمراض و الوفيات بين هؤلاء المواليد. كما لخصت نتائج هذا التقييم إلى ضرورة تعزيز ممارسات الأمهات على المستوى المنزلي حول مختلف القضايا الصحية الخاصة بصحة الأم والطفل. تظهر الأدبيات الخاصة بهذا الموضوع أنه من الممكن تعزيز الممارسات الإيجابية للأمهات من خلال إستخدام منهجية "الإرشاد الموقت و الموجة " للأمهات في رعاية مواليدهن، و قد تم تطوير هذا المنهج بالتعاون ما بين مؤسسة الرؤيا العالمية و كلا من : منظمة الصحة العالمية ،اليونسيف ،الكلية الأمريكية للتمريض و مشروع التطوير الصحي الخاص بالوكالة الأمريكية للتنمية الدولية.

أهداف الدراسة: إن الهدف العام لهذه الدراسة هو تقييم معرفة و دراية الأمهات و ممارستهن برعاية مواليدهن الجدد و تقييم فعالية المنهجية المذكورة في رعاية المواليد الجدد في قرى بيت لحم الأربعة المستهدفة. أما الأهداف الثانوية للدراسة فهي: تقييم معرفة الأمهات فيما يتعلق بممارسات تغذية

مثل الرضاعة الطبيعية الحصرية، إستمرارية الرضاعة و تقديم الأغذية التكميلية في موعدها الأطفال قبل و بعد التدخل ، تقييم ممارسات رعاية المولود الحديث مثل تقميط الأطفال،وضع الملح و الزيت على جلد الأطفال قبل و بعد التدخل ، تقييم معرفة الأمهات بعلامات الخطر لدى المواليد قبل و بعد التدخل و تقييم الوضع الصحي للمواليد عند الولادة وبعد التدخل.

منهجية الدراسة: لقد تمت هذه الدراسة بإستخدام أسلوب البحث التجريبي، حيث تم تحديد فئة البحث من قبل العاملات الصحيات و ذلك بإختيار 118 مولود جديد و أمهاتهم في الفترة الواقعة ما بين شهري آذار و نيسان من العام 2011 في القرى الأربعة المستهدفة. وقد تم تقسيمهم إلى مجموعتين عشوائيتين. الأولى شملت 66 أم و طفل كمجموعة تدخل والثانية شملت 52 أم و طفل كمجموعة مقارنة.

و قد قامت العاملات الصحيات المدربات على مدى سنة بإستهداف مجموعة التدخل بتوفير الإرشاد للأمهات من خلال زيارات بيتية محددة التوقيت ،حيث تناسبت الرسالة المستهدفة مع عمر الطفل خلال سنته الأولى. أما مجموعة المقارنة فلم يتم تقديم أي معلومات لهن و تمت زيارتهن فقط بهدف جمع المعلومات. وقد تم جمع المعلومات المرجعية ومعلومات نهاية الدراسة من كلا المجموعتين من خلال المقابلات الفردية.

النتائج الرئيسية: إن ممارسات التغذية بين الأمهات في مجموعة التدخل قد تحسنت بشكل كبير بعد التدخل، حيث تشير النتائج أن استعداد الأمهات في مجموعة التدخل لارضاع أطفالهن رضاعة طبيعية حصرية كان 30 مرة أكثر بالمقارنة مع الأمهات في مجموعة المقارنة (OR=29; 95% CI

(108 - 8.02 . كما تشير النتائج إلى أن استعداد الأمهات لإرضاع الأطفال لأكثر من عام كان

أكثر 3 مرات لدى الأطفال في مجموعة التدخل منها في مجموعة المقارنة

(OR=2.94; 95% CI 1.03 – 8.41).

أما بالنسبة للفترة الصحيحة لبدء الأغذية التكميلية، تشير النتائج أن الإستعداد لتقديم الأغذية التكميلية

في موعدها الصحيح ، كان 83.6 مرة أكثر لدى الأمهات في مجموعة المقارنة

(OR=83.6; 95% CI 17.237 – 405).

و فيما يخص رعاية المولود، تشير النتائج إلى انخفاض نسبة الممارسات السيئة كآلاتي: الإستعداد

لممارسة التقييط لدى الأمهات في مجموعة التدخل كان 5 مرات أقل منها في مجموعة المقارنة

(OR=0.196; 95% CI 0.05 – 0.76)، الإستعداد لتمليح الأطفال أصبح 30 مرة أقل لدى

الأمهات في مجموعة التدخل (OR=.033; 95% CI 0.006 – 0.19) ، والإستعداد لإستخدام

زيت الأطفال كان 4.6 مرة أقل لدى الأمهات في مجموعة التدخل منها في مجموعة المقارنة

(OR=0.21; 95% CI 0.06 – 0.72).

كما تشير الدراسة إلى أن نسبة دراية الأمهات بعلامات الخطر لدى مواليدهن إرتفعت بنسبة أربع

مرات أكثر لدى الأمهات في مجموعة التدخل منها في مجموعة المقارنة (OR 3.96; 95% CI)

9.2 – 0.17 .

لقد إنعكست فعالية هذه المنهجية "الإرشاد الموقت و الموجة و "على صحة الأطفال بشكل عام ،

فقد كانت المشاكل الصحية مثل الإسهال والالتهابات أقل في مجموعة التدخل منها في مجموعة

المقارنة خلال فترة الدراسة.

الخلاصة: أظهرت هذه الدراسة فعالية التدخل المنزلي الموجه في تغيير معرفة و ممارسات الأمهات حول رعاية المولود. كما أثبتت أيضاً أن عدم التوافق بين الممارسات المتبعة بخصوص رعاية المولود مع المبادئ و التوصيات الدولية يمكن أن يلعب دوراً رئيسياً في التأثير على معدلات أمراض ووفيات الأطفال في فلسطين.

و عليه يوصي هذا البحث بإستخدام مثل هذه المنهجية لرفع مستوى الممارسات الخاصة برعاية الطفل في مناطق أخرى في فلسطين، فيما يجب العمل بشكل موازي مع واضعي السياسات لإقناعهم بتبني هذا النهج على المستوى الوطني.

Table of Contents

Chapter 1: Background and Significance

1.1	Background.....	1
1.2	Problem Statement.....	4
1.3	Justification of the study.....	5
1.4	Study area	9
1.5	Study sample.....	9
1.6	Expected outcomes.....	9
1.7	Study aim and objectives.....	9
1.8	Study limitations.....	10
1.9	Thesis structure	10

Chapter 2: Literature Review

2.1	Introduction.....	12
2.2	Breastfeeding practices.....	12
2.3	Complementary feeding practices and its determinants	19
2.4	Newborn daily home care practices and its determinants	22
2.5	Recognizing infants danger signs and care seeking behaviors	24
2.6	Effectiveness of home based interventions.....	29
2.7	Timed and targeted counseling.....	31

Chapter 3: Conceptual Framework and Intervention approach

3.1	Introduction.....	33
3.2	The conceptual framework.....	33
3.3	The “Timed and Targeted counseling, TTC” approach.....	34

Chapter 4: Methodology

4.1	Introduction.....	47
4.2	Study methods.....	47
4.3	Study implementation	53
4.4	Study tools.	59
4.5	Field work and data collection.....	60
4.6	Methods of data analysis.....	61
4.7	Ethical consideration.....	63

Chapter 5: Results

5.1	Introduction.....	64
5.2	Characteristics of the study population.....	64
5.3	Univariate and multivariate analysis.....	68
5.4	Amount of change.....	76
5.5	Summary	79

Chapter 6: Discussion, conclusion and recommendations

6.1	Introduction.....	80
6.2	Summary of the study findings	80
6.3	Breastfeeding practices	81
6.4	Complementary feeding practices.....	85
6.5	Mothers practices regarding newborn care	87
6.6	Danger signs	90
6.7	Diarrhea management	92
6.8	Conclusion	92
6.9	Recommendations.....	96

References102
-------------------	-----------------

Appendices109
-------------------	-----------------

List of Tables

Table 4.1: Distribution of the health workers specialties, age, the selected community health workers, villages, and their assigned household.....	55
Table 5.1: Socio demographic characteristics :differences between intervention versus comparison group	67
Table 5.2: Mothers breastfeeding practices in the intervention and the comparison groups	69
Table 5.3: Logistic regression model for breastfeeding practices	70
Table 5.4: Mothers' complementary feeding practices between the intervention and the comparison groups before and after intervention.....	71
Table 5.5: Logistic regression model for complementary feeding practices.....	71
Table 5.6: Mothers' caring practices between the intervention and the comparison groups before and after intervention	72
Table 5.7: Logistic regression model for newborn practices.....	73
Table 5.8: Mothers' recognizing danger signs practices between the intervention and the comparison groups before and after intervention.....	74
Table 5.9: Danger signs model- Multivariate analysis results.....	74
Table 5.10: Mothers' diarrhea management practices between the intervention and the comparison groups before and after intervention.....	75
Table 5.11: Diarrhea management model- Multivariate results analysis.....	76
Table 6.1: Models at the community level.....	99

List of Figures

Figure 3.1: Conceptual framework of the study	33
Figure 5.1: Distribution of infants by gender in the intervention group	64
Figure 5.2: Distribution of infants by gender in the comparison group	65
Figure 5.3: Mode of delivery between both groups.....	65
Figure 3.4: Distribution of mothers' level of education in both groups.....	65
Figure 5.5: Distribution of fathers by working status in both groups	66
Figure 5.6: Distribution of mothers' working status in both groups	66
Figure 5.7: Delta change between both groups after the intervention.....	77
Figure 5.8: Delta change between both groups after the intervention.....	78

Conceptual and operational definitions of the study variables :

1. Timed targeted counseling (TCC): is a primary health care approach carried by a trained community health workers to bring preventive and care-seeking messages into the households , its designed to enable messages to be appropriately timed and appropriately targeted to those who would practice these behaviors .
2. Newborn care : includes feeding practices, recognition of the danger signs and the daily caring practices.
3. Infant feeding practices : include exclusive breastfeeding, initiation of breastfeeding within the first hour of birth , the timely and appropriate introduction of complementary feeding and continued breastfeeding alongside other foods for children until two years of age .
4. Newborn daily care practices: refer to the caring practices provided by mothers or care providers such as skin care, umbilical cord care and thermal care.
5. Infant danger signs: signs that require immediate attention and referral to health facility, consequences of improper action may cause serious health problems or even death . These danger signs include : difficult or fast breathing , baby feels hot or unusually cold, fits, yellowish body, inactive, refusal of feeding , having three or more watery stools per day, pus draining from the eyes, swollen cord , fever , continuous vomiting ,cough together with an indrawn chest, blood in the stools and pus in the ears.
6. Univariate analysis : is the kind of analysis that explores each variable in a data set separately.
7. Multivariate Data Analysis: refers to the statistical technique used to analyze data that arises from more than one variable, this analysis examines the relationships among multiple variables at the same time.

Chapter 1

Introduction

1.1 Background

Maternal and child health are important components of present and future population health in Palestine, where roughly 40% of the population are women of reproductive age and children younger than 5 years (PCBS, 2006).

The two health components for the reduction of child mortality and improvement of maternal health, are addressed in the fourth and fifth Millennium Development Goals (MDGs). Also, reducing the number of women dying in childbirth by three-quarters by 2015 is one of the key goals of the Millennium Declaration (WHO, 2011b).

The health of a mother and her infant are intertwined. In developing countries, a mother's death in childbirth means almost certain death for the infant. Worldwide, every minute a woman dies from complications related to pregnancy and childbirth—that means 1,500 deaths per day, and more than half a million deaths occur every year worldwide with the vast majority of these deaths occurring in the developing world (WHO, 2008).

The majority of maternal deaths can be prevented if women have access to skilled care during pregnancy and have safe childbirth and care in the first month after delivery. Moreover, have access to a good quality family planning services (H Krishna Kumar, 2012).

There are an estimated four million neonatal deaths annually. Two thirds of neonatal deaths occur in the first month of life, among those more than two- thirds die in the first week and among those two- thirds die within the first 24 hours of life (Lawn et al., 2005c).

Infectious diseases are associated with 30 to 40% of all neonatal deaths, with the most important infectious causes being acute respiratory infections (ARI), neonatal tetanus, and sepsis. The other most important causes of neonatal mortality are asphyxia, birth injuries, and complications of prematurity and low birth weight. Low birth weight, associated with

increased infant mortality, is directly related to the health and nutritional status of the mother before and during pregnancy (Johns Hopkins University, 1999).

Essential newborn care is crucial for improving the health of newborns through interventions before conception, during pregnancy, at and soon after birth, and in the postnatal period. Basic preventive newborn care includes care before and during pregnancy, clean delivery practices, temperature maintenance, eye and cord care and early and exclusive breastfeeding on demand day and night. It also includes early detection of problems or danger signs, with priority for sepsis and birth asphyxia, and appropriate referral and care seeking (USAID, 2012) .

According to Save the Children report 2006 (Saving the Lives of mothers and Newborns),each year, millions of women and newborns, die from preventable causes, proper care can improve the health and survival of women and newborns worldwide, this care should take place at two levels; the household and the health facility (Save the children, 2006) .

Traditional family practices and behaviors at the household level is critical in achieving better neonatal care in the developing countries since most deliveries occur at home and health services may not be available, even babies delivered in hospitals may be affected by traditional practices after discharge (WHO, 2004) .

In Palestine, and according to the year 2009 series on health in Palestine that was published in the Lancet, mortality rates for infants and children less than 5 years of age have changed little since the 1990s. By contrast with the decline between 1967 and 1987, infant mortality stalled at around 27 per 1000 during 2000–06, the same as that reported in the 1990s. This suggests a slowdown of health improvements, a possible increase in health disparities or an indication of deteriorating conditions (Lancet, 2009).

Deaths among young children, particularly at the neonatal period, remain unacceptable for a country with reasonable availability of health care providers and a relatively high amount of spending on health (9% of the GDP according to the World Bank Report 2004). Most infant deaths are neonatal deaths and most neonatal deaths are early neonatal deaths. The neonatal mortality rate is 27.2 /1,000 live births (PHIC, 2010).

According to the MARAM project year 2003 baseline assessment, 75.1% of the Palestinian pregnant women reported that they suffered from at least one pregnancy complication during their pregnancy. Many women did not seek care for their pregnancy complications, even though they often expressed that they were worried about these complications. A 43% of these women did not receive antenatal care (ANC) services within their first trimester; 7.9% had not benefited from ANC services until the last trimester; and 38.8% of women who were in their third trimester did not receive any care (MARAM Project, 2003).

Almost two thirds of women (65.5%) in Palestine are not receiving any postnatal care. The level of postnatal care (PNC) remains at an unacceptable level in spite of progress made over the last 10 years. The limited utilization of services is notable, given the fact that women report high morbidity after childbirth (PCBS, 2004- a).

According to the MoH 2009 annual, 98.9% of births took place in health institutions but the problem is that Palestinian women are often discharged from hospital within 2-4 hours after delivery. While this is often due to a lack of available bed space, it is just as likely that the woman and her family are anxious to leave the hospital for the comfort of their homes. This is far from the ideal as medical expert's state that it is critical for the mother and infant to be monitored in the hospital for 24 hours after delivery (MARAM Project, 2003).

According to the MARAM (2003) household survey, among mothers who delivered babies in the 6 months preceding the survey, less than 5% received postnatal care, and less than 2% made the recommended two visits, one within 72 hours after delivery and one 40 days after delivery. From this we can notice that Post-partum and newborn care is another critical area that needs a quick response (MARAM Project, 2003).

New born day care is another neediest area requiring serious intervention due to the large scale dangerous new born care malpractices. Studies reveal that there are many commonly practiced behaviors pertaining to neonates that are harmful, in particular those having to do with covering the umbilicus with gauze (practiced by 40% of Palestinian families), and giving of hard sugar candy (sukar faddi) (21% of families) which contradicts the practice of exclusive breastfeeding and makes the neonate vulnerable to bacteria from unclean water and other contaminants (Hanan Project, 2005).

Recognizing infants' danger signs that require immediate attention by mothers is essential for improving newborn health (MARAM Project, 2003).

According to the World Vision (2010) assessment of mother's knowledge and practices regarding newborn care that was conducted in Bethlehem villages showed that, mothers were knowledgeable about the signs of anemia and the types of food beneficial to treat anemia. In addition, mothers were aware of the importance of eating healthy foods during pregnancy and lactation. As for newborn care, the study showed there are certain common harmful practices such as salting newborns, using Kohl and vigorous massaging of babies that should be stopped to eliminate its possible morbidity and mortality on newborn (WV, 2010).

The PCBs annual report (2012) -Palestinian Children Issues and Statistics -showed that breastfeeding prevalence in the year 2010 was (96.3%) and 26.5% of children at the age group of (0-5) months were exclusively breastfed. the average of continuation in breastfeeding reached 13.0 months in 2010, and 62.8% of the children had begun their breastfeeding within the first hour of birth.

The PCBS Report (2004) entitled Differentials in Prevalence and Duration of Breastfeeding Among Children Born in Three Years Preceding Survey indicates that around 10% of children are weaned during the first three months of life (PCBS, 2004-b).

Another major problem is the lack of awareness lies within the complementary feeding. Earlier research findings by the World Vision (WV) showed that 77.8% of infants in Hebron and 37% in Jenin have received other drinks besides breast feeding before the age 5 months. Most mothers give their infants different herbal drinks to treat colic or cramps. Some mothers may also give these kinds of drinks at a very early age, as early as forty days (WV, 2010).

World Vision (2010) further described that complementary feeding provided for infants is neither adequate nor nutritional or appropriate. Most mothers start adding pudding at age of three months, minced fruits such as banana and apple, vegetable such as potato and carrots and rice at the age of four, and boiled while egg and chicken liver at the age of six months, the main reasons for such practices are to help the child gain weight, to relieve his

colic, to prepare the child to the taste of the home made food and to satisfy his hunger to sleep well.

Typically, almost all mothers introduced fluids to their infants very early in life (before the age of six months). Liquids are introduced almost immediately after birth in the form of herbs and water mostly to treat abdominal colic and distension and to keep children calm or sleepy (WV, 2010). Another study that was conducted in 2008 in Al-Am'ari refugee camp, by a student from Al Quds university showed that there is no compliance with the international guidelines and recommendations regarding breastfeeding and complementary feeding. Although the rate of breastfeeding initiation is high (72.5%) the rate of exclusive breastfeeding is extremely low (3.4%), mothers start introducing food at early as early as 3 months without realizing that such a thing is very harmful (Qleibo M, 2008).

1.2 Problem statement

Worldwide there are three major causes of neonatal deaths: infections (36%, which includes sepsis/pneumonia, tetanus and diarrhea), pre-term (28%), and birth asphyxia (23%). There is some variation between countries depending on their care configurations (Lawn et al., 2005a). It has been estimated that 70 percent of neonatal deaths could be prevented with appropriate care starting from pregnancy (Lawn et al., 2005b).

In Palestine traditional practices can't be ignored, these practices may cause serious problems to both the mother and the child, and the fact that health care services are limited especially in the villages makes staff capacity building and outreaching communities at the household level a major issue of concern (WV, 2010).

According to the World Vision needs assessment for newborn care in Bethlehem district that was conducted in May 2010 they found that there is lack of the proper knowledge and information or best practices among pregnant women. This lack of knowledge is believed to have direct effect on newborn morbidity and mortality. The assessment findings indicate the need for strengthen household level behaviors, among the target groups in relevance to the different maternal and child health issues by implementing a community based health education activities through using a cadre of trained health workers. Therefore, we are planning to implement an intervention study in Bethlehem villages among pregnant women. Primarily, we will do an assessment of these women knowledge

as a baseline, and then health workers shall reinforce the main messages and be able based on this study to focus on the main problematic areas in regards to maternal and child health knowledge and practices.

1.3 Justification of the study

A previous landscape analysis that included both a literature review and a qualitative assessment conducted by World Vision (2010) revealed gaps in different issues related to mother ,child health and nutrition.

The literature review included data from different sources . Sources were mainly the MOH annual reports, PCBS reports and reports provided by the different NGO 's .

The qualitative assessment targeted 11 villages in Bethlehem district in the West Bank. Twenty two focus group discussions were conducted for family members of children under two years of age (12 focus groups with mothers, 5 focus groups with grandmothers and another 5 focus groups with husbands). In addition, seven individual in-depth interviews with health care providers who work in the villages also took place.

There was 217 participants in the focus group discussions in all localities of those; 120 mothers, 49 grandmothers and 48 husbands. The localities included Al-Ma'sara , Khallet al Haddad, Jurat ash Sham'a , Marah Ma'alla , Umm Salamuna , Wadi Rahhal , Al Manshiya , Marah Rabah and Wadi Al Narjes that are part of the southern rural areas as well as Nahhalin and Al Walaja that are part of the western rural areas.

Data was analyzed and categorized utilizing content analysis of responses obtained in each key question.

The main covered topics in the landscape analysis included duration of breastfeeding; exclusive breastfeeding; complementary feeding, newborn care and illness management.

The identified gaps were as follows:

The focus group discussions revealed an overall support and appreciation of breastfeeding and extended breastfeeding among all groups. Moreover, mothers expressed strong preference to breastfeeding their children and most of them stopped breastfeeding when children started to eat family food believing it would be adequate for them and their breast milk would not be of benefit any more. The majority of mothers fed their children up to 8-16 months and the majority lacked trust in the quality and quantity of their breast milk (WV, 2010).

Exclusive breastfeeding for the first six months has increased from 17% in 2000 to 27% in 2006, but a continuing large gap in best practices, despite almost universal prevalence, indicates a critical need for better advice, management and breastfeeding support (PCBS, 2006).

Moreover, exclusive breastfeeding was not practiced in the surveyed communities and there was inadequate awareness about it. Even if mothers were aware, exclusive breastfeeding was not understood by them and it lacked credibility among the majority. The main factors for mothers inability to exclusively breastfeed their children included: mothers concerns for their children of not gaining enough weight, mothers' lack of trust in the their milk, child being colicky, and the influence of the surrounding family and community which affected the continuation of exclusive breastfeeding and the early introduction of fluids, herbs and solid (WV, 2010).

A study that was conducted in 2008 in Al-Am'ari refugee camp ,by a student from Al Quds university showed that there is no compliance with the international guidelines and recommendations regarding breastfeeding and complementary feeding .Although the rate of breastfeeding initiation is high (72.5%) the rate of exclusive breastfeeding is extremely low (3.4%), mothers start introducing food at early as early as 3 months without realizing that such a thing is very harmful (Qleibo M, 2008).

Also, the focus group discussions showed that complementary feeding practices varied from mother to mother and from family to family. Liquids such as herbal drinks are introduced as early as the first week of life and soft foods are introduced at around 3-4 months of the child age. The majority weaned their children suddenly and often using a variety of extreme physical and psychological measures (WV, 2010).

As for newborn care, the study showed there are certain common harmful practices such as salting newborns, using Kohl and vigorous massaging of babies that should be stopped to eliminate its possible morbidity and mortality on newborn (WV, 2010).

Although the influence of mothers in law is rather changing, mothers in law are still playing a crucial role in how children are fed, reared and raised specially in the early years of children's lives. Grandmothers and husbands could be helpful to reinforce positive

health messages due to their strong influence on mothers and they should be included in maternal and child health programs (WV, 2010).

However, in spite of the somehow satisfactory level of knowledge among the interviewed groups, it was obvious that most of them lack the proper knowledge and information or best practices in the identified fields which could be to a large extent to the lack of the provision of accurate counseling and advice on the different topics. In many ways, the targeted groups based their information on the cumulative knowledge they received from different sources including their own personal experience and the surrounding influence (WV, 2010).

The literature review also revealed that there are many commonly practiced behaviors pertaining to neonates that are harmful, in particular those having to do with covering the umbilicus with gauze (practiced by 40% of Palestinian families), and giving of hard sugar candy (sukar faddi) (21% of families) which contradicts the practice of exclusive breastfeeding and makes the neonate vulnerable to bacteria from unclean water and other contaminants (Hanan Project, 2005).

Another study revealed that mothers are unaware of infants' danger signs and this requires immediate attention (MARAM Project, 2003).

These findings indicate the need for strengthen household level behaviors , among the target groups in relevance to the different maternal and child health issues by implementing a community based health education activities through using a cadre of trained health workers. The trained health workers should be able to provide standardized health information to the mothers throughout the stages of antenatal, postnatal and up to two years of the child age. The health workers should reinforce the main messages and be able based on this study to focus on the main problematic areas in regards to maternal and child health knowledge and practices.

It is expected that such a community-based intervention will improve maternal, child health and nutrition (MCHN) practices among mothers of children under one years of age, which in return decreases infant mortality and morbidity.

1.4 Study area

Bethlehem is a city in the central West Bank, approximately 10 kilometers (6 mi) south of Jerusalem, with a population of about 30,000 people (PCBS, 2006).

Study area will include 4 villages from Bethlehem Governorate, Nahalin, Wadi Rahhal , Marah Rabah and Wadi Al Ness.

1.5 Study sample

All newborns in the four targeted villages during the months of March, April 2011 were identified. The total numbers of newborns during the mentioned months were 118. 66 mothers were identified as intervention group, and 52 were identified as comparison group.

1.6 Expected Outcomes

From this intervention study and by comparing intervention group with comparison group we expect to notice changes in mothers' behaviors in the intervention group regarding newborn care which in return affects infants' mortality and morbidity.

Baseline data to assess mothers' knowledge, attitudes and practices will be collected from both the cases and the controls.

Household monitoring forms, will be used to track the practicing of health messages.

It is expected that the Timed Targeted counseling approach will contribute to the change in mothers knowledge and behaviors ,which in return will be used as one of the effective methods to scale-up positive mother and child health and nutrition practices and prevent the common malpractices in other localities.

1.7 Study aim

To explore to what extent community home based care intervention in the targeted Bethlehem villages provide sustainable and good quality care for newborns.

To achieve this aim the following general and specific objectives are set.

1.7.1 General objectives:

1. To assess mothers knowledge and practices regarding new born care.
2. To evaluate the effectiveness of timely targeted counseling on new born care in the targeted villages in Bethlehem

1.7.2 Specific objectives

1. To assess mothers' knowledge regarding infants feeding practices before and after the intervention.
2. To assess mothers' practices regarding new born day care before and after the intervention.
3. To assess mother knowledge regarding infant danger signs before and after the intervention.
4. To assess infants health status at birth and after the intervention.

1.8 Study limitations

- Expected limitations may be associated with the influence of other community members on the mothers, mainly husbands and mothers in law.
- Some of the limitations may be associated with recall bias during base line data collection

1.9 Thesis structure

This thesis will be presented in 6 chapters as follows:

Chapter one: contains the background of the study, problem statement and study justification, objectives and study area.

Chapter two: will include related data (literature review) of a conducted international, regional and in country studies and researches

Chapter three: it includes the study conceptual framework.

Chapter four: includes the study methods, population, sampling, and sample size, ethical consideration will also include data collection, processing and analyzing.

Chapter five: it will present the results.

Chapter six: will include discussion and recommendations.

Chapter 2

Literature review

2.1 Introduction:

Effective care for newborns and infants are important for their survival, growth and development. Therefore, care practices immediately following delivery contribute to newborns risk of morbidity and mortality (WHO, 2010). A set of practices that reduce morbidity and mortality have been outlined as essential newborn care practices. These practices include caring behaviors such as hygienic cord care and skin care, thermal care, initiating breastfeeding within the first hour after birth, appropriate introduction of complementary foods and prevention and care for illnesses (Nuzhat Choudhury and Hashima-E-Nasreen, 2008).

In this chapter, literature and research investigated and discussed mothers' practices regarding newborn care ,breastfeeding ,complementary feeding and newborn daily care practices that might affect newborn and growth and development are presented.

2.2 Breastfeeding practices and its determinants

Breast milk provides all the energy and nutrients that the infant needs for the first month of life. Also, breast milk continues to provide up to half or more of a child's nutritional needs during the second half of the first year, and up to one-third during the second year of life (WHO, 2012b).

Breast milk promotes sensory and cognitive development, and protects the infant against infectious and chronic diseases. Exclusive breastfeeding reduces infant mortality due to common childhood illnesses such as diarrhea or pneumonia, and helps for a quicker recovery during illness (WHO, 2012b). Moreover, it provides immunity to the infant protecting him from gastrointestinal illness, otitis media and lower respiratory tract infection, therefore reducing infants' morbidity and mortality (WHO, 2012b). For example, diarrhea is less common among infants who are breastfed also the cognitive development is better among breastfed children in comparison with formula fed (WHO, 2012b) .

Therefore, the World Health Organization (WHO) and the American Academy of Pediatrics (AAP) emphasize the value of breastfeeding for children.

2.2.1. Initiation of breastfeeding

WHO and UNICEF recommended initiating breastfeeding within the first hour of life. Breastfeed infants on demand, that is as often as the child wants, day and night and avoid the use of bottles, teats or pacifiers (WHO, 2012b) .

Colostrum is the yellowish, sticky breast milk produced at the end of pregnancy. It is very rich in proteins, vitamin A, and sodium chloride, but contains lower amounts of carbohydrates, lipids, and potassium than normal milk. It is rich with growth factors and antimicrobial factors, which provides the infant with passive immunity, while growth factors stimulate the development of the gut. They are passed to the neonate and provide the first protection against pathogens (WHO, 2012b) . Therefore, WHO recommended it as the perfect food for the newborn, and feeding should be initiated within the first hour after birth (WHO, 2012b) .

2.2.2 Duration of breastfeeding

Continued breastfeeding for up to two years or beyond is recommended by the WHO (WHO, 2012b). Increasing the duration of breastfeeding confers significant health and developmental benefits for the child and the mother (Huffman, 1984).

The American Academy of Pediatrics recommends that “breastfeeding should be continued for at least the first year of life and beyond for as long as mutually desired by mother and child. There is no upper limit to the duration of breastfeeding and no evidence of psychologic or developmental harm from breastfeeding into the third year of life or longer” (AAP, 2005).

In the USA, an infant bottle-feeding is more dominant in people’s culture. It is very unusual to see a breastfeeding mother, and even more unusual to see a mother nursing a toddler or an older child. Television, books, and media usually show a baby with a bottle, not a baby at its mother's breast. Little girls grow up perceiving formula-feeding as the

norm. Some of the mentioned reason behind is a problem in breastfeeding idea itself such as having sore nipples, milk supply problems, thrush, infections, mismanagement of breastfeeding, difficulties with public breastfeeding, and misconceptions about weaning and others (FIA, 2003). Moreover, there is a mistake in their beliefs that breastfeeding is only for the first couple of months of an infant's life, or mostly up to year. Working American society does not give mothers a long maternity leave or otherwise encourage mothers to stay at home so breastfeeding and one of the most influential reasons why women fail to breastfeed is because infant formula companies use the most aggressive and insinuating forms of advertising (FIA, 2003).

In 2010 the Centers for Disease Control and Prevention released the Breastfeeding Report Card, a state-by-state breakdown of breastfeeding practices. The report revealed that in the USA more than half of USA mothers stop nursing before six months, and only 22 percent make it to the end of the year (CDC, 2010).

In the United Kingdom, and according to the infant feeding report in the year 2000, 69% of mothers initially breastfeed their babies but this percentage declines as the infant grows up to reach only 21% of those who continue breastfeeding till 6 months of age (Hamlyn B, 2000).

It has also been shown that breastfeeding has a positive influence on cognitive development and improves IQ scores and grades in school. The greatest gains were among those children breastfed the longest. One study that dealt specifically with babies nursed longer than a year showed a significant link between the duration of nursing and mothers' and teachers' ratings of social adjustment in six- to eight-year-old children (Sally Kneidel, 2005).

In a study conducted in Hong Kong researchers found out that breastfeeding initiation was significantly associated with continuation of breastfeeding (Dodgson et al., 2003).

A cross sectional Study among Swedish women found that maternal education was positively associated with the duration of breastfeeding in both 1983 and 1989. Non-smoking mothers were more likely to breastfeed longer than smokers in 1989 (OR = 1.9, 95%CI: 1.3, 3.0) (Grjibovski et al., 2008).

In West Africa, mothers would breast feed their infants till 12 months of age. In contrast, in Rural and Urban poor communities the duration of breastfeeding would last to 24 months (Onofiok and D.O.Nnanyelugo, 1998).

In a systematic random sample study conducted in Teheran it was found that the duration of breastfeeding is very low, and mother's high educational level negatively affects the duration of breastfeeding (Marandi et al., 1993).

In the Arab countries, in general, breastfeeding in the Arab world is appreciated and practiced especially among rural populations. Nevertheless it's declining especially among urban areas. According to UNICEF reports reason behind this is lack of support and monitoring of the process, which result in inappropriate duration of breastfeeding (UNICEF, 2005).

A case control study conducted in Amman –Jordan showed that 37% of the interviewed mothers mentioned that they shift to bottle feeding because of their employment and 33% reported that this was due to insufficient breast milk (Khassawneh et al., 2006) .

In Lebanon as reported by UNICEF 90% of the Lebanese children are breastfed to a median age of 8-10 months (UNICEF, 1995). A national survey found that the use of painkillers and maternal education were negatively associated with breastfeeding (Batal et al., 2006).

In Kuwait a decline in breastfeeding rate followed the oil era where there was a sharp increase in the family's average income, and an increase in the rate of bottle feeding (Fawzia A, 1997). The price of the commercially prepared food and formula was not a burden for the average Kuwaiti family. Older Kuwaiti mothers were found to breast their infants for a longer duration than young mothers (Fawzia A, 1997) .

In Israel a study conducted in four rural Moslem villages in the northern and central districts found out that only half of the breastfed mothers go beyond 6 months of age, breastfeeding continuation was significantly associated with the family socioeconomic status, mothers level of education, high religiosity, existence of sons in the family and traditional attitudes and practices (Azaiza and Palti, 1997) .

In Bahrain mothers of high social class would start bottle feeding as early as one month, reasons behind this were mothers lack of awareness on the importance of breastfeeding , they believe that it may affect their breast shape and its primitive to breastfeed (Musaiger AO, 2000) .

In Palestine, in the West Bank, the decline in continued breastfeeding rate (9-12 months) between 2000 and , from 67.4% to 58.6% warrants attention (PCBS, 2004-a), while study conducted by World Vision international in (2010) study in Bethlehem villages showed that mothers had strong preference to breastfeeding their children for at least a year. Same study indicated that few mothers do not breastfeed at all because of the illness of the mother or her baby ,they were more likely to extend their breastfeeding till the child is around a year and half while mothers who work outside were most likely to stop breastfeeding at 4-6 months because their milk would not satisfy the hunger of their children. Results showed that few women breastfed for around two years because they couldn't afford buying formula milk (WV, 2010). The main reasons behind stopping breastfeeding after one year were the mothers' believe that their children would not benefit from milk after that age or because of the mothers' pregnancy. More than one third of the mothers stopped breastfeeding because they got pregnant while they breastfed. Mothers thought when children eat family food; they can stop breastfeeding since that would be adequate for them. Others stopped because of the pain caused by the teeth bites of their children. In addition, women had strong believes that extending breastfeeding after a year would make weaning (WV, 2010).

Mothers in law are supportive of breastfeeding and were able to identify several benefits of breastfeeding such as; it has high nutrition values, strengthen bonding between the child and the mother and protect children from diseases. In general, they were in favor of extended breastfeeding till the age of two years as long as the mother is not pregnant, along other available foods prepared by the family. Few mentioned breastfeeding should continue only up to 6-7 months because they wanted from their daughters in law to get pregnant and have more kids (WV, 2010) .

2.2.3 Exclusive Breastfeeding (EBF)

Exclusive breastfeeding means that infant only receives breast milk without any additional food or drink, not even water (WHO, 2012b). Review of evidence by the WHO has shown that, on a population basis, exclusive breastfeeding for 6 months is the optimal way of feeding infants and in order to enable mothers to establish and sustain exclusive breastfeeding for 6 months (WHO, 2012b).

In the United States and according to the USA Department of Health and Human Services, 70.9% of mothers ever breastfed their babies. Families and friends encouragements to start feeding the baby earlier than six months make it difficult to the mother to maintain breastfeeding (Li R, 2005).

In the United Kingdom, early introduction of liquids is common. Most mothers introduce liquids when the baby is 4-10 weeks of age. Reported reasons behind this are mothers' thinking that the baby is thirsty and the baby needs different flavors (Hamlyn B , 2000)

In developing country breastfeeding is common but exclusive breastfeeding is rare. Studies found that infants exclusively breastfed have less chance of developing diabetes mellitus type 1 than peers with a shorter duration of breastfeeding and an earlier exposure to cow milk and solid foods (Gerstein, 1994).

In Kigoma Region, Western Tanzania the prevalence of EBF among women was 58%. Knowledge of EBF was relatively higher (86%) compared to the practice. A multivariable analysis showed that women with adequate knowledge of EBF, women who delivered at health facilities and women who had no problems related to breasts, like engorgement/cracked nipples were more likely to exclusively breast feed compared to others .The study recommended that in order to improve EPF there is a need for strategies that target improving knowledge and skills for lactation management among women, as well as strategies to improve health facility delivery (Nkala and Msuya, 2011).

In Mexico, a national study reported that the percentage of exclusive breastfeeding till six months of age was only 8% (Gonzalez-Cossio et al., 2006). In South Africa breastfeeding is also common but exclusive breastfeeding is done for less than 3 months, this was mainly

associated with maternal socioeconomic status (Mamabolo et al., 2004b). However, in some rural areas in India the case is the opposite because of ignorance or poverty mothers would extend exclusive breastfeeding to eight months or even one year leading to infant malnutrition (Chhabra et al., 1998).

In the Arab countries the issue of breastfeeding varies among countries. A case control study conducted in Amman – Jordan revealed that only 30% of the surveyed infants were exclusively breastfed at 3 months of age, reported reasons behind this were mothers' employment and insufficient breast milk (Kilbride et al., 1999e).

In Lebanon, only 7% are exclusively breastfed till 4 months of age (UNICEF, 1995). A national survey found that mothers who initiated breastfeeding in the few hours post delivery had better chances with exclusive breastfeeding beyond 6 months of age (UNICEF, 1995). Moreover, and according to the Egyptian Demographic and Health Survey, the rate of exclusive breastfeeding at 0-3 months was 67.6%, while its prevalence dropped to 24.1% among those aged 4-6% (Kamnel N, 1997).

In Palestine, breastfeeding remains prevalent (96%) (PCBS, 2006). Exclusive breastfeeding for the first six months has increased from 17% in 2000 to 27% in 2006, but a continuing large gap in best practices, despite almost universal prevalence, indicates a critical need for better advice, management and breastfeeding support (WV, 2010).

The PCBS Report indicates that around 10% of children are weaned during the first three months of life and 26.5% of children at the age group of (0-5) months were exclusively breastfed (PCBS, 2012). A household survey at Al-Am'ari refugee camp in Ramallah showed that the rate of exclusive breastfeeding for 4 months and for 6 months was 10.1% and 3.4% respectively (Qleibo M, 2008).

A qualitative study by the World Vision on breastfeeding revealed that there is inadequate awareness of the mothers about exclusive breast feeding practice. Few mother practiced EBF without knowing about its meaning or its importance . Even if mothers are aware, exclusive breastfeeding is not understood by them. The majority of participants acknowledged the importance of exclusive breastfeeding after defining the term to them yet they have strong believe that children cannot depend on breast milk alone without

adding other types of fluids or foods. The study concluded that more women were aware that exclusive breastfeeding for 6 months is recommended, but very few would be able to practice it. The reasons given for why it would be “impossible” to convince women to adopt this practice were the need to give herbs, mothers did not have time to continue breastfeeding and babies must be given food to gain weight (WV, 2010).

In this qualitative study, several factors were shown to affect mothers’ feeding their infants exclusively. The factors were summarized as the issue of perceiving milk insufficiency, children’s colic, family pressure, the effect and pressure by mothers in law and families, mothers’ pregnancy and/or sickness, mothers being busy either at home or at work. In addition, women believed that exclusive breastfeeding would make it difficult for the infant to accept complementary foods after 6 months (WV, 2010). Similar findings were seen in the refugee camp, Al Amari camp, where women reported the occurrence of a new pregnancy as the main reason for breastfeeding cessation (Qleibo M, 2008).

2.3 Complementary Feeding practices and its determinants

According to the WHO Complementary feeding is the transition from exclusive breastfeeding to family foods. Typically it covers the period from 6–24 months of age which is a critical period of growth during which nutrient deficiencies and illnesses contribute globally to higher rates of under nutrition among children under five years of age. Therefore, WHO recommends that infants should receive nutritionally adequate and safe complementary foods, while continuing to breastfeed for up to two years or more. Moreover, complementary foods should be added to the diet of the child from six to 24 months of age inappropriate meals can cause malnutrition (WHO, 2012a).

In the United Kingdom 24% of mothers introduce solid food to their infants by the age of 3 months. The reported reasons behind this trend are mother beliefs that the baby is thirsty, babies need to different flavors and different nutritional value foods and drinks (Hamlyn B, 2000). Similarly, in Italy, 34% of Italian infants receive solid food prior to 4 months of age and 5.6% at 3 months of age. The reasons behind that were socioeconomic status, early introduction of formula and low baby weight at the age of one month (Giovannini et al., 2004c).

Socioeconomic status also plays a role in early introduction of liquids and solid to the babies in both the United Kingdom and Italy. In the United Kingdom younger mothers and those of lower socioeconomic status or never worked are more likely to do so (Savage et al., 1998). In Italy younger mothers tends to have lower duration of breastfeeding and therefore early introduction of formula or other complementary foods (Giovannini et al., 2004b). The same thing was reported in Canada; younger mothers, mothers of lower socioeconomic status and lower educational level are more likely to introduce solid foods earlier than recommended (Kwavnick BS, 1999).

In developing countries food are introduced very early. In South Africa introduction of some form of food is done by less than one month, infant growth was found to be affected by this (Mamabolo et al., 2004a). In West Africa early introduction of solid food takes place and it is low nutrient density and high bulk, low income groups would seldom give protein rich food to their babies (Onofiok and D.O.Nnanyelugo, 1998). In Semi –urban community in Ethiopia more than two third of infants were introduced to solid food prior to 4 months of age. Working mothers and mothers of higher income do it earlier. Feeding pattern and the consumption of vegetables and fruits were rare (Aregai W/Gebriel, 2000).

In Adamawa province of Cameron more than 75% of mothers would introduce complementary food to their infants between 3-6 months of age. High bulk low nutrient cereals and porridge are the main food, fruits and vegetables are seldom introduced. Mother's economic status might influence the type of complementary food to be introduced to the baby (Njongmeta Lynda NA, 2003).

In the Arab countries, complementary foods are introduced before 4 months of age. A case –control study conducted in Amman –Jordan revealed that complementary feeding would start before 4 months of age herbal drinks are widely used as well as solid food such as yogurt (Kilbride et al., 1999d). In Lebanon the introduction of complementary food is done in the first 1-3 months of age and the quality of food introduced is inappropriate (UNICEF, 1995). In the gulf countries, the Gulf Family Health Survey noted poor complementary feeding especially in Kuwait and Qatar showed that maternal education is associated with the time of introducing complementary feeding. Illiterate mothers introduce complementary feeding at more appropriate age (Fawzia A, 1997)

In Palestine, in the West Bank, the primary findings from the Household Baseline survey conducted by “Hanan ” project late fall 2005, revealed that among 494 mothers of children aged 0–11 months, 97.8% breastfed their children. As reported by them, at less than five months of age, 68.7% of mothers introduced fluids, 36% introduced soft foods and 17.6% introduced semi sold foods. About 5.3% of mothers did not start providing their children of this age with any kind of fluids. Another study conducted by Hanan project using “Focus Group Research on Selected Key Interventions revealed that most women reported starting their babies on solids by the 4th month. The introduced food included mashed fruits, rice with milk, egg yolk with milk, fruit juices, soups, cereals, liver, and bread (Hanan Project, 2005).

In the refugee camp household study, al Amari camp in Ramallah, more half (51.7%) of the indexed children received their first food between 4-6 months of age and only 19.7% at the age of 6 months and above. First food tastes were homemade cow's milk cooked with different additives like rice, starch, corn flour and sugar. Cooked cow's milk and whole egg are being introduced as early as 3 months of age. Empty calorie foods such as tea with biscuits, salty snacks are also being introduced at an early age taking the place of high nutrient foods (Qleibo M, 2008).

A conducted focus group research on selected key maternal and child health interventions in the villages of Bethlehem in year 2010 revealed that almost all mothers introduced fluids to their children very early in life. Liquids are introduced almost immediately after birth in the form of herbs and water. Mothers were convinced that herbal drinks should not interfere with exclusive breastfeeding since it is believed by almost all mothers to alleviate child's colic or cramps. They usually give herbal drink like Anise, mint, silver colored sugar, cherry, and sage to treat abdominal colic and distension and to keep children calm or sleepy. This practice decreased dramatically after the age of three months. This can be also explained by the fact that child colic usually disappear around the age of three months. Most mothers start adding pudding at age of three months , minced fruits such as banana and apple, vegetable such as potato and carrots and rice at the age of four, and boiled while egg and chicken liver at the age of six months (WV, 2010).

2.4 Newborn daily home care practices and its determinants

The postnatal period is critical for the newborn as a significant percent of infant deaths occur during this period (WHO, 2006). Most people are unaware of the importance of such a care. Many unsafe behaviors that can be very harmful and sometimes cause death do exist most these practices are based on deep-seated traditional beliefs. Some of these harmful practiced behaviors are common use of untrained attendants, unsafe cord care, immediate bathing of baby, most of the existing practices are based on deep-seated traditional beliefs (Warren et al , 2005) .

In sub-Saharan Africa, a cross sectional study was conducted. The study showed that neonatal mortality rates are high. This was due to some of the unacceptable practices they subjected their newborns to such as bathing their babies within 6 hours of delivery and putting harmful materials on the cord to help it dry this was practiced by at least 28% of the mothers (Penfold et al.,2010).

Another study that was conducted in Eastern Uganda revealed that newborns were subjected to many harmful practices. Only 38% were judged to have had good cord care, and only 42% received optimal thermal care. Mothers were putting powder on the cord believing it will help it to dry (Waiswa et al., 2010).

In Bangladesh, a Demographic Health Survey was conducted from March 24 to August 11, 2007, revealed that only 42.8% and 5.1% newborns received complete cord care and complete thermal protection. Higher level of maternal education and richest bands of wealth were associated with complete thermal care and postnatal care within 24 hours of birth (NIPORT, 2007).

In Pakistan, a community based cross-sectional study revealed that unhealthy newborn care practices are highly prevalent, bathing the baby immediately after birth was practiced by 56%, application of substances on umbilical cord was practiced by 58% and harmful body massage was practiced by 89%, some of the mentioned reasons were the absence of the resources and strategies and to address this problem (Ayaz and Saleem, 2010).

In the Arab countries, similar situation was seen. A survey on newborn home care practices covering of 217 households in three rural Egyptian governorates during the first week of life revealed that nearly half (43%) of mothers did not wash their hands before neonatal care, and only 7% washed hands after diaper changes (Darmstadt et al., 2007).

In the North of Jordan a household cross-sectional population survey was conducted over showed that for the umbilical cord care 40% of mothers used sulfa powder, 13% used alcohol swabs and 25% used traditional methods such as salty water, cigarette ash and coins and for treating Jaundice 37% of mothers used home light 18 % used sugared water, 15% used garlic necklaces and 21% exposed their infants to the sun. Only 50% of the mothers realized that jaundice may have future disability effect on babies (Khassawneh et al., 2006).

In Palestine, in the West Bank, studies reveal that there are many commonly practiced behaviors pertaining to neonates that are harmful. These harmful practices were in particular concerned with those having to do with covering the umbilicus. Using a gauze was practiced by 40% of Palestinian families in contravention of clean cord care. About 20% of the families give their infants water and sugar which contradicts the practice of exclusive breastfeeding and makes the neonate vulnerable to bacteria from unclean water and other contaminants (Hanan Project, 2005).

A qualitative study on selected key maternal and child health intervention conducted by World Vision in the villages of Bethlehem in year (2010) revealed that mothers; considered bathing and cleaning their children important component of newborn care, Most mothers performed it on weekly bases and few women bath their children daily, mothers mentioned that newborns do not need frequent bathing if they wash the diaper area thoroughly during diaper changes. Moreover, the study indicated that the majority of these women did not know how to bath their babies especially the first time mothers and relied on their grandmothers in law till the age of 3 to 6 months. They considered bathing newborn tricky and dangerous and were afraid the baby might slip from their hands. Most women used local made soap “Nablsieh” for bathing their children because it is natural and soft on baby skin (WV, 2010).

Newborn care practices are totally affected by cultural beliefs of mothers and their families. A conducted focus group research on selected key maternal and child health interventions in Bethlehem villages showed that mothers in Palestine are still bathing their newborns with salt and water which was a very common practice among the interviewed mothers in the villages of Bethlehem governorate. Salting newborn babies is one of the traditions that started since several thousands of years ago, since the Greeks and the Romans. This practice is considered dangerous and potentially lethal even very small amounts of salt especially if they get the salt into their mouth (WV, 2010).

Another old newborn practice in Palestine that is still practiced by the new mothers is wrapping the newborns tightly using “Koflayeh”, which is a cloth they use to wrap the newborns in order to keep the body straight, to protect their bones from fractures and protect the newborn from falling down as well as help them to hold their baby. They considered wrapping important especially during the first three months. Mothers in a focus group research by World Vision on selected key maternal and child health intervention in the villages of Bethlehem reported that they were being encouraged by their mothers in law to wrap their baby arguing they had done the same with their children. Few mothers wrapped at night to be able to put the baby on the right side to prevent from suffocation if he/she vomited during sleep. More old practices such as massaging of newborns, using baby oil after bath, using “khol” and onions for newborn eyes, and dabbed kohl on their umbilical cord are used. This study concluded that it is obvious that mothers lack sufficient knowledge about this important issue and they need to be educated and counseled about the types of supplements that should be given to their children and its benefits. Adol as it is known a Vitamin A and D drops and is not used to prevent or treat iron deficiency anemia (WV, 2010).

2.5 Recognizing infants danger signs and care seeking behaviors

Appropriate care seeking and illness care for infants are very important. Young children can die very quickly if an illness is not recognized. Sick young infants must be taken immediately to a trained provider who can give appropriate care. Families need to be able to respond appropriately when their children are sick, seek a timely assistance when children need additional care and give the recommended treatments. Therefore, care seeking interventions have the potential to substantially reduce child mortality. In

developing countries large numbers of children die without ever reaching a health facility and due to delays in seeking care (Terra de Souza AC, 2000).

The World Health Organization estimated seeking prompt and appropriate care could reduce child deaths due to acute respiratory infections by 20%, it estimates that seeking prompt and appropriate care could reduce child deaths due to acute respiratory infections by 20%. Each year more than eight million young children in low-and middle-income countries die before they reach their fifth birthday. Seven in ten of these deaths are due to preventable and treatable conditions. Almost all of these children could survive and thrive with access to simple, affordable care. The large number of child deaths in developing countries is associated with delays in care-seeking by families (WHO, 2011).

Many factors are associated with health care seeking behavior; socio-economic factors (mother's education, household wealth and mother's work status) play a strong and significant role in determining health-seeking behavior, health services availability is also a main determinant (Shaikh BT, 2004).

Despite the many improvements in water treatment, sanitation, education, and medical care in the United States, diarrhea remains one of the most common illnesses of children less than 5 years of age. Children experience greater than 20 million episodes of diarrhea each year, leading to several million doctor visits, 200,000 hospitalizations, and approximately 400 deaths. Much of this morbidity is due to the dehydration associated with acute watery diarrhea, as indicated by the CDC improved management of children with diarrhea among all practitioners as well as parents could lead to a noticeable decrease in the number of children who are hospitalized or die as a result of diarrheal illness (CDC, 1992).

A study conducted in the USA showed that risk for diarrheal deaths especially among low birth weight infants is high it reached to around 56%,it was recommend that new efforts are required to understand and improve the diagnosis of and therapy for diarrhea among these infants. The study concluded that diarrheal deaths remain a social problem and efforts need to focus on improved education and home-based rehydration therapy for children whose mothers fit the high-risk profile and who may lack adequate access to health care (Parashar et al., 1998). Similar situation is seen in France. Every year infant's diarrhea is responsible for the death of 50-80 children under the age of 5 and the

hospitalization of approximately 50,000 children principally related to the dehydration (Pulique,2004).

In developing countries, the issue of care seeking for newborn was recognized as a serious factor that might lead to infants' death. A study that was conducted in rural Ghana showed that several danger symptoms were not recognized by caregivers and care-seeking barriers included classifying certain illnesses as 'not-for-hospital' and untreatable by modern medicine, access problems and frequent use of traditional medicines (Hill et al., 2003). Similarly, in Lusaka in Zambia a study showed that the more educated mothers were more likely to respond immediately to the newborn or infants' danger signs (Fujino et al., 2009).

A cross-sectional study conducted in three of the 27 primary health centers in Wardha district in India showed that about 67.2 % mothers knew at least one newborn danger sign. Majority of mothers (87.4%) responded that the sick child should be immediately taken to the doctor but only 41.8% of such sick newborns got treatment either from government hospital (21.8%) or from private hospital (20%) and 46.1% of sick babies received no treatment. As told by mothers, the reasons for not taking actions even in presence of danger signs/symptoms were ignorance of parents, lack of money, faith in supernatural causes, non availability of transport, home remedy, non availability of doctor and absence of responsible person at home. The study found gap between mothers' knowledge and their health seeking behavior for sick newborn and explored their deep perceptions, constraints and various traditional treatments (Dongre et al., 2008b).

Another study conducted in India among 106 mothers in a rural area to determine how they would recognize pneumonia in children, therapies they practice for mild acute respiratory illnesses (ARI) and pneumonia, and the feeding practices they have adopted. Most mothers reported that they recognized pneumonia by observing the quick respiratory rate and difficulty in breathing. With regard to management of mild ARI episodes, more than 1/2 of the mothers preferred not to give any treatment or to use only home remedies. In pneumonias, a majority preferred to consult a qualified doctor. Nearly 1/3 of them were of the opinion that they would take the child to a hospital if the disease was severe. Most of them stated that they would continue feeding, fluids, and breastfeeds. Only 10% said they would stop and 15% said they would decrease the amounts (Kapoor et al., 1990a).

A cross sectional survey conducted in a Riparian community of Lake Victoria basin in Tanzania revealed that typical symptoms of severe dehydration (sunken eyes, loss of skin turgor, dry tears) were poorly recognized by mothers as characteristics of severe diarrheal diseases. Over 85% of the respondents practiced appropriate dietary measures or increased fluid intake for a child who had diarrhea. Use of anti-diarrhea (40.8%) and antibiotic medications (34.8%) were common in the treatment of diarrheal diseases (Kaatano et al., 2006b).

Another study to identify the effects of social variables on symptom recognition and medical care seeking behavior for acute respiratory infections in infants in urban Mongolia revealed that; delay in medical care seeking (>3 days from acute lower respiratory infection (ALRI) symptom onset) was associated with younger maternal age, single child families, absent father and residence more than 1 kilometer from a clinic. The study concluded that there is a continuing need to educate care givers of infants in the management of ARI, particularly those of younger age and those with limited family support (Gombojav et al., 2009).

A study that was conducted in Nigeria to address the relationship between socio-demographic factors and appropriate health care-seeking behavior for childhood illnesses revealed that maternal age, maternal education, and family socioeconomic status are predictors of appropriate healthcare-seeking behaviors for childhood illnesses (Ogunlesi and Olanrewaju, 2010).

In the Arab countries, the World Bank year 2008 report revealed that children with diarrhea (two weeks prior to the survey) who received oral rehydration therapy or increased fluids, with continued feeding in Syria, Jordan and Egypt were as follows: 34.2% in Syria, 32.2 % in Jordan and 19% in Egypt. Regarding ARI treatment (% of children under 5 taken to a health provider) the report revealed that in Egypt the percentage during 2008 was 73%, in Jordan it was 75% and in Syria it was 77% (World Bank, 2008).

A study that was conducted in Egypt with a total sample size of 11,032 revealed that seasonally adjusted diarrhea incidence was 3.6 episodes per child under five years of age per year which means a minimum estimate of 30 million cases annually in Egypt. Although the majority of the caretakers knew of Oral Rehydration Salts (ORS), only 22%

of cases with diarrhea in the last 24 hours received ORS. 54% of cases had received drugs, and many of the children with diarrhea received more than one drug. The source of drug prescription was most often a private doctor and the use of drugs was common among government doctors and health workers. The high proportion of cases treated with drugs, other than ORS, is the major problem in diarrheal home case management in Egypt. The message of ORS has penetrated into the general population well, but the practices of health professionals have not changed. Based on the study it was recommended that training of health workers in correct case management is needed. Pediatrics forms of symptomatic anti diarrheal drugs should also be withdrawn from the market (Josilahti et al , 1997).

In Palestine, diarrhea is still considered as a major health problem among children under 5 years of age. Only 63% were treated with ORS and / or increased fluids. Most families do not refer to the health facility when their children suffer from diarrhea, their knowledge and practices regarding home management are very poor, they should be counseled about feeding practices during and after diarrhea, and misperceptions about the benefits of anti-diarrheal and how to prepare ORS at home (PCBS, 2006).

The Palestinian Centers of Bureau Statistics (PCBS) report revealed that referral to health providers is high among children suffering from acute respiratory infections (ARI). However timing of referral (delay in seeking medical advice) and the ability of PHC centers to act in their filtering role is still perceived as a major problem. A73% of pneumonia case were taken to appropriate health and 70 % were given antibiotics (PCBS, 2006).

According to the World vision report on selected key maternal and child health interventions, the Palestinian mothers still can't determine if the respiratory infections need treatment by professionals or not and that clarifies the delay in seeking care, most of them start using ineffective traditional remedies and once there is no improvements they refer to the healthcare provider (WV, 2010).

A household study that was conducted by World Vision in West Jenin and East of Hebron villages in the year 2009 revealed that by average 84.5% of mothers did not think that if the infant looks unwell or not playing is a danger sign. Of these mothers, 71.1% did not think that not eating or drinking is a danger sign , whereas 80% think that high fever or

convulsions is very dangerous sign. Also, 83% did not think that fast or difficult breathing is a danger sign, 71% don't think that vomiting is a danger sign and 92% did not think that lethargic or difficult awake is a danger sign. In this study, women in a focus group discussion mentioned that they take fever signs into consideration, and seek help from nearest health center or clinic others mentioned that the high cost they pay for doctors and transportations cost to reach centers forbids them from taking children to treatment (WV , 2009).

2.6 Effectiveness of home based interventions

The home based or community care packages include maternal care, essential newborn care, improving the behavior change communication of the community, resuscitation of newborn babies at the time of home delivery, and management of sick newborns with antibiotics at home. Studies have reported one-third to two-third reduction of mortality among newborns after home based care interventions (Dutta, 2009).

A randomized controlled trial in a socially and economically disadvantaged areas of Sydney, Australia, that aimed to assess the effectiveness of a home-based early intervention by community nurses on infant feeding practices, found that the intervention significantly improved some infant feeding practices. The study intervention group had a significantly higher median duration of breastfeeding at 12 months than the control group (17 weeks [95% confidence interval, 13.9-20.4 weeks] versus 13 weeks [95% confidence interval, 10.1-15.0 weeks]; $P = .03$). Compared with the control group, the hazard ratio for stopping breastfeeding in the intervention group was 0.82 (95% confidence interval, 0.68-0.99). The intervention also resulted in a significantly later introduction of solid foods ($P < .001$ for trend), reducing the proportion of mothers who introduced solids before 6 months by 12% (95% confidence interval, 4%-20%) from 74% to 62%. The intervention also decreased the age at which infants started tummy time ($P = .03$ for trend) and increased the daily practice of tummy time by 7% from 76% to 83% ($P = .05$) (Wen et al., 2011b).

A study to test the effectiveness of home visits by community health workers to prevent neonatal deaths in south Asia showed a reduced risk of neonatal death (relative risk, RR: 0.62; 95% confidence interval, CI: 0.44-0.87) and a significant improvement in antenatal

and neonatal practice indicators (>1 antenatal check-up, 2 doses of maternal tetanus toxoid, clean umbilical cord care, early breastfeeding and delayed bathing (Gogia and Sachdev, 2010).

An observational cohort study on the effect of timing of first postnatal care home visit on neonatal mortality in Bangladesh showed that postnatal home visits within the first two days of life by trained community health workers can significantly reduce neonatal mortality. The study included 9,211 live births. Among infants who survived the first day of life, neonatal mortality was 67% lower in those who received a visit on day one than in those who received no visit. For those infants who survived the first two days of life, receiving the first visit on the second day was associated with a 64% lower neonatal mortality than in those who did not receive a visit. First visits on any day after the second day of life were not associated with reduced mortality (Baqui et al., 2009).

A report submitted by the WHO /UNICEF on home visits effectiveness for the newborn child revealed that home visits help families in identifying newborn problems early and in dealing with constraints to care seeking from appropriate providers. Home visits have also been shown useful to promote practices to keep the baby warm, promote exclusive breastfeeding and its early initiation, and to improve hygiene, it was recommended that newborns and their mothers should be examined for danger signs at home visits. At the same time, families should be counseled on identification of these danger signs and the need for prompt care seeking if one or more of them are present (WHO/UNICEF, 2009).

Large-scale community-level programs designed to improve breastfeeding practices were implemented in Bolivia, Ghana, and Madagascar, a results of such intervention was that timely initiation of breastfeeding (within 1 hour of birth) increased from 56% to 74% ($P < .001$) in Bolivia, 32% to 40% ($P < .05$) in Ghana, and 34% to 78% ($P < .001$) in Madagascar. Marked increases in exclusive breastfeeding of infants 0 to 6 months of age were also documented, it ranged from 54% to 65% ($P < .001$) in Bolivia, 68% to 79% ($P < .001$) in Ghana, and 46% to 68% ($P < .001$) in Madagascar. In Ghana and Madagascar, significant results were seen within 1 year of community interventions. The authors concluded that large-scale programs designed to improve breastfeeding practices are

feasible and should be a central component of any child survival strategy (Quinn et al., 2005b).

A situational review of infant and young child feeding practices and interventions in Viet Nam revealed that early introduction, and low nutrient quality of complementary foods are associated with maternal poor knowledge, the study also recommended to address this problem through direct targeting the family (Nguyen et al., 2011).

A study that was conducted in Nilphamari district in Bangladesh , revealed that after a year of MNCH intervention with the presence of trained health workers in newborn care management ,improvements in newborn care irrespective of any other variables were significant , across the study area, 53% of the infants were bathed at least after 3 days (Baqui et al.,2009).

2.7 Timed and Targeted Counseling

The right messages to the right people at the right time, the Community Health Worker – Timed and Targeted Counseling framework was developed by World Vision in partnership with WHO, UNICEF, the American College of Nurse-Midwives, and the USAID Health Care Improvement Project, building substantially from the following resources produced by these partners:

- WHO/UNICEF CHW curricula:
 - Caring for the Newborn at Home
 - Counsel the Family on Feeding
 - Caring for the Sick Child
- UNICEF: Facts for Life
- WV India Timed & Targeted Counseling
- American College of Nurse Midwives, Home Based Life Saving Skills, (HBLSS)
- USAID Health Care Improvement Project

A child survival project was implemented by World Vision in Pragati in three Uttar Pradesh districts strove to improve health outcomes and change behaviors related to

women's and children's health, and to ensure that pregnant women and new mothers had ready access to proper information, the main focus of the intervention was on family planning issues. World Vision's innovation in this project was a timed and targeted approach. A comprehensive package of training, tracking tools, job aids and supervision protocols were developed. The intervention was implemented by India's community volunteer structure, regular home visits were carried out by Anganwadi workers over four years, outcomes from the final evaluation indicate significant household behavioral change, and the following changes were highlighted as the most significant changes:

- Immunization coverage increased from 33 to 53.2 percent.
- Proper child feeding practices increased from 38 to 81.2 percent
- Use of modern contraception increased from 12 to 27 percent

This research indicated that the timed and targeted approach was culturally appropriate and that it facilitated the adoption of different healthy practices. The Indian government and other NGOs are now replicating the approach using different messages according to the need (WV, 2006).

Chapter 3: Conceptual framework and Intervention approach

3.1 Introduction

In this chapter the study conceptual model and the study approach that was adopted for the field work (timed and targeted counseling) will be described.

3.2 The conceptual frame work:

In this study we are adapting the WHO general guidelines and recommendations for new born care. In the coming section the study conceptual framework is described.

The conceptual framework summarizes all factors that may affect the newborn care. For this study these factors include: mothers knowledge and practices related to infant feeding and infant day care practices, mothers recognition of infants danger signs, infants health status and the demographic factors . All the mentioned factors except the socio-demographic factors were measured twice before and after the intervention.

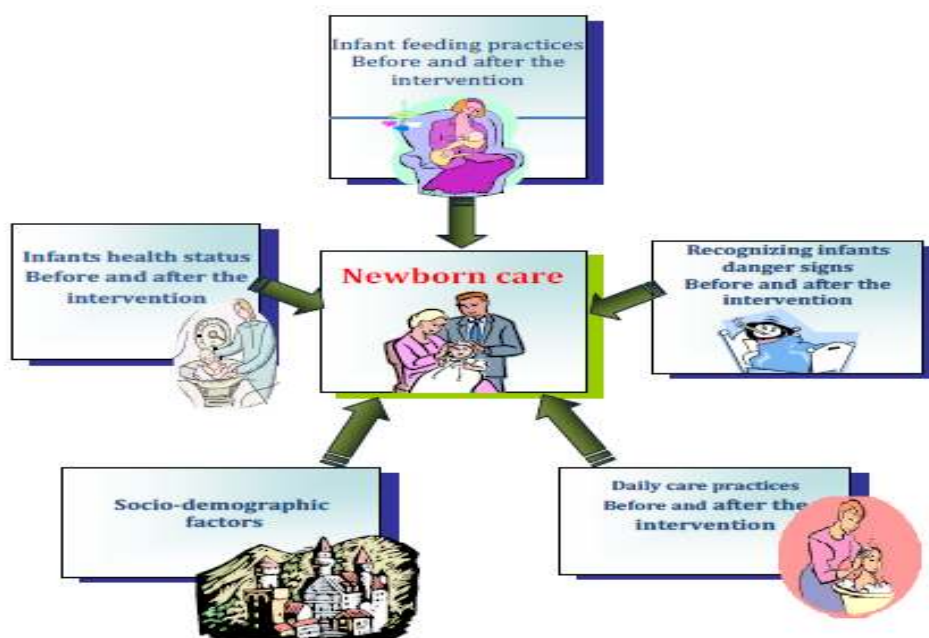


Figure 3.1: The Study conceptual framework

For this intervention study Timed and Targeted counseling approach was adopted (details are described in the intervention approach below). Proper timely messages were delivered to the mother through the community health workers, a manual prepared by World Vision in 2010/2011 (Community health worker manual for Timed and targeted counseling) was used, messages within this manual were mainly derived from World Health Organization guidelines.

All the factors that are part of the conceptual frame work such as the feeding practices, newborn day care, recognition of danger signs and the health monitoring are described in details within the intervention approach.

3.3 The “Timed and Targeted counseling, TTC” approach

“Timed and Targeted Counseling” (TTC) refers to a “community health worker / volunteer” approach that aims in extending primary health care counseling to the household level. This approach was built around evidence-based, cost effective key interventions for pregnant women and children under two years of age that, when taken together, can significantly reduce maternal and infant/young child morbidity and mortality. The key interventions include: strengthening of household practices to promote child growth and development; prevention of childhood illnesses; appropriately management of childhood illness at home and recognize danger signs for timely referral to health care services (HCS); promotion of healthy pregnancy; prevention of pregnancy-related complications; and utilization of contraceptives for family planning (wv, 2010).

This approach is designed to enable messages to be appropriately:

- **Timed**: neither too early, nor too late for the behavior to be practiced.
- **Targeted**: to those who would practice these behaviors and to those who would influence the decision to adopt these behaviors.
- **Counseling**: such a counseling is communicated in a secure environment that encourages open discussion with a skilled and knowledgeable provider (WV, 2010).

In order to carry out this intervention, community health workers should be identified and trained, in return community health volunteers/workers should identify pregnant women, track them over time to deliver “timed counseling”, follow up on previously delivered messages and document services utilized and changes in behavior.

In the TTC approach, a range of messages can be selected, the selected messages may differ from one country to another and even within the same country depending on country context, in our research and based on the literature review and as mentioned earlier our findings revealed the importance of covering infant feeding practices, caring practices, recognizing danger signs and health seeking behavior.

The below sections present newborn care practices guidelines and recommendations from which community health workers training course and home messages were derived .

3.3.1 Infant feeding practices:

In this section intervention approach details regarding infant feeding practices ; breastfeeding and complementary feeding are described in details .

3.3.1.1 Breastfeeding

In the TTC approach, counseling visits on breastfeeding were conducted by the community health workers late during pregnancy and within 2 days of childbirth.

Counseling during these times was considered as the most appropriate time to assess the outcomes of timely initiation of breastfeeding and feeding of colostrums.

Community health workers advised the mothers to breastfeed their infants immediately or as soon as possible within 30 minutes after delivery, they also explained the importance of the first milk (colostrum or yellow milk) by explaining to them how it protects the baby from illness, they explained to the mothers colostrum fighting properties and it is vitamins and nutrients content , that helps the baby get stronger and healthier ; they also explained to the mothers the importance of early suckling which helps them in making more milk and helps in keeping the baby warm.

➤ Exclusive Breastfeeding

According to the World Health Organization (WHO) exclusive breastfeeding is defined as infant receiving only breast milk, no other liquids or solids are allowed with the exception

of drops and syrups of vitamins, minerals or medicines and no other food or drink, not even water, is needed during this period for the first six months (WHO, 2011a).

Giving the baby only breast milk gives the baby a chance to grow and stay healthy, it also helps to protect him from diarrhea, pneumonia and other infections. Indeed, giving other food or fluids reduces the amount of breast milk the child takes, and the amount of breast milk the mother produces (WHO, 2012b).

In the TTC approach, later pregnancy and post delivery (within 2 days) were also determined as the proper time for community health workers to deliver messages on exclusive breastfeeding, as mentioned earlier messages and training materials were obtained from World Vision Manual. Community health workers started by explaining what does EBF term mean and its importance for the babies to stay healthy and protected from disease.

Part from this is also on discouraging the mothers on the use of a feeding bottle, they explained to them how it interferes with the newborn's suckling on the breast, and how it makes it more difficult for the newborn to breastfeed.

They also explained how difficult it will be to clean the bottle and its nipple and therefore the possibility of water, feeding bottles, and utensils on passing germs to the young infant, even when they appear "clean" which in turn can cause illness to the child.

Community health workers also explained to the mothers, young infants difficulty in digesting animal milk, and its side effects such as diarrhea, rashes, or other symptoms of allergies and malnourishment in case of persistent diarrhea (WV, 2011).

➤ **Assisting mothers to breastfeed**

It's not only about messages delivered by the community health workers, another important role for them right after the delivery is to assist mothers to breastfeed, this is a very crucial step, it was found that a lot of mothers are not aware on how to probably breastfeed, which in return affect their ability to breastfeed.

Community health workers messages and information on breastfeeding were obtained from World Vision Manual, and through the visits they conducted they were requested to assure the following:

Mother's is drinking enough water to satisfy her thirst. The breasts may be gently massaged from the back to the front to help the milk come down, it is also important that the mother is in a comfortable position for breastfeeding (WV, 2011).

The mother should let the baby finish on one breast before switching to the other breast to help the baby get the nutritious fat rich milk at the end of the feed. She should begin each breastfeed on a different breast (WV, 2011).

There may be instances when the mother is not able to breastfeed her child immediately after birth, perhaps because of complications during delivery that have affected the mother. If the mother is unconscious or has other delivery-related problems such as hemorrhage or fits and is unable to breastfeed, one alternative is to express her breast milk and feed it to the baby in a clean cup (WV, 2011).

It is also important to teach them how to express breast milk if the mother expects to return to work shortly after birth, or will be away from her baby for extended periods of time for other reasons, mothers should know that expressed breast milk should be kept covered in a clean container it will remain fresh for about 8 hours (WV, 2011).

3.3.1.2 Complementary feeding

Typically covers the period from 6–24 months of age- is a critical period of growth during which nutrient deficiencies and illnesses contribute globally to higher rates of under nutrition among children under five years of age, foods with proper quality and quantity should be introduced (WHO, 2012a).

According to UNICEF, a complementary food is defined as any non-breast milk foods or nutritive liquids given to young children after 6 months of age where exclusive breastfeeding doesn't meet their rapid growth requirements. Complementary feeding is defined as the process of introducing these foods (UNICEF, 2007).

➤ **Feeding Recommendations from Six to Nine Months**

In the TTC approach, counseling visits on complementary feeding were conducted by the community health workers, when the baby was five months old, counseling at the five months of the babies' age was considered as the most appropriate time to discuss initiation of complementary feeds.

Community health workers started this counseling visit by informing the mothers that they should start feeding the baby when he is 6 months of age and that they should steadily increase the amount of food, so that the baby would get half a cup of food three times each day, they also advised the mothers that they should continue to breastfeed the baby day and night and that they should continue breastfeeding and introducing foods even when the baby is ill.

All messages and training materials were obtained from the World Vision CHW manual (WHO recommendations) on infant feeding, and what makes these data important is that community health workers should be convincing when they deliver the messages to the mothers, and therefore they should have a clear explanation for the importance of following the messages and what negative effects could affect the babies in case they didn't follow it.

Below is the detailed information from which household messages and training materials were obtained.

Children older than 6 months still benefit from breastfeeding. Breast milk continues to protect them from many illnesses, and helps them grow. All mothers should continue to breastfeed as often as the child wants, however, at six months of age, breast milk alone cannot meet all of the child's nutritional needs, without additional food, children can lose weight and falter during this critical period .

Families should introduce complementary foods to the child when he/she reaches six months of age. Examples of appropriate complementary foods are thick cereal with added oil or milk, fruits, vegetables, pulses, meat, eggs, fish and milk products. Locally available,

nutritious grains can be used to make a thick porridge and emphasize the need for nutritious food from animal sources .

One of the most important types of complementary foods is those that are rich in iron. By six months of age breast milk can no longer meet all the iron needs of the infant, and anemia in the infant is likely if he/she is also not getting enough iron in foods. Iron-rich foods include liver, other animal foods, and dark green leafy vegetables .

Families should start by giving 2 to 3 spoonfuls of thick porridge and well mashed foods during 2 to 3 meals each day. Gradually they should increase to about half a cup for each meal. They can offer 1 or 2 semi-solid “snacks” each day between meals, if the child is hungry (WV, 2011).

Until the child can feed himself, an adult or older sibling should sit with the child during meals and help the child eat. Soon the child will try to grab small pieces of food. He should be allowed to develop this skill. Giving the child food to eat with his fingers can increase his interest in eating. However, while children are learning to feed themselves, they still need to be fed most of the food, to make sure that they eat enough .

The child should not have to compete with older brothers and sisters for food from a common plate. With a common plate, also, it is difficult to know how much each child has eaten. It is important to wash hands before preparing food and before eating. The infant’s hands should also be washed .

Feed infants directly and help older children when they feed themselves. Feed slowly and patiently, and encourage children to eat, but do not force them .

If children refuse many foods, experiment with different food combinations, tastes, textures and methods of encouragement. If the child refuses a particular food, wait a few days and offer the food again. Repeat this several times over a period of weeks. Do not try to introduce too many foods at the same time .

Minimize distractions during meals; if the child loses interest easily remember that feeding times are periods of learning and love – talk to children during feeding, with eye to eye contact (WV, 2011).

➤ **Child Feeding at Nine Months**

In the TTC approach, visits were also conducted when the babies were eight months old. These visits were just before the time when the amount of complementary food needs to be increased. Community health workers advised mothers to increase the food that they give to their babies when they reach nine months of age; they also informed them that they can give their babies one cup of food four times a day. They also advised mothers to continue to breastfeed their babies day and night.

As mentioned earlier messages and training materials were obtained from the CHW manual as follows:

- All nine month old babies should continue to breastfeed. When the child is hungry, the mother should breastfeed him/her first, before giving complementary foods .
- Children at this age should eat four times per day instead of three times. Food should be given from all three food groups and may be finely chopped or mashed
- The mother should make sure that the child is eating foods rich in iron such as : liver, animal foods and dark green leafy vegetables, and foods rich in vitamin A such as : liver, eggs, sweet potatoes and carrots.
- The child should continue to eat from a separate plate so that the mother can be sure that he/she is getting enough .
- All family members should wash their hands before preparing food , before eating and before feeding the child (WV, 2011).

3.3.2 Children danger signs:

The large number of child deaths in developing countries is associated with delays in care-seeking by families. General danger signs are children with serious, nonspecific signs that do not point to a particular diagnosis. Great care should be taken to ensure that these general danger signs are not overlooked because they suggest that a child is severely ill and needs urgent attention (WHO/UNICEF, 2009). The following danger signs should be routinely checked in all children:

- The child has had convulsions during the present illness. Convulsions may be the result of fever. In this instance, they do little harm beyond frightening the mother. On the other hand, convulsions may be associated with meningitis, cerebral malaria or other life-threatening conditions. All children who have had convulsions during the present illness should be considered seriously ill.
- The child is unconscious or lethargic. An unconscious child is likely to be seriously ill. A lethargic child, who is awake but does not take any notice of his or her surroundings or does not respond normally to sounds or movement, may also be very sick. These signs may be associated with many conditions.
- The child is unable to drink or breastfeed. A child may be unable to drink either because s/he is too weak or because s/he cannot swallow. Do not rely completely on the mother's evidence for this, but observe while she tries to breastfeed or to give the child something to drink.
- The child vomits everything. The vomiting itself may be a sign of serious illness, but it is also important to note because such a child will not be able to take medication or fluids for rehydration.

If a child has one or more of these signs, s/he must be considered seriously ill and will always need referral. In order to start treatment for severe illnesses without delay, the child should be quickly assessed for the most important causes of serious illness and death — acute respiratory infection (ARI), diarrhea, and fever (especially associated with malaria

and measles). A rapid assessment of nutritional status is also essential, as malnutrition is another main cause of death (WHO/UNICEF, 2009).

In the TTC approach, one of the important roles of the community health workers was to improve mothers ability to recognize potentially life-threatening symptoms of major childhood illnesses, educating them about the importance of danger signs and immediate care-seeking practices , they were also requested to educate mothers on the importance of increasing fluid and food intake especially during diarrhea, they also taught mothers on how to prepare ORS in case of diarrhea , these messages were delivered to mothers after the babies birth , mothers were reminded of these messages on monthly basis, community health workers were also responsible for checking on any danger sign each time they visit the mothers.

All messages and learning materials were obtained from World Vision CHW manual, recommendations we used are summarized below:

Babies' danger signs include:

- Baby has difficult or fast breathing and/or an indrawn chest
- Baby feels hot or unusually cold
- Baby is rigid, or is having fits
- The baby's body turns yellowish
- The baby is less active than usual, or inactive
- The baby has not been able to feed since birth, or has stopped feeding well
- The baby has three or more watery stools per day
- Pus draining from the eyes
- Cord is swollen, red or oozing liquid or pus
- Body blisters, usually on the back or stomach
- The child has a fever
- The child has persistent vomiting, vomits everything
- The child has a cough together with an indrawn chest
- The child has blood in the stools
- Pus in the ears, or swelling behind the ears .

Sometimes, coughs and colds are signs of a serious problem. An infant or child who is breathing rapidly or with difficulty might have pneumonia, an infection of the lungs whereby the lungs fill with fluid and the baby cannot breathe. Pneumonia is a life-threatening disease and the child needs immediate treatment at a health facility many children die of pneumonia at home because their caregivers do not realize the seriousness of the illness and the need for immediate medical care, families can help prevent pneumonia by making sure that babies are exclusively breastfed for the first six months and that all children are well nourished and fully immunized.

A child with a harsh cough also needs immediate medical attention. The child may have tuberculosis, another type of infection in the lungs.

Children and pregnant women are particularly at risk when exposed to smoke from tobacco or cooking fires.

A child under six months of age suffering or recovering from any illness, especially with fever, needs plenty of breast milk. Children older than six months need plenty of liquids and food.

Diarrhea which is defined as three or more watery stools in a day, kills children by draining liquid from the body, thus dehydrating the child. As soon as diarrhea starts, it is essential that the child be given extra fluids as well as regular foods.

All diarrhea needs treatment. The child should be given Oral Rehydration Salts Solution (ORS) and Zinc. ORS in water prevents and treats dehydration. ORS can usually be obtained at the health clinic, and sometimes in shops. Zinc helps to reduce the seriousness of the diarrhea and can even prevent diarrhea in future months. Zinc is obtained at the clinic.

A child with diarrhea needs to continue eating regularly. While recovering from diarrhea, the child needs an extra meal every day for at least two weeks.

A child's life is in danger if there are several watery stools within an hour or if there is blood in the feces. Immediate help from a trained health worker is needed

Diarrhea becomes more frequent in children once complementary foods are introduced, because of the sometimes unsanitary preparation of these foods.

Breastfeeding can reduce the severity and frequency of diarrhea. Mothers should continue to breastfeed their child on demand .

Good hygiene practices protect against diarrhea. It is important to wash hands after using the toilet and before cooking and eating. It is also important dispose of feces in a latrine or buries them.

In case ORS packages are not available Sugar-Salt Solution, can be prepared at home It should contain water to hydrates and reverses the dehydration, sugar for energy, salt as it helps to hold water in the cells.

It can be prepared by getting one liter of pure, clean water (boiled, treated or bottled) 8 spoons or 8 cubes of sugar, one teaspoon of salt (or two pinches of salt using three fingers).

Children should be fed the sugar-salt mixture from a clean cup, never from a bottle.

The child should be encouraged to drink as much as possible, a child under two years needs to drink about a half a large cup after each watery stool (WV, 2011).

3.3.3 Home care practices

Care practices at birth reduce neonatal morbidity and mortality. These have been described by the WHO as essential newborn care (ENC) practices and include clean cord care, thermal care and initiating breast feeding immediately or within the first hour after birth. It also includes care seeking and caring for a sick child, which means preventing all harmful practices (Darmstadt, et. al., 2005).

Newborn care practices immediately following delivery contribute to reduce a newborn's risk of morbidity and mortality (WHO 1996). Therefore understanding routine newborn care practices at home is necessary to design and prioritize interventions to reduce neonatal morbidity and mortality (BRAC, 2008).

➤ New born care practices (home care practices)

The first hours after a baby is born are very important. The care that is given to the baby during this critical period is crucial for his or her survival.

It is very important, for example, that newborns are kept warm - especially for the first few week of life. Babies get cold easily immediately after birth when they are exposed to colder temperature than inside the womb because they cannot adjust their temperature like adults (WV, 2011).

If they get cold they cannot suckle the breast well, they gets sick easily and are more likely to die, the room where the baby will stay should be warm .

The baby should be dried as soon as he/she is born (comes out of birth canal), the wet cloth or towel should be removed and replaced with a dry cloth .

The baby should be kept in skin to skin contact with the mother (on mother's abdomen) covered with a dry sheet or blanket and he/she should wear a hat/cap and socks .

The baby should not be given a bath on the day of birth. If a bath is unavoidable, the baby should be bathed with warm water and dried and wrapped immediately, or put skin to skin with the mother and covered .

Newborns can get an infection more easily than an adult or an older child. Infection in a newborn can be dangerous.

Frequent and correct hand washing is one of the most effective ways to prevent infections. Hands should be washed after using the toilet/latrine, before cooking, before eating, before and after handling newborn

.

The cord should be cleaned and dried nothing should be applied to the cord, the baby should be cleaned every time he/she passes stools or urine (WV, 2011).

In the TTC approach, home care practices were considered as a very important issue of consideration, community health workers started talking to the mothers about new born care practices during their late pregnancy and they continue shortly after the delivery , They have focused on the malpractices that can subject their newborns to a serious illness such as khol application, harmful massage, adding salt to the cord and bathing the newborns within the 24 hours of birth.

They also taught mothers how to keep the baby warm, how to care for the cord and the importance of skin to skin contact.

3.3.4 Child growth

A young child should grow well and gain weight rapidly. From birth to age two, children should be weighed every month. If a child has not gained weight for about two months, something is wrong (WV, 2011).

In the TTC approach community health workers were responsible for checking babies' growth on monthly basis, for this purpose they were provided with growth chart, scales and meters.

Mothers of the targeted babies were provided with growth charts. The child's weight was marked with a dot on the growth chart each time he or she is weighed, and the dots were connected after each weighing. The produced line showed how well the child is growing.

Community health workers were responsible for teaching the mothers how to read these charts, and how to act in case of improper weight gain, such as giving the baby larger or more frequent servings or more nutritious food,. Parents and health workers were both taught on how to read the charts, they were both aware that if the line goes up, this means that the child is doing well, and if the line stays flat or goes down this indicate cause for concern that they should look after. (WV, 2011).

Chapter 4

Study methodology

4.1 Introduction

For this intervention study, research methodologies were applied. In this chapter the research's methodology will be presented. The study setting, study population, study design, study tools, and the sampling method are described.

In September 2007 World Vision , Bethlehem branch conducted an assessment to gain a greater understanding of the context of the Bethlehem Governorate rural areas including its western, eastern, and southern clusters. The survey aimed to determine areas of interventions for World Vision. Secondary data was collected from interviews conducted with key informants, including representatives of village councils/joint-village councils, and related ministries, including Ministry of Education (MoE), Ministry of Health (MOH), Ministry of Agriculture (MoA) ,data was also collected from Palestinian Central Bureau of Statistics (PCBS), Applied Research Institute Jerusalem (ARIJ), Health Inform, Palestinian joint-village councils, and the Ministry of Local Governance. Results of the survey and according to certain indicators scale showed that the southern cluster was identified as the neediest area. The recommendation excluded the village of Beit Fajar (one of the southern cluster villages) since its ranking was good on the indicators scale.

The southern cluster of villages in Bethlehem area consists of nine villages, all of which were targeted by World Vision in the 2007. They are Al Ma'sara, Al Manshiya, Jurat ash Sham'a, Khallet al Haddad, Marah Ma'alla, Marah Rabah, Umm Salamona, Wadi Annis, and Wadi Rahhal. The total population of these villages is 7800 individuals.

4.2 Study methods

In this section all study setting, design, sampling, sample size and selection will be presented.

4.2.1 Study settings' description

Bethlehem governorate is located in the central part of West Bank, approximately 10 kilometers (6 mi) south of Jerusalem, with a population of about 30,000 people (PCBS, 2007).

The study villages are described in the following section:

Nahhalin Village:

Nahhalin is a Palestinian village in Bethlehem governorate that is located at 8 kilometer (horizontal distance) south-west Bethlehem City (ARIJ, 2010). The total population of Nahhalin village in 2007 was 6,827 individuals of whom 3,542 are males and 3,285 are females. There are 1,204 families living within 1,352 housing units (PCBS, 2007). The population of this villages is considerably young since 44.3 percent are less than 15 years, 53 percent are between 15 - 64 years, and 2.5 percent are 65 years and older. Mainly, two big families compose most of the inhabitants of Nahhalin, i.e. Shakarna and Al Najajra families (ARIJ, 2010).

The illiteracy rate among Nahhalin population in 2007 was about 4.9 percent, of whom 62.2 percent are females. Of the literate population, 13.4 percent can read and write, 23.6 percent had elementary education, 32.1 percent had preparatory education, 17.9 percent had secondary education, and 13 percent completed higher education (ARIJ, 2010).

Nahhalin has some health facilities; one health center run by the government, three private physician's office, five private dental clinics in the village, and two pharmacies. The village has no ambulance, and in emergency situations, residents of Nahhalin use Bethlehem hospitals and health centers, such as: Al Hussein Hospital, which is about 12 km from the village, Rehabilitation Arab Society in Beit Jala, which is about 10 km from the village, and Al Yamamah Hospital in El Khader town, which is about 9 km from the village (ARIJ, 2010).

Despite the existence of a health center in Nahhalin, the health sector faces several obstacles. There is no ambulance in the village; there is no sufficient supply of important medications in the health center and there is a lack of specialized doctors and medical equipment in the health center (ARIJ, 2010). However, and according to MoH data in the year 2005, general fertility rate was 178.75 live births /1000 women, and infant mortality rate in the same year was 13.7 per 1000 live births.

Wadi Rahhal Village

Wadi Rahhal is a Palestinian village in Bethlehem governorate that is located 5.7 km (horizontal distance) south of Bethlehem City. Wadi Rahhal is bordered by Jannatah town to the east, Al Khadr town to the north, Wadi an Nis village to the west, and Jurat ash Sham'a village to the south (ARIJ, 2010).

According to the Palestinian Central Bureau of Statistics (PCBS), the total population of Wadi Rahhal in 2007 was 1,419; of whom 764 are males and 655 are females. There are 278 households living in 301 housing units (ARIJ, 2010). The General Census of Population and Housing carried out by PCBS in 2007 showed the distribution of age groups in Wadi Rahhal is as follows: 43.5 percent are less than 15 years, 52.6 percent are between 15 - 64 years, and 2.4 percent are 65 years and older (ARIJ, 2010). Data also showed that the sex ratio of males to females in the village is 116.6:100, meaning that males constitute 53.8 percent of the population, and females constitute 46.2 percent of the population (ARIJ, 2010).

There are no health facilities available in Wadi Rahhal village; as there are no health centers or an ambulance in the village. In emergency cases, the residents use Bethlehem hospitals and health centers, such as Beit Jala Governmental Hospital (Al Hussein), which is about 13 km from the village and the Caritas Hospital. The health sector faces several obstacles, mainly the absence of a health center and the long distance between the village and health centers in the neighboring villages (ARIJ, 2010). However, and according to MoH data in the year 2005, the general fertility rate was 243.22 live births /1000 women, and the infant mortality rate in the same year was 7.89 per 1000 live births.

Marah Rabah village

According to the Palestinian Central Bureau of Statistics (PCBS), the total population of Marah Rabah in 2007 was 1,320; of whom 690 are males and 630 are females. There are 169 households living in 177 housing units (ARIJ, 2010). The General Census of Population and Housing carried out by PCBS in 2007 showed the distribution of age groups in Marah Rabah is as follows: 50.2 percent are less than 15 years, 46.6 percent are between 15 - 64 years, and 1.7 percent are 65 years and older (ARIJ, 2010). Data also showed that the sex ratio of males to females in the village is 109.4:100, meaning that

males constitute 52.2 percent of the population, and females constitute 47.8 percent of the population (ARIJ, 2010).

The inhabitants of Marah Rabah village are composed of several families, mainly: Ash Sheikh, Al Fakeeh, An Nawawra, Ath Thawabta, and Abu Shakra (ARIJ, 2010).

According to the results of the PCBS Population, Housing and Establishment Census-2007, the illiteracy rate among Marah Rabah population is about 4.4 percent, of whom 55.6 percent are females. Of the literate population, 16.3 percent can read and write, 39.9 percent had elementary education, 27.2 percent had preparatory education, 12.7 percent had secondary education, and 3.9 percent completed higher education (ARIJ, 2010).

In Marah Rabah there are no health facilities available of any kind, and there is no ambulance. In emergency cases, residents of Marah Rabah use Bethlehem hospitals and health centers, in particular, Bethlehem Health center, which is about 15km from the village. The health sector in Marah Rabah village faces several obstacles, mainly due to the absence of a health center or clinic and the long distance between the village and the health centers in neighboring villages (ARIJ, 2010). However, and according to MoH data in the year 2005, general fertility rate was 211 live birth per 1000 woman and the infant mortality rate was 21.74 per 1000 live births.

Wadi Al Nis Village

Wadi an Nis is a Palestinian village in Bethlehem Governorate located at 7km (horizontal distance) south-west of Bethlehem City. Wadi an Nis is bordered by Jurat Ash Sham'a village to the east, Wadi Rahhal village to the north, Efrat settlement to the west, and Umm Salamuna village to the south (ARIJ, 2010).

According to the Palestinian Central Bureau of Statistics (PCBS), the total population of Wadi an Nis in 2007 was 772; 394 of whom are males and 378 of whom are females. There are 119 households living within 132 housing units (ARIJ, 2010).

The General Census of Population and Housing carried out by PCBS in 2007 showed that the distribution of age groups in Wadi an Nis was as follows: 42 percent are less than 15 years, 53 percent are between 15 - 64 years, and 5 percent are 65 years and older. Data also showed that the sex ratio of males to females in the village is 104:100, meaning that males

constitute 51 percent of the population, and females constitute 49 percent (ARIJ, 2010). The inhabitants of Wadi an Nis are predominantly composed from one main family: Abu Hammad (ARIJ, 2010).

According to the results of the PCBS Population, Housing and Establishment Census-2007, the illiteracy rate among Wadi an Nis population is about 23 percent, of whom 57.2 percent are females. Of the literate population, 26.4 percent can read and write, 42 percent had elementary education, 29.7 percent had preparatory education, 8.9 percent had secondary education, and 1.3 percent completed higher education. Wadi an Nis lacks health facilities such as governmental or private health centers and ambulances. In emergency cases, residents of Wadi an Nis use Tuqu' and Bethlehem health centers, such as: Tuqu' society, which is about 5km from the village, Al Yamamah hospital in Al Khader city, about 7km from the village, and Al Hussein hospital in Beit Jala, about 9km from the village (ARIJ, 2010).

The most major problems that face the health sector in Wadi an Nis village are summarized in the absence of health centers; the long distances between the village and health centers in the neighboring villages; the absence of an ambulance in the village for emergency cases; and the lack of training of first aid competent cadres in the village for emergencies. However, and according to MoH data in year 2005, the general fertility rate was 119.63 live birth per 1000 women and there was no reported cases of infant mortality during the same year.

4.2.2 Study design

This is an intervention study (experimental research, where we have intervention group and comparison group) this study focuses on the direct outreach of community health workers to the households of the identified mothers that were selected as part of the intervention group.

4.2.3 Study sample size

All newborns in the four targeted villages during the months of March, April 2011 were identified. The total numbers of newborns during the mentioned months were 118. A list of mothers' names, children's names and addresses was prepared. The total sample size

was 118 newborns, 66 mothers were randomly identified as intervention group, and 52 were identified as comparison group.

4.2.4 Study sample selection

All the study activities took place at the selected mothers' households in the 4 targeted villages from Bethlehem governorate; i.e. Nahalin, Wadi Rahhal , Marah Rabah and Wadi Al Ness. Those villages were selected based on the presence of pregnant mothers in their third trimester at the beginning of the study.

The 118 newborns were randomly divided into intervention group and comparison group. As mentioned earlier mothers were easily identified by the community health workers as they are members of the same community, a list that includes last month pregnant women from all the 4 villages was identified.

Eight community health workers were involved in the process they identified the mothers, prepared a list of their names, addresses and their phone numbers. The list was then reviewed to check the compliance with the selection criteria. Sixty six mothers were identified as intervention group, and 52 were identified as comparison group.

4.2.5 Study population inclusion and exclusion

The inclusion-exclusion criterion was done as follows:

- Last month pregnant mothers (new born at the beginning of the study).
- Mothers living in one of the 4 targeted villages at the time of the study and are not planning to move their residency.
- Mothers having healthy newborns without any congenital malformations.
- In cases where the mother has a twin or more, one was randomly selected.
- The mother is not working and she is the one who look after the baby.
- Not first mother.

Sixteen mothers and their infants were excluded from the study. The reason behind that was that they were mothers for the first time, and filling the baseline data depends on mothers' knowledge and behaviors on infant feeding and care practices for their previous child.

4.3 Study implementation

In this section study stages, implementation and tools are presented.

4.3.1 Study stages

This study included four main stages; under each stage several activities took place.

4.3.1.1 The first stage: The preparatory stage and selection of field workers

In the first stage (the preparatory stage) all preparations' as part of this study were done. Community health workers were recruited. The recruitment process started by conducting an orientation meeting for steering committees and village council members, the orientation meeting was organized by some of World Vision staff in Bethlehem office branch. World Vision staff has built good relations within these communities through implementing many different and needed projects covering more than 9 villages in Bethlehem district. This was very helpful as trust bridges were already established within these communities. In the orientation meeting project goal that study aims and activities were illustrated. The members were very excited and supportive and they have mentioned that it's really an important issue of concern, after that they were asked to nominate active members in their villages who have the will to commit to be trained and work as a community health worker, a week after the meeting they have shared with us a list of 17 suggested names .

Number of workers per village was determined based on villages population size , one worker for small villages such as Wadi Al Nis, two for medium population size such as Marah Rabah and three for big villages such as Nahalin

Most of the suggested names were volunteers who have and still working with World Vision in one of its major programs (sponsorship program). This program requires conducting occasional household visits for the purpose of collecting data.

A second step as part of this stage was conducting an orientation meeting for the nominated workers, as a result of this meeting all the 17 nominated workers showed their interest and commitment to be part of this, they were informed that in order to build their capacities they will be receiving an intensive training and the selection process will include only those who pass the evaluation tests that will be conducted after each training.

This stage also included preparing the job aids that were consisted of: field manual, monitoring forms, the check lists and the growth chart forms.

A very crucial step in this phase was the training part. Eighty training hours were conducted. The trainings were divided as follows:

- 32 hours on capacity building activities on new born care practices, feeding practices and growth monitoring, most of the training topics were covered by a community medicine doctor, the feeding practices topics were covered by this study researcher.
- 8 hours follow up training with a focus on growth monitoring.
- 32 training hours on data collection (baseline and end line data).
- Another 8 hours was done for the use of the job aids.

Two types of tests were applied to evaluate the nominated workers qualifications. The first test was written tests that were conducted after the capacity building trainings, 14 out of 17 passed the test successfully with a rate of 90 or above, 3 passed with a rate between 70-80 they were given another chance by going through the manual a second time. Few days later they were asked to go through the exam again. The result of the second exam were within the accepted range (85 and above).

The second exam that they went through was the practical exam through playing a real role of community health workers during the home visits. A committee of 3 evaluators from World Vision, Bethlehem branch was formed. Results in general were good, some of the nominated workers were given some recommendations for improvements, a latter training (12 hours) on communication skills was conducted by the World Vision project instructor from Bethlehem university.

After the capacity building activities, all the nominated workers were asked to identify pregnant mothers in their third trimester, they were given a week to finish this task.

A week after, all the workers came with the lists, mothers in their third trimester were identified in the 4 villages. 8 workers were selected to be part of this study. All the identified mothers were divided randomly into intervention group and control group.

Community worker's home visits schedule was determined. A contract was prepared and signed by the selected workers .A consent form was prepared and signed by the selected mothers.

The following table shows the health workers educational backgrounds, age, the selected community health workers, villages, and their assigned households.

Table 4.1: Distribution of the health workers educational background, age, the selected community health workers villages, and their assigned households.

Health workers	Age	Village	Educational background	Number of assigned households
CHW1	28 years	Wadi Rahal	BA in social work	Intervention:9 Comparison:2
CHW2	22 years	Wadi Rahal	BA in applied chemistry	Intervention:10 Comparison:4
CHW3	22 years	Marah Rabah	BA in Mathmatics	Intervention:9 Comparison:0
CHW4	31 years	Nahalin	Tawjihi	Intervention:7 Comparison: 9
CHW5	40 years	Nahalin	Diploma - Nursing	Intervention:7 Comparison:18
CHW6	28 years	Nahalin	Bachelor in basic education	Intervention:7 Comparison:7
CHW7	22	Wadi Al Nis	Bachelor in social work	Intervention:8 Comparison:7
CHW8	23	Marah Rabah	Bachelor in basic education	Intervention:10 Comparison:5

4.3.1.2 The second stage: The assessment stage

The assessment phase included selected mothers of newborns for both the intervention group and the comparison group, a questionnaire was prepared according to the study objectives, it was validated by expertise and it was piloted before using it, 20 questionnaires were tested by the workers, the filled questionnaires were reviewed by me separately with each worker to assure full understanding.

Data collection took two weeks. Data then was cleaned, entered and analyzed using the statistical software package SPSS version 17.

4.3.1.3 The third stage: The implementation stage

The third phase is the implementation stage. In this stage household visits were conducted. Messages were delivered to the selected mothers by the community health workers on timely basis. Within these visits the following topics were covered: newborn care; feeding practices and infants danger signs. Each community health worker was assigned a number of households according to the above table. She was required to visit the target household a minimum two times per month after the age of one month and a maximum of four times during the first month of age .

They were also responsible for monitoring infant's growth.

Intervention methodology:

While delivering the messages it was so important that the CHW's convince mothers and to build with them a trust relationship. They clearly explained to the mothers the importance of following the messages and the negative effects that could affect the babies in case they didn't follow the proper instructions.

To assure quality implementation, I took the responsibility for the follow up and the monitoring activities. One follow up meeting every two weeks were conducted, the total numbers of the conducted meetings were around 16 meetings .During the follow up meetings community health workers were requested to submit the monitoring forms and the check lists that they fill during the household visits, they were also requested to submit their monthly plan which represents the next month date of visits and the topics that they will cover.

To ensure work quality in the field, plans and forms were reviewed to assure work quality. Another monitoring activity was the field monitoring by the World Vision team. A team of 5 people including the study researcher that attended all the trainings that were conducted for the community health workers were responsible for the field monitoring through accompanying the community health workers while conducting the household visits.

Reports after each monitoring visit were submitted to me for revision, at least 16 field monitoring visits took place.

The number of the visits conducted to each mother were around 20 visits .

Educating the mothers and the training modules and messages:

- 1- Breastfeeding: Visits on breastfeeding were scheduled late during pregnancy and within 2 days of childbirth. During these visits community health workers advised the mothers to breastfeed their infants immediately or as soon as possible within 30 minutes after delivery. They explained the importance of the first milk (colostrum or yellow milk) and early suckling. In addition community health workers explained to the mothers what does EBF term mean and its importance for the babies. Part from this was also on discouraging the mothers on the use of a feeding bottle, and how it interferes with the newborn's suckling on the breast.

The visit was not only about messages delivered by the community health workers, but also its about their role in supporting the mothers to change their behaviors, right after the delivery CHW's visited the mothers to assist them to breastfeed, this was a very crucial step, as it was found that a lot of mothers are not aware on how to probably breastfeed, which in return affect their ability to breastfeed.

- 2- Complementary feeding: Counseling visits on complementary feeding were conducted by the community health workers, when the baby was five months old. Community health workers started this counseling visit by informing the mothers that they should start feeding the baby when he/she is 6 months of age and that they should steadily increase the amount of food, so that the baby would get half a cup of food three times each day, they also advised the mothers that they should continue to breastfeed the baby day and night and that they should continue breastfeeding and introducing foods even when the baby is ill.

Another focus regarding complementary feeding messages was on appropriate complementary foods components' and their preparation , foods rich in iron and its importance , the hygienic instructions during meal preparation and how to deal with the children in case of food refusal.

When the targeted children were eight months old, community health workers advised mothers to increase the food that they give to their babies when they reach nine months of age; they also informed them that they can give their babies one cup of food four times a day and that the prepared foods should be rich in iron and Vit A, in addition messages on proper hygiene and the importance of feeding the baby from separate plate is part of the 9 months messages.

- 3- Child illness and danger signs: Another important role of the community health workers through the conducted visits was to improve mothers' ability to recognize potentially life-threatening symptoms of major childhood illnesses, educating them about the importance of danger signs and immediate care-seeking practices. They were also requested to educate mothers on the importance of increasing fluids and food intake especially during diarrhea, they also taught mothers on how to prepare ORS in case of diarrhea when the ORS packages are not available. These messages were delivered to mothers after the babies' birth. Mothers were reminded of these messages on monthly basis, community health workers were also responsible for checking on any danger sign each time they visit the mothers. They also taught mothers the feeding recommendations and the importance of continuing breastfeeding their children during and after illness recovery.
- 4- Newborn baby care: Home care practices messages were started during late pregnancy and they continue shortly after the delivery. CHW's focused on the malpractices that can subject their newborns to a serious illness such as khol application, harmful massage, adding salt to the cord and bathing the newborns within the 24 hours of birth. They taught mothers how to keep the baby warm, how to care for the cord and the importance of skin to skin contact. They were also responsible for checking babies' growth on monthly basis, for this purpose they were provided with growth chart, scales and meters, they taught the mothers how to read these charts, and how to act in case of improper weight gain, such as giving the baby larger or more frequent servings or more nutritious food.

4.3.1.4 The fourth stage: The evaluation stage

The fourth and last stage is the evaluation stage after the implementation data was collected again from both the comparison group and the intervention group. Data then was cleaned, entered and analyzed using the statistical software package SPSS version 17 after that comparison was made within and between the 2 groups before and after the intervention.

4.4 Study tools

For each stage different tools were used:

- In the preparatory stage pre and post tests, in addition to practical tests were used to assess community health workers capacity, a committee evaluated the community health workers and they were selected accordingly.
- In the assessment phase a questionnaire with multi –item was used to collect baseline data from mothers.

1- The study questionnaire:

Most of the questions were adopted from similar studies questionnaires that were previously prepared and validated, mainly they were adopted from two questionnaires the first one was a questionnaire that was previously used by a master student at the school of Public Health for the assessment of breastfeeding and complementary feeding practices among children less than 24 months of age in Al-Am'ari refugee camp (Qlebo, 2007). The second questionnaire was prepared by World Vision international “Canada support office” to assess children’s feeding practices (WV, 2010).

Based on the study objectives questions were extracted from the mentioned questionnaires. The study questionnaire was reviewed by the study supervisor and then was sent for validation by 3 specialists in this field; an epidemiologist, a pediatrician and a community medicine doctor. No major changes were made based on the reviewers comments, except in some of the wordings to make it easier for the community health workers to understand and explain to the mothers. Questionnaire was adjusted afterwards based on the given comments.

It consisted of the following parts (see attached copy in appendix 2):

- Question 1-24: Socio demographic information about the mother, parents educational level, occupation and characteristics of the indexed child such as date of birth, gender, height, weight and head circumference at birth.
- Question 25-27: Information regarding new born care practices such as salting, wrapping, cord care, applying Khol and harmful massage.
- Question 28: Information regarding mother's knowledge on infant's danger signs.
- Question 29-51: Information about infants feeding practices such as: importance of breastfeeding, exclusive breastfeeding, complementary feeding and initiation of breastfeeding within the first hour.
- Question 52-55: Information regarding mother action towards a child suffering from diarrhea and respiratory infection.
- Question 56-58: Information regarding health services such as availability and quality of services.

Questionnaires and study piloting

Questionnaire pilot was conducted by the community health workers. Twenty mothers were interviewed and filled the questionnaire. As a result of the pre test it was found that it wasn't clear to community health workers which questions are about the previous child and which ones are about the current ones, based on their feedbacks this note was added clearly to the questionnaire.

2- Monitoring forms and checklist

As mentioned earlier and part of the evaluation phase, monitoring forms, check lists and monthly plans forms were also prepared and used for this study (see a copy in appendix 3).

4.5 Field work and data collection

The actual field work took place between February year 2011 till October year 2011(9 months period).

Each community health worker was assigned a number of households. A monthly plan includes the mothers' name, date and visit topic was submitted by each community health worker. Plans were reviewed to assure adhering to the TTC methods (the right message in the right time).

The first visit for both intervention and comparison house included filling the questionnaire. Mothers who met the inclusion criteria were identified as intervention group, they were visited twice a month by the community health workers. Monitoring forms were filled after each visit; random monitoring visits took place. The last visit included filling the questionnaire again by both cases and controls.

4.6 Methods of data analysis

Data was entered; cleaned and analyzed using the statistical software package SPSS version 17.

Data analysis is divided into 2 sections; the first section includes the descriptive characteristics for both the cases and controls. The second section includes the univariate and the multivariate analysis.

Regarding the first section (descriptive characteristics section) and in order to check for differences between both groups, variables for both groups was; age, infants gender, father's level of education, mother's level of education, mother's work, mother's profession, father's working, father's profession and the number of live births will be analyzed.

In the second section and based on the study objectives, the univariate section will be presented in 5 subsections, the first subsection is on breastfeeding practices; initiation of breastfeeding, exclusive breastfeeding, duration of breastfeeding and the use of bottle feeding, the second subsection is on complementary feeding practices; timely introduction of meals and minimum meal diversity, the third subsections is on newborn care practices; bathing newborns within 24 hr. after birth, wrapping the newborn, salting the new born, apply Khol and harmful massage, using baby oil

, baby cream and baby powder, the forth subsection is on mothers' recognition of danger signs and the last subsection is on diarrhea management ;food intake during diarrhea ,fluids during diarrhea and breastfeeding during diarrhea .For both groups variables within each subsection before and after the intervention will be analyzed.

After presenting the univariate analysis, all variables that were significant were used to develop the study multi variate models. Five conditional logistic regression models were developed and the adjusted odds ratio and its 95% confidence level are presented.

The first model represents breastfeeding practices, variables that were included in this model were variables with the significant values ($P < 0.01$) from the univariate analysis (exclusive breastfeeding, bottle feeding and duration of breastfeeding), in addition to mother's age and mother's educational level.

The second model which represents complementary feeding practices, it also included significant values from the univariate analysis (introduction of foods at 6 months), in addition in addition to mother's age and mother's educational level.

The third model is the newborn care practices model, it included univariate analysis significant values (bathing newborns within 24 hr. after birth ,wrapping the newborn ,salting the new born apply Khol ,harmful massage, using baby oil ,using baby cream, and using baby powder) in addition to mother's age and mother's educational level .

The forth model represents mothers' recognition of danger signs, it included mothers recognition of 3 danger signs variable which was significant in the univariate analysis, in addition to mother's age and mother's educational level .

The fifth model (diarrhea management), included the following significant variables from the univariate analysis (increase breastfeeding during diarrhea, increase fluid intake during diarrhea and increase food intake during diarrhea) in addition to mother's age and mother's educational level .

4.7 Ethical consideration

- The study was approved by public health committee in the Al Quds University.
- A written consent form was signed by the targeted mothers in the first visit done to their houses wither for intervention or the comparison group.
- Approval from World Vision and village councils were obtained to conduct the study.

Chapter 5

Results

5.1 Introduction:

In this chapter, data will be presented in 2 sections. In the first section we are describing the characteristics of the study population. In the second section, the univariate and the multivariate analysis for the 5 modules are presented.

5.2 Characteristics of the study population

As illustrated in figure 5.1, 50% of the indexed children in both the intervention group and the comparison group were females. Almost all children in both groups were born in hospitals except for one child in the intervention group who was born in the house. The mean weight at birth in both groups was 3.2 kilograms (± 0.53 standard deviation).

Most mothers in the intervention group (74.2%) had normal delivery; almost the same between comparison groups 73.1% had normal delivery (figure 5.6).

The mean age for mothers in both groups was 27 years ($5.35 \pm$ standard deviation). Between mothers in the intervention group 42.3% had a high school (Tawjihi) degree, where as between the comparison group the percentage is around 39.4%, the higher education is higher between the comparison group as indicated in figure 5.3.

As shown in figure 5.4 and figure 5.5 most of the fathers in both groups have work, but almost all mothers in both groups are housewives.

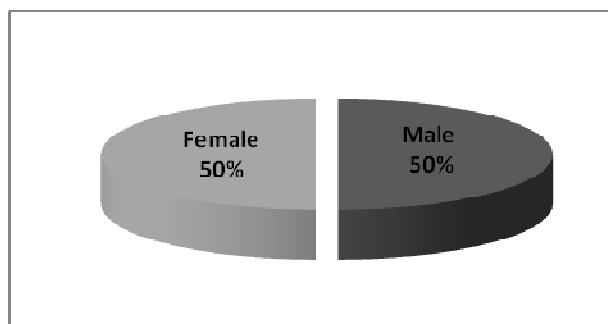


Figure 5. 1: Distribution of infants by gender in the intervention group

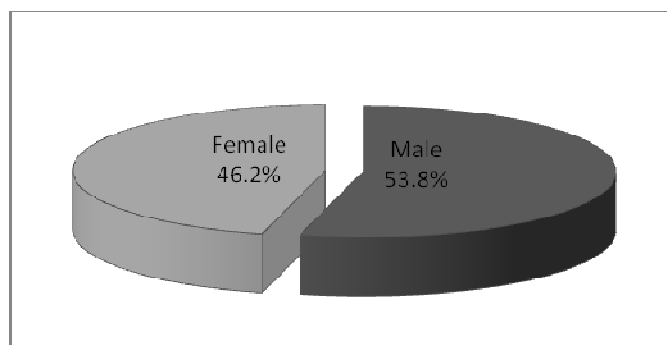


Figure 5.2: Distribution of infants by gender in the comparison group

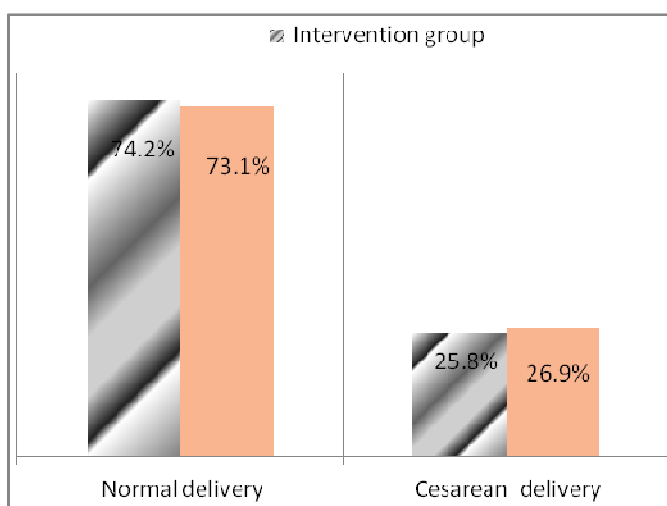


Figure 5.3 : Mode of delivery between both groups

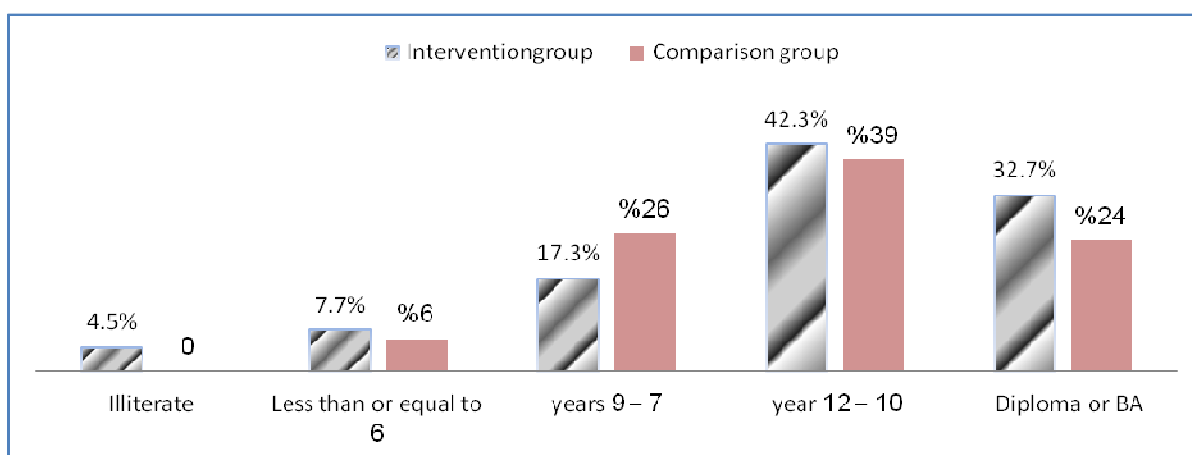


Figure 5.4 Distribution of mothers' level of education in both groups

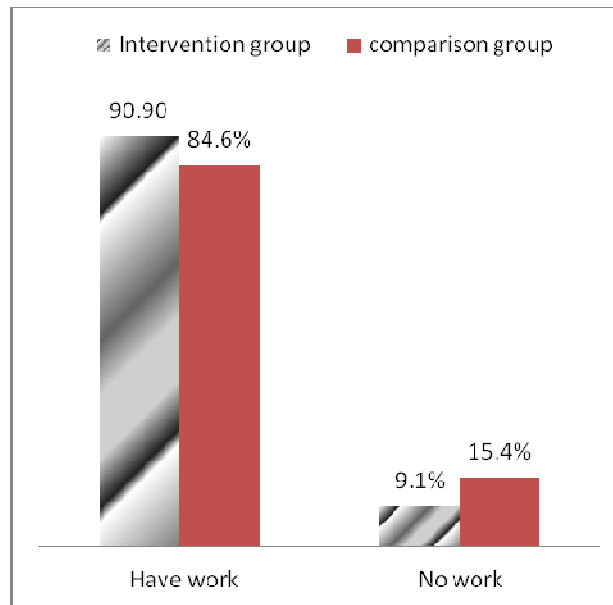


Figure 5.5 Distribution of fathers by working status in both groups

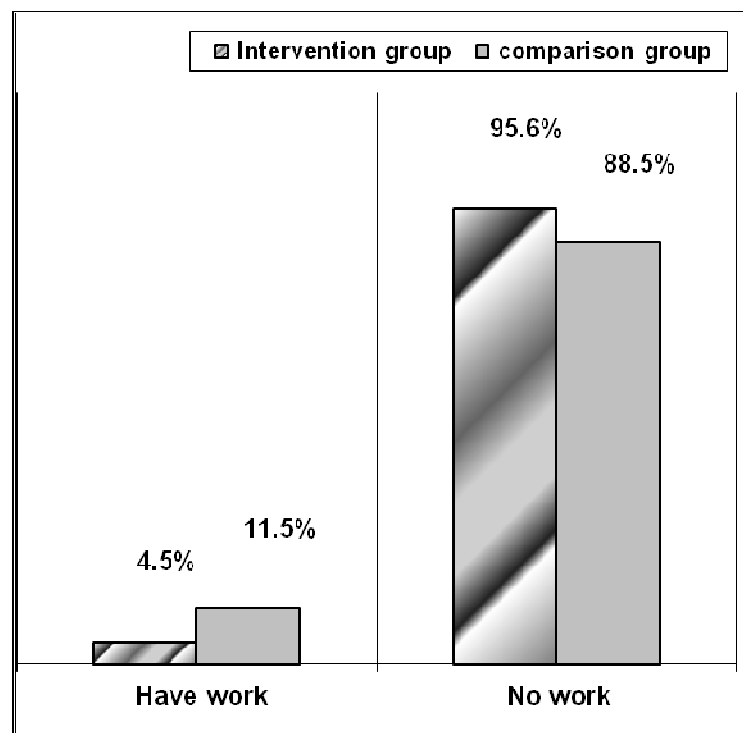


Figure 5.6 : Distribution of mothers' working status in both groups

As shown in table 5.1 there are no significant differences in the socio demographic characteristics between the intervention compared to the comparison group.

Table 5.1 : Socio demographic characteristics :differences between intervention versus comparison group

		comparison group N=52 %(n)	Interventio n group N =66 %(n)	P value
Mother's age	Less or equal 20	7.7% (4)	10.6 (7)	.677
	21-30	61.5% (32)	65.2% (43)	
	above 30	30.8% (16)	24.2% (16)	
Infants gender	Male	53.8% (28)	50.0% (33)	.678
	Female	46.2% (24)	50.0% (33)	
Father's level of education	Illiterate	9.6% (5)	7.6% (5)	.966
	Less than or equal to 6 years	7.7% (4)	10.6% (7)	
	7 - 9 years	25.0%(13)	27.3% (18)	
	10 - 12 years	38.5% (20)	34.8% (23)	
	Diploma , BA or Master	19.2% (10)	19.7% (13)	
Mother's level of education	Illiterate	--	4.5% (3)	.377
	Less than or equal to 6 yrs.	7.7% (4)	6.1% (4)	
	7 - 9 years	17.3% (9)	25.8% (17)	
	10 - 12 years	42.3% (22)	39.4% (26)	
	Diploma or BA or Master	32.7% (17)	24.2% (16)	
Mother's working	Yes	11.5% (6)	4.5% (3)	.155
Mother's profession	Teacher	83.3% (5)	100.0% (3)	.453
	Secretary	16.7% (1)	.0% (0)	
Father's working	Yes	84.6% (44)	90.9% (60)	.294
Father's profession	Worker	79.1% (34)	74.6% (44)	.412
	Private	.0% (0)	5.1% (3)	
	Employee	14.0% (6)	10.2% (6)	
	Teacher	2.3% (1)	6.8% (4)	
	Nurse	.0% (0)	1.7% (1)	
	Engineer	4.7% (2)	1.7% (1)	
Number of live births	1OR 2 babies	39.6% (19)	47.0% (31)	.668
	between 3-5	43.8% (21)	40.9% (27)	
	above 5	16.7% (8)	12.1% (8)	

5.3 Univariate and multivariate analysis between the intervention and the comparison groups

In this section the univariate and the multivariate (main study modules) analysis are presented in 5 subsections and in the last subsection the amount of change in the intervention group (delta change) are shown.

5.3.1 Breastfeeding practices between both groups –Univariate results analysis

Table 5.2 shows the breastfeeding pattern differences between the two groups; i.e. exclusive breastfeeding; initiation of breastfeeding within the first hour after birth; duration of breastfeeding and the use of bottle feeding. We can notice that exclusive breastfeeding was significantly higher ($P < 0.01$) in the intervention group than the comparison group before intervention. No major change in regards to the initiation of breastfeeding within the first hour after birth was seen between both groups.

During the study period, there was also a significant change in bottle feeding patterns, Percentage of mothers in the intervention group who didn't give any bottle feeding increased from 21.2% to 69.7%, whereas in the comparison group the percentage of those who gave bottle feeding remained relatively high (46.2%). Milk supplements were introduced earlier by mothers in the comparison group compared to the intervention group.

Table 5.2 : Mothers breastfeeding practices in the intervention and the comparison groups

	Before intervention			After intervention		
	Comparison group N=52 %(n)	Intervention group N=66 %(n)	P value	Comparison group N=52 %(n)	Intervention group N=66 %(n)	P value
Initiation of breastfeeding						
Can't remember	15.4%(8)	22.7%(15)	.291	5.8% (3)	15.2%(10)	.072
Within the first hour	46.2% (24)	51.5% (34)		42.3% (22)	51.5%(34)	
Not within the first hour	38.5%(20)	25.8%(17)		51.9%(27)	33.3%(22)	
Exclusive breastfeeding						
Exclusive breastfeeding until 6 months	9.6%(5)	27.3%(18)	.016	5.8% (3)	69.7%(46)	.000
Bottle feeding						
No bottle feeding	21.2% (11)	21.2%(23)	.027	46.2%(24)	69.7%(46)	.010
Bottle feeding within the first year	71.2%(37)	71.2%(31)		53.8%(28)	30.3%(20)	
Bottle feeding after the first year	7.7%(4)	7.7%(12)		--	--	
Duration of breastfeeding						
No breastfeeding	3.8%(2)	7.6%(5)	.542	--	1.5%(1)	.000
BF till 1 year	44.2%(23)	36.4%(24)		53.8%(28)	15.2%(10)	
BF above 1 year	51.9%(27)	56.1(37)		46.2%(24)	83.3%(55)	

5.3.2 Breastfeeding practices model – Multivariate analysis results

Mothers' exclusive breastfeeding practice and duration of breastfeeding above one year were significantly improved in the intervention group after the intervention.

As illustrated in table 5.3 mothers in the intervention group were 30 times more likely to exclusively breastfeed their babies compared to mothers in the comparison group and 3 times likely to breastfeed their children for more than a year.

Table 5.3 : Logistic regression model for breastfeeding practices

	Sig.	AOR	95% C.I.for AOR	
			Lower	Upper
Exclusive breastfeeding	.000	29.543	8.016	108.877
Duration of breastfeeding above a year	.045	2.938	1.026	8.413

Variables in the model: mother's age, mother's educational level, exclusive breastfeeding, bottle feeding and duration of breastfeeding.

5.3.3 Complementary feeding practices between both groups–Univariate results analysis

Table 5.4 shows the complementary feeding pattern differences between the two groups; i.e. minimum meal diversity and timely introduction of meals .We can notice that timely introduction of the complementary meals was significantly improved ($P < 0.01$) in the intervention group than the comparison group after the intervention . Change in regards to offering the minimum meal diversity was also seen. After the intervention, percentage of mothers in the intervention group who offered the minimum meal diversity increased from 16.7% to 22.7%.

Table 5.4 : Mothers' complementary feeding practices between the intervention and the comparison groups before and after intervention

	Before intervention			After intervention		
	Comparison group N=52 %(n)	Intervention group N=66 %(n)	P value	Comparison group N=52 %(n)	Intervention group N=66 %(n)	P value
Introduction of food						
At 6 months	13.5%(7)	38.5%(25)	.000*	19.6%(10)	66.7%(44)	.000*
Before 6 months	73.1%(38)	24.6%(16)		74.5%(38)	3.0%(2)	
7 months or above	13.5%(7)	36.9%(24)		5.9%(3)	30.3%(20)	
Min Diversity of Food						
3 groups or less/day	84.6%(44)	83.3%(55)	.851	76.9%(40)	77.3%(51)	.964
4 groups or more/day	15.4%(8)	16.7%(11)		23.1%(12)	22.7%(15)	

5.3.4 Complementary feeding practices model- Multivariate analysis results

Regarding complementary feeding practices, introduction of food at 6 months was significantly improved in the intervention group compared to the comparison group. As illustrated in table 5.5 mothers in the intervention group were 83 times more likely to introduce foods to their infants at 6 months of age compared to mothers in the comparison group.

Table 5.5 : Logistic regression model for complementary feeding practices

	Sig.	AOR	95% C.I. for AOR	
			Lower	Upper
Introduction of food at 6 months	.000	83.600	17.237	405.473

Variables in the model: mother's age, mother's educational level and introduction of foods at 6 months.

5.3.5 Newborn care practices between both groups- Univariate results analysis

Significant changes among mothers in the intervention group were reported. Harmful massage practice decreased from 27.3% to 4.5% (P value <0.01); Khol application decreased from 10.4% to 0% (P value <0.01); alting the newborn decreased from 54.5% to 3% (P value <0.01); wrapping the newborn decreased from 77.3% to 10.6% (P value <0.01) ; bathing the newborns within 24 hours after birth decreased from 68.2% to 31.8% (P value <0.01); other practices such as using baby oil, powder, pacifier and cream were also improved as indicated in table 5.6. However, no significant changes between women in the comparison group.

Table 5.6 : Mothers' caring practices between the intervention and the comparison groups before and after intervention

	Before intervention			After intervention		
	Comparison group N=52 %(n)	Intervention group N=66 %(n)	P value	Comparison group N=52 %(n)	Intervention group N=66 %(n)	P value
Bathing newborns within 24 hr. after birth	78.8% (41)	68.2% (45)	.196	73.1% (38)	31.8% (21)	.000*
Wrapping the newborn	84.6% (44)	77.3% (51)	.317	76.9% (40)	10.6% (10)	.000*
Salting the newborn	84.6% (44)	54.5% (36)	.001*	75.0% (39)	3.0% (2)	.000*
Apply Khol	13.5% (7)	10.6% (7)	.634	23.1% (12)	0%	.000*
Harmful massage	53.8% (28)	27.3% (18)	.003*	53.8% (28)	4.5% (3)	.000*
Using baby oil	65.4% (34)	66.7% (44)	.884	65.4% (34)	19.7% (13)	.000*
Using baby cream	28.8% (15)	33.3% (22)	.602	44.2% (23)	9.1% (6)	.000*
Using baby powder	40.4% (21)	62.1% (41)	.782	50.0% (26)	90.9% (60)	.000*

5.3.6 Newborn care practices model- Multivariate analysis results

Mothers' practices regarding newborn care significantly improved in the intervention group compared to the comparison group.

As illustrated in table 5.7 mothers in the intervention group were 5 times less likely to wrap their newborns, 30 times less likely to salt their infants and 4.6 times less likely to use baby oil compared to mothers in the comparison group.

Table 5.7 : Logistic regression model for newborn practices

	Sig.	AOR	95% C.I.for AOR	
			Lower	Upper
Wrapping the newborn	.018	.196	.050	.758
Salting the new born	.000	.033	.006	.185
Using baby oil	.013	.214	.063	.724

Variables in the model: mother's age ,mother's educational level, bathing newborns within 24 hr. after birth ,wrapping the newborn ,salting the new born apply Khol ,harmful massage, using baby oil ,using baby cream,and using baby powder.

5.3.7 Danger signs between both groups- Univariate results analysis

Table 5.8. shows that the percentage of mothers recognizing infants danger signs improved significantly in the intervention group, before the intervention only 15.2% mentioned at least 3 danger signs that affect their children , but after the intervention the percentage increased to 48.5% (P value <0.01).

Table 5.8: Mothers' recognizing danger signs practices between the intervention and the comparison groups before and after intervention

	Before intervention			After intervention		
	Comparison group N=52 %(n)	Intervention group N=66 %(n)	P value	Comparison group N=52 %(n)	Intervention group N=66 %(n)	P value
Recognizing 3 signs or more	28.8%(15)	15.2%(10)	.071	19.2%(10)	48.5%(32)	.001*
Recognizing less than 2 signs	71.2%(37)	84.8%(56)		80.8%(42)	51.5%(34)	

5.3.8 Danger signs model- Multivariate analysis results

Changes regarding mothers' recognition of babies danger signs were significantly improved in the intervention group compared to the comparison group.

As illustrated in table 5.9 mothers in the intervention group were 4 times more likely to recognize danger signs compared to mothers in the comparison group.

Table 5.9 : Logistic regression model for Recognizing danger signs

	Sig.	AOR	95% C.I. for AOR	
			Lower	Upper
Recognizing danger signs	.001	3.953	1.703	9.173

Variables in the model: mother's age ,mother's educational level and recognizing danger signs

5.3.9 Diarrhea management between both groups -Univariate results analysis

The study showed that diarrhea management knowledge and practices improved significantly between mothers in the intervention group (P value <0.01), during diarrhea episodes 75.8% of mothers mentioned increasing breastfeeding, 75.8 % mentioned offering more fluids or ORS and in regards to feeding practices around 51.5% of the mothers offered more amounts of meals, a slight non significant increase was reported between the comparison group .

Table 5.10 Mothers' diarrhea management practices between the intervention and the comparison groups before and after intervention

	Before intervention			After intervention		
	Comparison group N=52 %(n)	Intervention group N=66 %(n)	P value	Comparison group N=52 %(n)	Intervention group N=66 %(n)	P value
Breastfeeding during diarrhea						
Less than usual	15.4%(8)	21.2%(14)	.161 ^a	9.6%(5)	1.5%(1)	.000
Same amount	50.0%(26)	34.8%(23)		48.1%(25)	21.2%(14)	
More than usual	21.2%(11)	36.4%(24)		30.8%(16)	75.8%(50)	
I don't know	9.6%(5)	3.0%(2)		9.6%(50)	.0%(0)	
I don't breastfeed	3.8%(2)	4.5%(3)		1.9%(1)	1.5%(1)	
Fluids during diarrhea						
Less than usual	15.4%(8)	12.1%(8)	.028 ^{a,*}	15.4%(8)	3.0%(2)	.000
Same amount	48.1%(25)	31.8%(21)		42.3%(22)	19.7%(13)	
More than usual	19.2%(10)	47.0%(31)		25.0%(13)	75.8%(50)	
Nothing	7.7%(4)	6.1%(4)		9.6%(5)	1.5%(1)	
I don't know	9.6%(5)	3.0%(2)		7.7%(4)	.0%(0)	
Food intake during diarrhea						
Less than usual	13.5%(7)	19.7%(13)	.007 ^a	7.7%(4)	3.0%(2)	.002
Same amount	59.6%(31)	39.4%(26)		51.9%(27)	43.9%(29)	
More than usual	11.5%(6)	27.3%(18)		23.1%(12)	51.5%(34)	
Nothing	1.9%(1)	10.6%(7)		7.7%(4)	1.5%(1)	
I don't know	13.5%(7)	3.0%(2)		9.6%(5)	.0%(0)	

5.3.10 Diarrhea management model- Multivariate results analysis

Changes regarding diarrhea management were significantly improved in the intervention group compared to the comparison group.

As illustrated in table 5.11 mothers in the intervention group were 6.5 times more likely to increase fluids during diarrhea compared to mothers in the comparison group.

Table 5.11 : Logistic regression model for diarrhea management

	Sig.	AOR	95% C.I. for AOR	
			Lower	Upper
Increased fluids during diarrhea	.000	6.509	2.600	16.297

Variables in the model: mother's age, mother's educational level, breastfeeding during diarrhea, fluid intake during diarrhea and food intake during diarrhea.

5.4 Amount of change between the intervention and the comparison groups

The univariate analysis shows significant improvements in practices between mothers in the intervention group, whereas between the comparison group no major changes were seen.

Figure 5.3.1 shows the percentage change between both groups in regards to: breastfeeding and complementary feeding practices; newborn care; recognizing danger signs and diarrhea management.

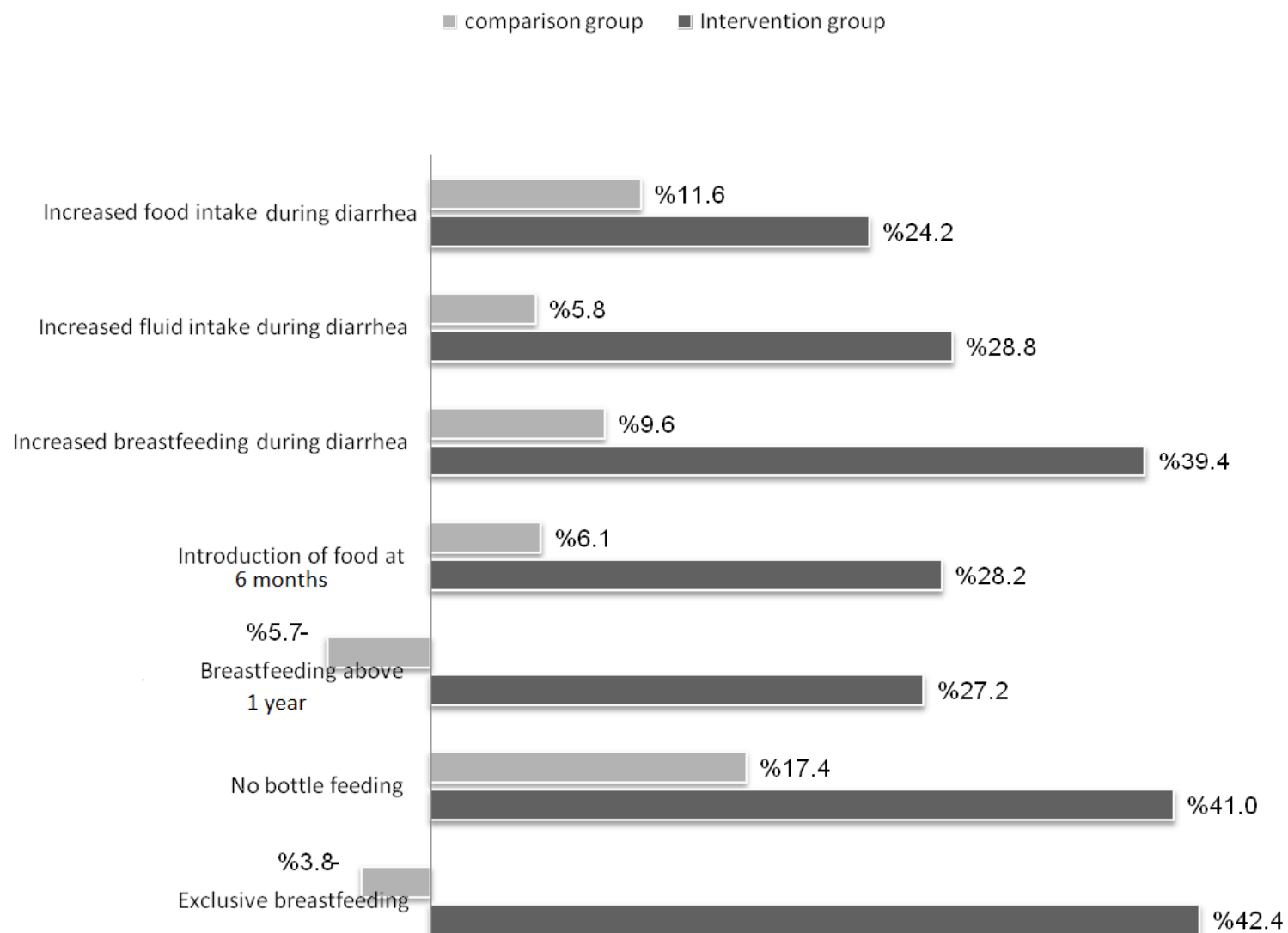
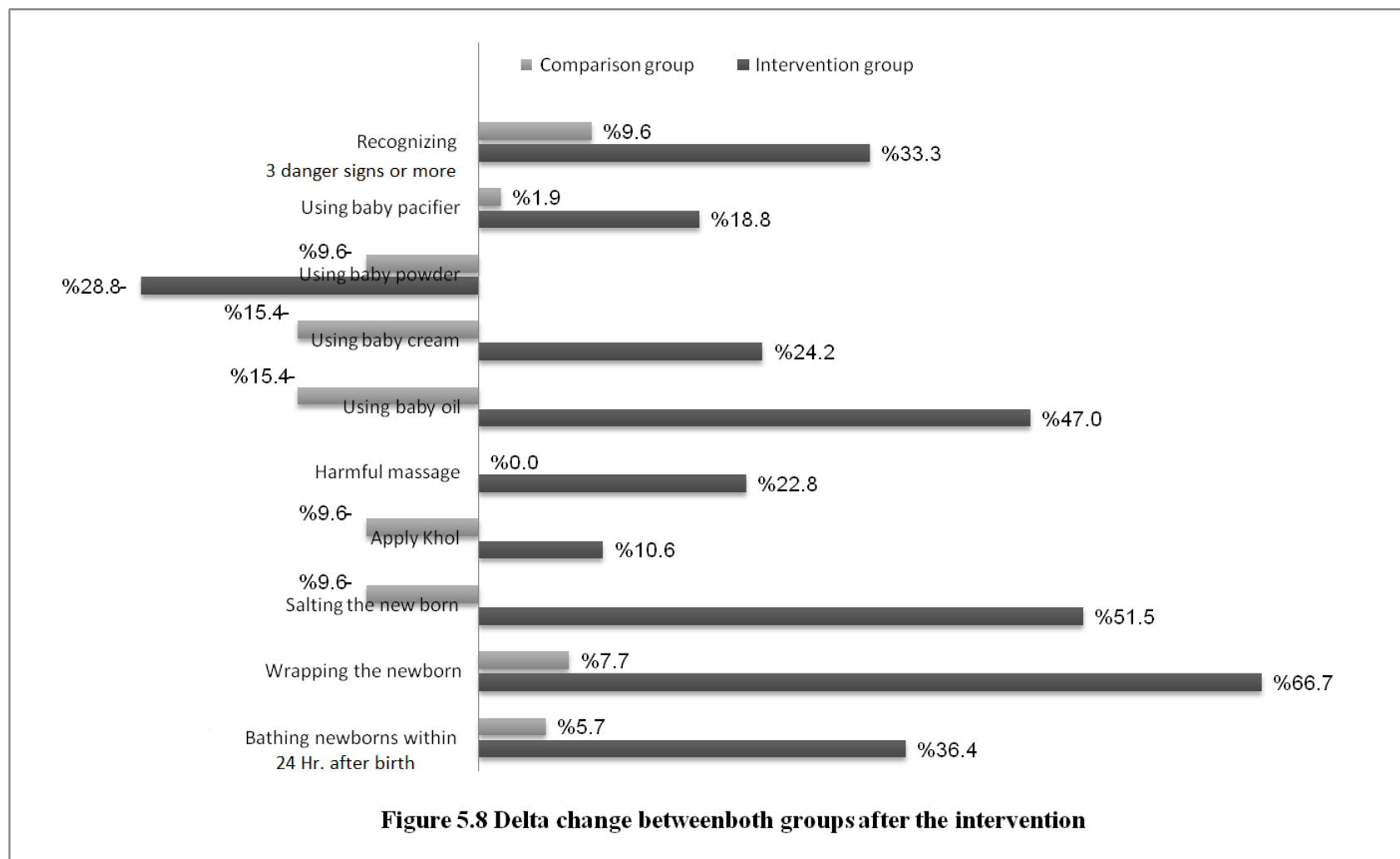


Figure 5.7 Delta change between both groups after the intervention



5.5 Summary

A total of 118 mothers were part of this study, 66 mothers were identified as members of the intervention group, and 52 were identified as members of the comparison group, no significant difference in the socio demographic characteristics between the both groups was identified.

Implementing Timed and Targeted Counseling for nine months, proved to be very effective. Significant progress was achieved. It was noticed that several mothers' nutritional and health practices have been changed. No major changes among the comparison group were identified.

In regards to breastfeeding practices mothers in the intervention group were 29.5 times more likely to exclusively breastfeed their babies, they were also 3 times more likely to extend breastfeeding above one year.

Complementary feeding practices were also improved among mothers in the intervention group , they were 83.6 times more likely to introduce food at six months ,they were also 4 times more likely to recognize babies danger signs .

And regarding diarrhea management, mothers in the intervention group were 6.5 times more likely to increase fluids during diarrhea.

Changes in regards to new born caring practices were also significant. Mothers in the intervention group were 5 times less likely to wrap their newborns, 30 times less likely to apply salt on the babies skin and 4.6 times less likely to use baby oil compared to mothers in the comparison group.

Chapter 6

Discussion, conclusion and recommendations

6.1 Introduction

This study is the first in Palestine to assess the effectiveness of community approach “timed and targeted counseling “on newborn care. The study took place 3 villages in Bethlehem. In this chapter, results are discussed and compared to similar studies worldwide. At the end of the chapter, study conclusion and recommendations are presented.

The discussion is divided into 5 sections. In the first section the study main findings are presented. In the following four sections, results are discussed according to the conceptual framework components, infant feeding practices, newborn care, mothers’ recognition of danger signs and diarrhea management.

6.2 Summary of the study findings

A total of 118 mothers were part of this study, 66 mothers were identified as members of the intervention group, and 52 were identified as members of the comparison group, no significant difference in the socio demographic characteristics between the both groups was identified.

Implementing Timed and Targeted Counseling for a whole year, proved to be very effective. Significant progress was achieved. It was noticed that several mothers’ nutritional and health practices have been changed. No major changes among the comparison group were identified.

In regards to breastfeeding practices mothers in the intervention group were 29.5 times more likely to exclusively breastfeed their babies, they were also 3 times more likely to extend breastfeeding above one year.

Complementary feeding practices were also improved among mothers in the intervention group, they were 83.6 times more likely to introduce food at six months, they were also 4 times more likely to recognize babies' danger signs.

And regarding diarrhea management, mothers in the intervention group were 6.5 times more likely to increase fluids during diarrhea.

Changes in regards to new born caring practices were also significant. Mothers in the intervention group were 5 times less likely to wrap their newborns, 30 times less likely to apply salt on the babies skin and 4.6 times less likely to use baby oil compared to mothers in the comparison group.

6.3 Breastfeeding practices

6.3.1 Duration of breastfeeding

In both groups baseline data showed that breastfeeding was practiced by the majority, by average 73% of the mothers in both groups breastfed their babies. However, after the intervention, duration of breastfeeding above one year increased from 56% to 83.3%.

Mothers were aware of the importance of breastfeeding, but did not know the importance of its duration; therefore the duration of BF was low. On average 40% of mothers' breastfed their children for one year and about 50% breastfed for more than a year.

Women mentioned different reasons for this short duration of breastfeeding. Some women said that they did not have enough breast milk. Others believed that at certain infant's age (few months) breast milk is not enough and depending on it alone will negatively affect babies' growth. Therefore, they introduced formula milk at a very early age. More reasons for such short duration of breastfeeding were, babies hunger (19%), insufficient breast milk (25%) and 16% mentioned pregnancy as a main reason for stopping breastfeeding.

Comparing these results with results from other studies we can notice that duration of breastfeeding rate in these Palestinian villages is higher than that of United States of America (CDC, 2010), and in the United Kingdom (Hamlyn B , 2000). In the United States they believe that breastfeeding is only for the first couple of months of an infant's life, or mostly up to year (FIA, 2003).

The mentioned reasons collected from the previous studies that hindered women from continuing BF, were mothers' employment and insufficient breast milk (Kilbride et al., 1999a). Families and friends encouragements (Li R, 2005), mothers' thinking that the baby is thirsty and the baby needs different flavors (Hamlyn B , 2000).

In developing countries such as West Africa the situation is different. Rates are higher especially in the Rural and Urban poor communities such as Ghana, Nigeria, Sierra Leone and Benin, where breastfeeding would last up to 24 months (Onofiok and D.O.Nnanyelugo, 1998). This could be related to the unavailability of formula milk or since these countries are poor milk formulas cannot be afforded.

In the Arab countries, in general breastfeeding is appreciated and practiced especially among rural populations. Nevertheless it's declining especially among urban areas (UNICEF, 2005). The same reasons for stopping breastfeeding were seen among mothers in Jordan. It was reported that insufficient breast milk perceptions was the main reason behind stopping breastfeeding (Kilbride et al., 1999c).

6.3.2. Exclusive breastfeeding

In this study, baseline data showed that exclusive breastfeeding rates were low among both groups. The rate was 9.6% among the comparison group, whereas among the intervention group was 27.3%. However, after intervention, exclusive breastfeeding increased from 27.3% to 69.7% in the intervention group.

Almost all mothers mentioned insufficient milk breast and the need to give their infants herbal drinks, especially for treating colic as main reasons for not breastfed their infants exclusively. Also, many mothers mentioned that they were encouraged by their husbands and mothers in law to do so.

In this intervention study big efforts were made to train the community health workers (CHW) and in return their role in educating and helping mothers in the intervention group successfully improved breastfeeding practices as shown above. CHW's found that in addition to the poor

knowledge among mothers in regards to exclusive breastfeeding and duration of breastfeeding, breastfeeding is being practiced inappropriately that's why they stop breastfeeding at a very early age. One of the CHWs' focus areas were on showing and teaching mothers on how to probably breastfeed, such as how to hold the baby while breastfeeding and the position and the duration during breastfeeding time. They as well supported and encouraged the mothers to trust their ability to breastfeed and that the quantity and quality of their milk would satisfy their children and matches their needs. They also familiarized them with the signs that indicate that their babies are getting enough milk such as wet diapers, bowel movements, swallowing sound, growing well, and others. Mothers were also provided with useful and practical tips to increase milk production such as increasing breastfeeding and the proper position of the baby during breastfeeding.

Worldwide exclusive breastfeeding till six months of age is rarely practiced. Results from this study are compatible with studies from other countries. In the United States mothers are encouraged to start feeding the baby earlier than six months (Li R, 2005), the same in the United Kingdom, most mothers introduce liquids when the baby is 4-10 weeks of age (Hamlyn B , 2000). Whereas, in developing countries, such as Jordan, a study revealed that only 30% of the surveyed infants were exclusively breastfed at 3 months of age (Kilbride et al., 1999b), and in Lebanon, only 7% were exclusively breastfed till 4 months of age (UNICEF, 1995).

Community based intervention conducted in some countries also showed improvements, positive results were reported among mothers in Bolivia, Ghana, and Madagascar. One year home visits increased exclusive breastfeeding rates from 54% to 65% ($P < .001$) in Bolivia, 68% to 79% ($P < .001$) in Ghana and 46% to 68% ($P < .001$) in Madagascar (Quinn et al., 2005a).

6.3.3 Initiation of breastfeeding within the first hour after delivery

This study baseline data showed that initiation of breastfeeding within the first hour after birth was low among both groups, by average the rate was around 50%. No major changes were noticed after the intervention.

Although it wasn't possible for the community health workers to visit the mothers right after the delivery (as they were at the hospitals) to make sure that they will initiate breastfeeding , but they have addressed this topic intensively during the last weeks of pregnancy , but it seems that their absence negatively affected this , among those who didn't initiate breastfeeding cesarean delivery was mentioned as a reason 58% of the 26% who had cesarean delivery didn't initiate breastfeeding. Women justified this by being very tired others mentioned the availability of formulas at some of the private hospitals, and the absence of the support from the nurses at the hospitals.

Comparing these results with results from other studies we can notice that, worldwide timely initiation of breastfeeding is in general low .A study that was conducted in Al-Hassa province in Saudi Arabia , revealed that only 11.4% were given timely breastfeeding (within 1 hour after birth) (El Gilany et al., 2012). A cross sectional study in Goba Woreda, South East Ethiopia, revealed that the prevalence of timely initiation of breastfeeding was 52.4%, which is similar to what we have here (Setegn et al., 2011).

A cross sectional study in Brazilian population, also revealed a similar numbers, only 47.1% of the mothers initiated breastfeeding within the first hour after birth, this was associated with birth full term pregnancy, mothers receiving prenatal guidance regarding the advantages of breastfeeding and normal delivery (Vieira et al., 2010).

In an urban area in Nepal, 43.5% of the mothers initiated breastfeeding within one hour of birth (Subba et al., 2007).

The above results indicate that worldwide timely initiation of breastfeeding is an issue.

From the above results we can notice that the type of intervention we have conducted proved to be very effective in changing mothers' practices in regards to duration and exclusive breast feeding, changes in exclusive breastfeeding were higher than changes gained from similar home visits programs in other countries. *A young mother from Wadi Alnees village in the intervention group said: "I do thank you for this, I'm a mother of six children, but for the first time I'm able to breastfeed my infant properly, I feel that he is satisfied, doesn't cry a lot and he is not suffering from colic".*

6.4 Complementary feeding

6.4.1 Timely introduction of meals

In both groups baseline data showed that timely introduction of meals was poorly practiced, only 13.5% of the mothers in the comparison group and 38.5% in the intervention group introduced foods at six months. However, after the intervention, timely introduction of meals among the intervention group increased to 66.7%.

During the collection of baseline data many mothers in both groups mentioned that after 4 months babies must be given solid food to make them healthy and strong. They mentioned that breast milk would not be enough for the children's growth and development and giving food at early age make introduction of foods later much easier. They also mentioned that early introduction of foods can help the child to gain weight, relieves his colic, and prepares him to the taste of the home made food and satisfies his hunger to sleep well.

In addition to the above mentioned reasons most mothers also mentioned that they do so because of the experience they gained mainly from their mothers and mothers in law.

These results are compatible with other countries. For example, in the United Kingdom 24% of mothers introduce solid food to their infants by the age of three months. The reported reasons behind this practice were mothers' beliefs that babies need different flavors and different nutritional value foods and drinks (Hamlyn B , 2000). Similarly, in Italy, 34% of Italian infants receive solid food prior to four months of age. One of the mentioned reasons

for introduction of solid food was low baby weight at the age of one month (Giovannini et al., 2004a).

6.4.2 Minimum meal diversity

In addition to the early introduction of meals, baseline data also showed that the introduced meals in terms of diversity were inappropriate, only 15.4% of the mothers in the comparison group and 16.7% in the intervention group gave their children the minimum meal diversity (4 groups or more). However, after the intervention, meal frequency increased to 66.7%.

Mothers experience and the knowledge they gained from family members, were the main reasons for such a practice, by average 34% of the mothers in both groups mentioned that their past experience derived them to do so and 48% mentioned that they were influenced by family members.

In Semi –urban community in Ethiopia, it was reported that mothers inappropriately introduced meals to their babies, they have reported that the consumption of vegetables and fruits were rare (Gebriel, 2000) and in West Africa mothers offer low nutrient density and high bulk meals (Onofiok and D.O.Nnanyelugo, 1998).

The same in Lebanon the quality of food introduced is also inappropriate (UNICEF, 1995) . In Al Amari camp in Ramallah, empty calorie foods such as tea with biscuits, salty snacks are also being introduced at an early age taking the place of high nutrient foods (Qlebo, 2008).

Results of intervention studies also showed improvements .In an economically disadvantaged areas of Sydney, Australia, home-based early intervention by community nurses resulted in reducing the proportion of mothers who introduced solids before 6 months by 12% (95% confidence interval, 4%-20%) from 74% to 62%. (Wen et al., 2011a), in our study the proportion of mothers who introduced solids before 6 months was reduced by 28.2 % , which again indicates the effectiveness of the TTC in regards to introduction of foods at 6 months in comparison with other interventions.

As indicated above and in regards to complementary feeding we can notice that this intervention was very effective. *A mother from Nahallin village in the intervention group said: “Confusion is what I used to feel. Before this intervention, I used to hear different stories on infant care and feeding practices, but now I ‘m so happy I’m not confused any more. I have one source of information that I can rely on, and I really can see the impact on my child’s health”.*

6.5 Mothers practices regarding newborn care

The baseline survey showed that mothers in the selected villages are subjecting their newborns to many harmful practices, believing that it’s very helpful for their health.

Some of these practices included salting the new-born baby especially salting the umbilical cord stump believing that this helps in drying it fast, preventing diaper rash, disinfecting skin, preventing bad skin odor, decreasing perspiration when the child is grown up and developing strong bones. Before the intervention 84.6% of mothers in the comparison group and 54.5% in the intervention group used salt for their babies.

Another practice is the harmful massage they apply to their babies, believing that massaging would enhance bone strength, maintain health, and provide warmth.

The entire body is massaged often with considerable force till his/her bones clink and usually the baby cries in pain. The mentioned reason for using powerful massaging is the stronger the massage the harder the bone would be in the future, this was practiced by 53.8% of mothers in the comparison group and 27.3% of mothers in the intervention group.

Some mothers also applied kohl to their infants soon after birth. They blackened the baby’s eyes, they did this to “strengthen and brighten the child’s eyes,” and others did it to prevent the child from being attacked by the Evil Eye, 13.5% of mothers in the comparison group and 10.6% of mothers in the intervention group added kohl on the eyes of their newborns.

Wrapping their newborns tightly using “Koflayeh” was another practice, they believe that this practice will keep the body straight, protects his bone from fractures and from falling down.

They considered wrapping important especially during the first three months. They mentioned that they were encouraged by their mothers in law to wrap their baby arguing they had done the same with their children, the majority 78.8% of mothers in the comparison group and 77.3% in the intervention group wrapped their newborns tightly using “Koflayeh”.

Baseline data also showed that mother in both groups, 78.8% of mothers in the comparison group and 68.2% of mothers in the comparison group bathed their newborns within the 24 hours after birth, believing that the baby is not clean and he should be bathed.

Moreover, mothers also mentioned applying oils, creams and powders, especially after bath to protect the babies’ skin. By average 60% of mothers in both groups applied oil, 31% used baby cream and around half of them used baby powder.

This intervention proved to be very effective in changing these harmful practices .Significant changes among mothers in the intervention group were reported, harmful massage practice was decreased from 27.2% to 4.5% (P value <0.01), Khol application was decreased from 10.6% to 0% (P value <0.01), salting the newborn was decreased from 54.5% to 3% (P value <0.01), wrapping the newborn was decreased from 77.3% to 10.6% (P value <0.01) and bathing the newborns within 24 hours after birth was decreased from 68.2% to 31.8% (P value <0.01).

Community health workers spent a lot of time explaining to the mothers how dangerous these practices could be, they focused on the lead component in al Khol and how toxic and dangerous it could be.

They also explained to them that newborns don’t need mineral oil (baby oil) or lotion after a bath, and explained to them how the greasy lotions or baby oils cause the rash and how they slow down the development of cells and causes premature aging of the skin .They explained how wrapping restricts and limits newborn’s movement and how it bothers the baby.

They also explained to them the side effects of bathing the newborns within the 24 hours and how it can induce hypothermia.

These results are compatible with other countries and such practices are also being practiced widely in many parts of the world.

In sub-Saharan Africa they bath their newborns within 6 hours of delivery and putting harmful materials on the cord to help it dry this was practiced by at least 28% of the mothers (Waiswa et al., 2010).

In Eastern Uganda Mothers were putting powder on the cord believing it will help it to dry (Waiswa et al., 2010).

In Pakistan bathing the baby immediately after birth was practiced by 56%, application of substances on umbilical cord was practiced by 58% and harmful body massage was practiced by 89%,(Ayaz and Saleem, 2010).

A similar situation is also seen among the Arab countries. In the North of Jordan a survey showed that for the umbilical cord care, 40% of mothers used sulfa powder, 13% used alcohol swabs and 25% used traditional methods such as salty water, cigarette ash and coins (Khassawneh et al., 2006).

Community interventions proved to be effective, a study that was conducted in Nilphamari district in Bangladesh, revealed that after a year of MNCH intervention with the presence of trained health workers in newborn care management, improvements in newborn care irrespective of any other variables were significant (BRAC, 2008). Across the study area, 53% of the infants were bathed at least after 3 days (Bernett et al. 2006).

A major progress in regards to new born caring practices was achieved. A mother from Wadi Raha Village said: *“I do follow all the recommendations, I’m a mother for the first time and I*

want to be a good one, I'm also sharing the great benefits and the learning's I'm gaining with other family members living outside my village."

6.6 Danger signs

Appropriate care seeking and illness care for infants are very important. Young children can die very quickly if an illness is not recognized. Sick young infants must be taken immediately to a trained provider who can give appropriate care.

In both groups baseline data showed that most of the mothers are not aware of the danger signs, only 15.2% of the mothers in the intervention group and 28.8% of the mothers in the comparison groups were aware of 3 or more danger signs.

Most of the mothers only mentioned fever as a danger sign, they also mentioned that once their babies have fever they take him/her to the doctor, but for other health problems they try what they have learned from people around, such as home remedies.

They also mentioned the unavailability of health facilities in the villages where they live, 77.3% of the mother in the intervention group and 75% of the mothers in the comparison group mentioned the unavailability of health services in their areas, they also mentioned the limited availability of public transportation to the city.

Percentage of mothers recognizing infants danger signs improved significantly after the intervention , the percentage increased to 48.5% (P value <0.01), significant changes in recognizing the following danger signs were reported ,convulsions and high temperature, pus and pain in the ear, vomiting , inability to drink ,ear or breastfeed and the entrance of chest muscle to the inside during breathing. Mothers in the intervention group mentioned that they sought immediate care at the health facilities when they have noticed any danger signs.

These results are compatible with other countries, for example in Wardha district in India a conducted study revealed that nearly 67.2 % mothers knew at least one newborn danger sign, and only 46.1% of sick babies received no treatment. As told by mothers, the reasons for not

taking actions even in presence of danger signs/symptoms were ignorance of parents, lack of money, faith in supernatural causes, non availability of transport, home remedy, non availability of doctor and absence of responsible person at home (Dongre et al., 2008a) .

Regarding ARI treatment, % of children under 5 taken to a health provider according to World Bank report in 2008, in Egypt the percentage during was 73%, in Jordan 75% and in Syria it was 77% (World Bank, 2008).

Another study conducted in India among 106 mothers revealed that most mothers reported that they recognized pneumonia by observing the quick respiratory rate and difficulty in breathing. With regard to management of mild ARI episodes, more than 1/2 of the mothers preferred not to give any treatment or to use only home remedies. In pneumonias, a majority preferred to consult a qualified doctor (Kapoor et al., 1990b) .

The Palestinian Centers of Bureau Statistics (PCBS) report revealed that referral to health providers is high among children suffering from acute respiratory infections (ARI). However timing of referral (delay in seeking medical advice) and the ability of PHC centers to act in their filtering role is still perceived as a major problem. 73% of pneumonia cases were taken to appropriate health and 70 % were given antibiotics (PCBS, 2006).

A household study that was conducted by World Vision in West Jenin and East of Hebron villages in the year 2009 revealed that by average 84.5% of mothers did not think that if the infant looks unwell or not playing is a danger sign. Of these mothers, 71.1% did not think that not eating or drinking is a danger sign , whereas 80% think that high fever or convulsions is very dangerous sign. Also, 83% did not think that fast or difficult breathing is a danger sign , 71% didn't think that vomiting is a danger sign and 92% did not think that lethargic or difficult awake is a danger sign. In this study, women in a focus group discussion mentioned that they take fever signs into consideration, and seek help from nearest health center or clinic others mentioned that the high cost they pay for doctors and transportations cost to reach centers forbids them from taking children to treatment (WV , 2009).

According to the World vision report on selected key maternal and child health interventions, the Palestinian mothers still can't determine if the respiratory infections need treatment by professionals or not and that clarifies the delay in seeking care, most of them start using ineffective traditional remedies and once there is no improvements they refer to the healthcare provider (WV, 2010).

Worldwide this issue has been identified as a serious issue, recognizing danger signs and seeking the proper care can save lives, many studies recommended to work closely with the health care providers, providing them with the proper knowledge and skills to recognize danger signs and take the proper actions immediately.

Unfortunately no available studies on the effectiveness of interventions addressing the danger signs, the available studies are only focusing on interventions regarding ARI.

6.7 Diarrhea management

Baseline data for the both groups showed that proper diarrhea management was poorly practiced, only 36% of the mothers in the intervention group mentioned increasing breastfeeding, 47% mentioned increasing fluids and 27.3% mentioned increasing food intake, where as among the comparison group only 21.2% mentioned increasing breastfeeding, 19.2% mentioned increasing fluid and only 11.5% mentioned increasing food intake.

Most of them mentioned that diarrhea is a common health issue among their children, usually they don't take their children to the health facility, instead they focus mostly on giving them fluids, they said that this is what we learned from others, homemade ORS was not known by the majority.

The study showed that diarrhea management knowledge and practices improved significantly among mothers in the intervention group (P value <0.01), during diarrhea episodes 75% of mothers mentioned increasing breastfeeding, 72 % mentioned offering more fluids or ORS, and in regards to feeding practices around 48.4% of the mothers offered more amounts of meals, a slight non significant increase was reported among the comparison group.

Mothers in the intervention group reported that they are aware of the importance of increasing food intake during diarrhea, but they faced the problem of the child refusal, this explains the low rate of food increase during diarrhea.

Community health workers explained to the mothers the importance of prepare feeding during diarrhea, they also taught them how to prepare ORS at home.

Findings in regards to diarrhea management are similar to other countries, for example the World Bank year 2008 report revealed that children with diarrhea (two weeks prior to the survey) who received oral rehydration therapy or increased fluids, with continued feeding in Syria, Jordan and Egypt were as follows: 34.2% in Syria, 32.2 % in Jordan and 19% in Egypt (World Bank, 2008).

A study that was conducted in Egypt with a total sample size of 11,032 revealed diarrhea incidence was 3.6 episodes per child under five years of age per year which . Although the majority of the caretakers knew of Oral Rehydration Salts (ORS), only 22% of cases with diarrhea in the last 24 hours received ORS. 54% of cases had received drugs, and many of the children with diarrhea received more than one drug (Jousilahti et al., 1997).

Another conducted study in a riparian community of Lake Victoria basin in Tanzania revealed that typical symptoms of severe dehydration (sunken eyes, loss of skin turgor, dry tears) were poorly recognized by mothers as characteristics of severe diarrheal diseases (Kaatano et al., 2006a).

In Palestine, diarrhea is still considered as a major health problem among children under 5 years of age. Only 63% were treated with ORS and / or increased fluids. Most families do not refer to the health facility when their children suffer from diarrhea, their knowledge and practices regarding home management were very poor (PCBS, 2006).

Interventions conducted in different countries also proved to be effective. An intervention through training a community health workers proved to be very effective, the proportion of diarrhea cases with dehydration were significantly lower in districts with interventions.

In Nepal a Community-based interventions for diarrheal diseases through training community health workers succeed in lowering diarrhea cases in districts with intervention.

6.8 Conclusion

This study showed many important things; it showed non –compliance with the international guidelines and recommendations regarding new born care , it showed the effective of community level approach “timed and targeted counseling “,in contributing to the change in mother’s knowledge and behavior. It was proved that targeting mothers of children with the messages neither too early to be forgotten, nor too late can influence the decision to adopt critical positive behaviors, and communicating these messages at a household level by skilled CHWs encourages open discussion and a timely referral of urgent cases to health professionals.

TTC effectiveness was reflected on the babies health in general .During the study period diarrhea cases were lower in the intervention group than in the control group, 10 diarrhea cases were reported among children in the intervention group, whereas 25 cases were reported among children in the comparison group. Respiratory illness was also lower in the intervention group.

Fifteen infection cases were reported among children in the intervention group, whereas 33 cases were reported among children in the comparison group.

Common cold cases were 39 in the intervention group, whereas 50 cases were reported in the comparison group, 20 cases of fever were reported among the intervention group and 31cases were reported among children in the comparison group.

Seven ear infection cases were reported in the intervention group whereas 32 cases were reported in the comparison group.

The mean weight and length of the infants in the two groups did not differ significantly at the end of the study period.

Another outcome for this approach that was beyond our expectations is the intervention effect on the Community Health workers (CHWs), as there was a positive effect on their personalities, where they became recognized and respected members in their communities.

“I wanted to be a CHW because I always wanted to know the right information concerning topics related to mother and child health and nutrition, and I always wanted to transfer this to my community”. Says Galia a CHW.

Below are some statements from the community health workers that reflect mothers' engagement and their appreciation for the program.

“I went once to visit one of the mothers, and didn't find her home. On my way back, I saw her neighbor and told her to tell the mother that I came while she was out, and that I will be coming again next week. An hour later, I was surprised to see the mother holding her baby and knocking on my door! She said “I really benefit from what you teach me and I don't want to wait for next week, can I please come in so you can tell me more?” Said Amal Njajreh, a Community Health Worker from Nahaline village.

“One time, I had burned skin burn and the doctor told me that I should stay away from the sun for at least one month, so I informed the mothers I'm working with that I won't be able to visit them until I get better. The mothers were very disappointed. Next day I was surprised to see them all at my doorstep telling me that since I can't go to them, they decided to come over to my house to learn and benefit. This made me very happy to see how committed they are. And they continued to visit me throughout the month”. Says Fida' Esmaeel, a Community Health Worker from Nahaline village.

Timed and targeted counseling as an intervention at the household level is very effective, and for better outcomes it should be combined with changes at the community and policy makers' level.

6.9 Recommendations

As a result of this study the following are recommended

❖ At the household level:

- Due to context similarities in most of the oPt localities, the TTC is recommended to be used at the household level as one of the effective methods to scale-up positive MCHN practices and prevent the common malpractices in other areas.
- Improve the social support systems at the household level since it's also a barrier to optimal newborn care. Mothers require an enabling environment if they are to practice optimal newborn care and this can only be possible with full support at the household level. Mothers in law need to be educated about the bad sequence of the harmful practices on their grandchildren. Include mothers' supporters such as husbands, and grandmothers in the effort to promote healthy practices are important, women in our communities put high value on the opinion of these significant people in their lives.

❖ At the community level:

- Assist the community to have an emergency plan, especially for cases that need urgent response.
- Improve partnership between the health facility and the communities they serve.
- Conduct training sessions for health care providers in the PHC clinics on newborn care and feeding practices

- It's recommended to combine the TTC with other community level models/approaches. Models for community level aim to focus on building the capacity of community groups to address and monitor local causes of illness, death, and malnutrition, advocate for quality health service delivery, and monitor home-based care services. The modes proposed are, but not limited to: Community-IMCI, Parent Support Group/Club, Positive Deviance (PD), Community Case Management (CCM), Early Childhood Development (ECD), Community-Based Management of Acute Malnutrition (CMAM), Community System Strengthening (CSS), Citizen's Voice and Action (CVA) (Table 6.1).

❖ At the policy makers' level:

- Due to the huge needs of our communities and for a broader coverage , its recommended to combine the TTC and the community level models/approaches with the governmental system/structure level models/approaches . At the governmental system/structure level the models will aim to strengthen the capacity for quality programs, service delivery. Core models/approaches proposed are: IMCI –health system strengthening component (building the capacity of HCP and health facilities for IMCI); Baby-friendly Hospital Initiative (BFHI), Life Skills (LS) education at schools; Child Health Now (CHN) for mobilizing government leaders and keeping them accountable for health outcomes (table 6.2)
- Share results with policy makers, negotiate on how to activate and enhance the role of CHW's who are part of the system as well as those who are part of other organizations.
- Improve partnership and cross sectoral collaboration between the government and the different organizations to address the underlying causes of the health problem in our communities.
- Work closely to support the MOH to initiate baby friendly hospitals.

- Advocate so that MOH improves outreach health events especially in villages that do not have access to health services within their communities.
- The need to advocate and request the government and nongovernmental health care providers to continue to provide growth monitoring until the age of 5 years not until the age of 3 as currently practiced. This needs to be coupled with educational programs and policies that encourage and educate mothers to monitor children growth until the age of five.

To summarize , I would like to say that health is a basic need and a crosscutting issue that, if not assured, can affect on all sectors/systems, health is a precondition for any development programming , an integrated, comprehensive programming can make significant impact towards achieving the MDG's, and towards a healthy generation outcomes .

All partners will work together to implement evidence-based and core interventions; engage the communities through identifying their priorities and vision. All partners should have the desire, commitment and passion to work for improving child well-being, design the program and work together with the communities to achieve the objectives in sustainable ways.

Table 6.1 : Models at the community level	
Models / Name	Description
Citizen's voice and Action (CVA)	It is a local-level advocacy approach that may be used to develop advocacy agendas around a range of issues, including those related to Health and Nutrition.
Parent Support Groups (PSG)	Parent Support Groups target pregnant women, children to ensure and promote positive behaviors for appropriate maternal/child health care. They serve as bridges between the households and health facilities for improved health outcomes through peer to peer outreach mechanisms used at the household and also at community entry points.
Early Childhood Development (ECD)	Model is aimed at improved health and nutrition of pregnant women and children U5. It promoted the development of foundational skills in children U5, to lead healthy, fulfilling lives in the future and assure that young children are cared for and protected. ECD improves knowledge of pregnant women, caregivers of U5, and community members in: health and nutrition; maternal health and safe birthing; physical and oral hygiene; early childhood development; play and participation; prevention of domestic violence; accident prevention; positive discipline; child protection; special needs of children; Spiritual nurture. Also, the model is aimed at Behavior change among pregnant women, caregivers of U5, and community members around the above practices. The model is delivered mostly at community level by cadre of volunteers, MoH, MoE or other equivalents through community, peer group meetings.
Positive Deviance	PD is a model based on the premise that solutions to community problems already exist within the community. This deliverable is used to work closely with parents and caregivers to define problems and identify solutions from within communities through positive deviance processes and use of tools. It helps caregivers develop their skills and understanding towards using the community based solutions identified. Can be delivered at community and household levels to address various health problems.
Household/Community IMCI (HH/C-IMCI)	The household and community components of IMCI strategy approach is focused on 1) linking the communities with the health facilities they serve 2) strengthening/empowering the community structures (CHWs, health volunteers) for improved child health

	outcomes; 3) promoting household key practices.
Community Case Management (CCM)	The purpose of this model is to increase the use of curative and preventive interventions for pneumonia, diarrhea and malaria. CCM delivers curative interventions for common childhood illnesses and also provides an avenue for training caregivers in prevention and care-seeking behaviours through trained community health workers. It is designed to be used in outpatient clinical settings with limited diagnostic tools, limited medications and limited opportunities to practice complicated clinical procedures.
Community-based Management of Acute Malnutrition (CMAM)	A model that help to health and nutrition workers to design, implement, monitor and evaluate CMAM programs. It focuses on the community-based management of SAM in children under 5 years. It is designed to increase participants' knowledge of, and build practical skills to implement CMAM.
Community System Strengthening (CSS)	An approach to strengthen community structure with 6 core components: 1) enabling environments and advocacy; 2) community networks, partnerships, linkages and coordination; 3) resources and capacity building; 4) community activities and service delivery; 5) organizational and leadership strengthening; 6) monitoring and evaluation and planning

Table 6.1 : Models at the community level

Models / Name	Description
Child Health Now (CHN)	It is a high level advocacy to support communities in raising their voices about their right to quality health care, and press national governments to meet their responsibilities to children, mothers, families and communities throughout their country
Integrated Management of Childhood Illness (IMCI)	WHO/UNICEF developed model, designed to use in outpatient clinical settings with limited diagnostic tools, limited medications and limited opportunities to practice complicated clinical procedures. It targets children under five and consists of 3 components: 1) Strengthening of health care providers skills for IMCI; 2) Strengthening of health system for IMCI; 3) Improving key family health practices that a) promote healthy child growth/development, b)prevent illness, c) help to manage illness appropriately and d)promote timely health seeking behaviors.
Health System Strengthening (HSS)	Framework to strengthen health system around the following 6 building blocks: 1) health services; 2) health workforce; 3) health information system; 4) health financing system; 5) leadership and governance; 6) medical products, vaccines and technologies
Life Skills (LS)	Life-skills is a tool for encouraging the youth to take control of their future through making less risky and informed sexual choices. The tool offers youth knowledge for a better understanding of themselves and their environment as well as conceptualizing their future and strategies for decision making.

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Appendix 1

جامعة القدس

انا، قد طلب مني ان اشارك في هذه الدراسة من قبل، و التي اطلعتني على هدف الدراسة و هو تقييم المعلومات و الممارسات المتعلقة بصحة و تغذية الاطفال الرضع الاقل عمرا من السنة، في محاولة لتحسين الوضع الصحي و التغذوي لهؤلاء الرضع. و سيشمل هذا البحث على تعبئة استمارة تحوي مجموعة من الاسئلة يمكن الاطلاع عليها مسبقا , و قد تحتاج عملية التعبئة حوالي 20 دقيقة.

لا يوجد اي اخطار متوقعة او معروفة من المشاركة في هذه الدراسة و اي اضرار قد تتجم هي من مسؤولية المؤسسة و ستحاسب المؤسسة عليها, كما ان مشاركتي في البحث لا يعني بالضرورة الالتزام معي في حال تم تنفيذ اي تدخلات مستقبلية.

سيتم استخدام المعلومات بسرية تامة و سوف لن يتم ذكر الاسم او لي اشارات واضحة قد تدل علي. ان اشتراكي في هذه الدراسة هو تطوعي و يمكنني الانسحاب في اي وقت اريد, و لي الحق بالاستفسار و الحصول على الاجابات التي اريدها.

للحصول على اي معلومات اضافية يمكن الاتصال بالمشرف على هاتف رقم°.

توقيعي يعني رغبتي المشاركة في الدراسة.

توقيع المشارك التاريخ

توقيع الباحث التاريخ

Appendix 2

AL Quds university

القسم الأول: البيانات التعريفية

ID00: رقم الاستمارة المتسلسل في العينة: <input type="text"/>		ID01: اسم منطقة التطوير الريفي (ADP): <input type="text"/>	
ID02: المحافظة: <input type="text"/>		ID03: التجمع: <input type="text"/>	
سجل المقابلة			
ID04: تاريخ استيفاء الاستمارة:		يوم <input type="text"/>	شهر <input type="text"/>
		سنة <input type="text"/>	
ID05: اسم الباحث/ة:	ID06: رقم الباحث/ة:	<input type="text"/>	<input type="text"/>
ID07: اسم المدخل/ة:	ID08: رقم المدخل/ة:	<input type="text"/>	<input type="text"/>
التاريخ: 2011/...../.....			

القسم الثاني: التفاصيل السكانية والاجتماعية

1	اسم الأم الرباعي: <input type="text"/>
2	رقم التليفون: <input type="text"/>
3	اسم رب الأسرة الرباعي: <input type="text"/>
4	العنوان: <input type="text"/>
5	تاريخ ميلاد الأم: <input type="text"/> / <input type="text"/> / <input type="text"/>
6	عمر الأم: <input type="text"/>
7	الحالة الاجتماعية للأم: 1. متزوجة 2. أرملة 3. مطلقة <input type="text"/>
8	عدد مرات الحمل: <input type="text"/>
9	عدد الولادات الحية: <input type="text"/>
10	اسم آخر لطفل (الرباعي): <input type="text"/>
11	جنس المولود: 1. ذكر 2. أنثى <input type="text"/>
12	ترتيبه بين بقية الأطفال: <input type="text"/>
13	تاريخ الميلاد للطفل: <input type="text"/> / <input type="text"/> / <input type="text"/>
14	عمر الطفل: <input type="text"/> / <input type="text"/> / <input type="text"/>
15	وزن الطفل عند الولادة: 1. <input type="text"/> - <input type="text"/> كغم 2. غير متوفر <input type="text"/>
16	طول الطفل عند الولادة: 1. <input type="text"/> - <input type="text"/> سم 2. غير متوفر <input type="text"/>
17	محيط الرأس عند الولادة: 1. <input type="text"/> - <input type="text"/> سم 2. غير متوفر <input type="text"/>
18	أين ولد الطفل: 1. المستشفى 2. مركز صحي 3. البيت 4. غير ذلك، حدد: <input type="text"/>
19	ما هو المستوى التعليمي لوالد الطفل: 1. أمي 2. أقل أو يساوي 6 سنوات 3. 7-9 سنوات 4. 10-12 سنة 5. دبلوم عالي، أو بكالوريوس أو ماجستير <input type="text"/>
20	ما هو المستوى التعليمي لوالدة الطفل: 1. أمي 2. أقل أو يساوي 6 سنوات 3. 7-9 سنوات 4. 10-12 سنة 5. دبلوم عالي، أو بكالوريوس أو ماجستير <input type="text"/>
21	هل تعمل الأم: 1. نعم، حدد <input type="text"/> 2. لا <input type="text"/>

22	هل يعمل الأب: 1. نعم، حدد 2. لا <input type="checkbox"/>
23	كم عدد أسابيع فترة الحمل الأخير؟ 1. أقل من 37 أسبوع 2. 37-42 أسبوع 3. أكثر من 42 أسبوع 3. لا أتذكر (تعليمات للتباحث: أول - التاسع = 37 أسبوع)
24	كيف تمت عملية الولادة؟ 1. ولادة طبيعية 2. ولادة قيصرية <input type="checkbox"/>

رعاية الرضيع

25	هل تم حمام طفلك خلال الـ 24 ساعة من ولادته؟ 1. نعم 2. لا <input type="checkbox"/>
26	هل تستخدم الكوفية والأربطة لطفلك المولود؟ 1. نعم 2. لا <input type="checkbox"/>
27	ضعي إشارة صح عند الممارسات المتبعة للأطفال التالية: 1. تلميح الطفل <input type="checkbox"/> 2. وضع كحل في العين والسرور <input type="checkbox"/> 3. استخدام النهاية <input type="checkbox"/> 4. التدليك الخفيف <input type="checkbox"/> 5. استخدام زيت الأطفال <input type="checkbox"/> 6. استخدام كريم الأطفال <input type="checkbox"/> 7. استخدام بودرة الأطفال <input type="checkbox"/>
28	ما هي علامات الخطر التي قد تظهر على المولود الجديد؟ 1. 2. 3. 4. 5. 6.

فترة الرضاعة (العمر أقل من سنة)

29	هل تعرفين ما هو حليب البيا / الحليب الأصفر / المسمار؟ 1. نعم 2. لا <input type="checkbox"/>
30	ماذا تعرفين عن حليب البيا؟ 1. جيد للطفل (يعطي مناعة للطفل الرضيع، يعطي طاقة، دهن عالي) 2. حليب غير جيد، ذو كثافة عالية، لا يجب أن يعطى للطفل 3. ليس كافى للطفل الرضيع
31	هل أعطيت طفلك الرضيع حليب البيا؟ 1. نعم 2. لا <input type="checkbox"/>
32	ما هي الفترة الزمنية بين الولادة وأول مرة تم وضع الطفل الرضيع على صدرك ليرضع؟ 1. _____ ساعات 2. لا أتذكر
33	هل تم إعطاء طفلك أي شيء للشرب قبل وضعه على الصدر ليرضع؟ 1. نعم 2. لا 3. لا أعرف لا أتذكر <input type="checkbox"/>
34	إذا كان الجواب نعم، ما هو الشيء؟
35	من أعطاه إياه؟
36	لماذا؟!
37	كيف تحددين متى ترضعين طفلك في اليوم 1. أنا لا أرضع الطفل 2. كلما طلب الطفل (كلما بكى) 3. كلما استيقظ الطفل 4. كل ساعتين 5. كل 3 ساعات 6. غير ذلك، حددي:
38	هل ترضعين طفلك نهارا وليلا؟ 1. نعم 2. فقط في النهار 3. فقط في الليل 4. لا أرضع <input type="checkbox"/>
39	هل أرضعت طفلك جميعا (إضافة إلى طفلك الأخير رضاعة طبيعية من الصدر؟ 1. نعم (تنقلي إلى السؤال (45) 2. لا <input type="checkbox"/>

40	لماذا لم ترضعي أطفالك من الصدر؟ 1. لم أعرف كيف <input type="checkbox"/> 2. الرضاعة تؤثر على شكل الصدر <input type="checkbox"/> 3. خوفا من تعقيدات ومشاكل الرضاعة الطبيعية (التهابات الثدي) <input type="checkbox"/> 4. خوفا من زيادة الوزن <input type="checkbox"/> 5. لم أحصل على الدعم العائلي <input type="checkbox"/> 6. لم أحصل على دعم الزوج <input type="checkbox"/> 7. أسباب أخرى، حددني:																																																																														
41	في أي عمر توقفت عن إرضاع طفلك السابق؟ شهر <input type="text"/>																																																																														
42	لماذا توقفت عن إرضاع طفلك السابق عند هذا العمر؟ تعليمات للباحثة: ضعني صحتك جميع الأسئلة المحتملة 1. الطفل يأخذ حليب اصطناعي <input type="checkbox"/> 2. الطفل كبير السن <input type="checkbox"/> 3. الطفل جائع دائما / لا يشبع <input type="checkbox"/> 4. الطفل يمسك الطعام بيده <input type="checkbox"/> 5. رفض الطفل لصدري <input type="checkbox"/> 6. مشاكل مع زوجي بسبب الرضاعة <input type="checkbox"/> 7. عدم تشجيع من العائلة / الأصقاء <input type="checkbox"/> 8. تعبت من الرضاعة من الصدر <input type="checkbox"/> 9. حليبي غير كافي <input type="checkbox"/> 10. مرض / علاج بالمستشفى <input type="checkbox"/> 11. العودة للعمل <input type="checkbox"/> 12. ملائسي أصبحت دائما مبتلة وجمالة الصدر <input type="checkbox"/> 13. سفر / عطلة <input type="checkbox"/> 14. حدوث حمل <input type="checkbox"/> 15. زك وزني / خفت من زيادة الوزن <input type="checkbox"/> 16. شكل صدري أصبح غير جميل <input type="checkbox"/> 17. غير ذلك، حددني:																																																																														
43	كيف توقفت عن الرضاعة 1. مرة واحدة 2. تدريجيا 3. لم أتوقف عن الرضاعة <input type="checkbox"/>																																																																														
44	كيف تم ذلك؟ 1. قررت أن لا أضعه على صدري مرة أخرى 2. وضع طعم كثير المتوالي أو مر على الصدر (صيرة مرة، قلقل، الخ) 3. إبعاد الطفل عنى لعدة أيام (تركه مع أجداده، أحد أفراد العائلة) 4. توقفت عن إرضاعه من الصدر أثناء النهار ثم أثناء الليل 5. تخفيف عدد الرضعات أثناء النهار ثم أثناء الليل، ثم توقفت 6. غير ذلك، حددني:																																																																														
45	كيفية ممارسة الرضاعة الطبيعية لكل طفل على حدة، بالآشهر: - اقتصر على رضاعة طبيعية تعني عدم إعطاء الطفل أي شيء غير حليب الأم، حتى الماء. - سيادة الرضاعة الطبيعية تعني اعتماد الطفل على حليب الأم مع إمكانية إعطائه القليل من الماء أو العصير أو الأعشاب ولكن ليس حليب صناعي أو أنصبة مهروسة. - أنصبة تكميلية تعني إعطاء الطفل أطعمة صلبة أو مهروسة أو حليب صناعي إضافة إلى حليب الأم. <table border="1"> <thead> <tr> <th>ترتيب الطفل</th> <th>اقتصر على رضاعة طبيعية (عدد الأشهر)</th> <th>سيادة الرضاعة الطبيعية (عدد الأشهر)</th> <th>أطعمة تكميلية (عدد الأشهر)</th> <th>استمرار الرضاعة الطبيعية لغاية عمر شهر (حددي الشهر)</th> <th>حليب أطفال صناعي</th> </tr> </thead> <tbody> <tr><td>1</td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>2</td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>3</td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>4</td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>5</td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>6</td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>7</td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>8</td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>9</td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>10</td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>11</td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>12</td><td></td><td></td><td></td><td></td><td></td></tr> </tbody> </table>	ترتيب الطفل	اقتصر على رضاعة طبيعية (عدد الأشهر)	سيادة الرضاعة الطبيعية (عدد الأشهر)	أطعمة تكميلية (عدد الأشهر)	استمرار الرضاعة الطبيعية لغاية عمر شهر (حددي الشهر)	حليب أطفال صناعي	1						2						3						4						5						6						7						8						9						10						11						12					
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تغذية الرضيع

العمر (بالأشهر)	وجبة (الشهر)	محاولة تنويع (الشهر)	لا يأخذ	لا أتذكر
الحليب الصناعي للرضع / للأطفال				
سكر فضي مع ماء أو يالسون				
ماء				
ماء محلي				
شاي بدون سكر				
شاي مع سكر				
شاي مع بسكويت أو قرشلة				
حليب مع بسكويت أو قرشلة				
مهلبية / كاستر / سحلب				
بابونج / يالسون / ميرمية / أعشاب				
عصير فاكهة طبيعي				
عصير خضار (جزر / بندورة)				
حليب بقر كامل الدسم (بودرة / سائل)				
لبنة / جبنة / جبنة مكثبات				
لين رائب / شمينت				
لين محلي (برللي، جماديم، لين مع فاكهة)				
خضار مهروسة في البيت				
فاكهة مهروسة في البيت				
بطاطا مهروسة				
بقوليات (حمص، فول، عدس)				
عسل / دبس				
حبوب للأطفال (سيرلاك، كورن فلور)				
بسكويت الأطفال				
خبز، بسكويت بأنواعه				
أرز مهروس بدون إضافات				
أرز مهروس مع إضافة مرقعة الطعام				
طعام أطفال جاهز (جيريير)				
شوربات				
طعام العائلة (طبخ)				
بياض بيض				
صفار بيض				
بيضة كاملة				
لحوم / دجاج / سمك				
بمبا / شربيس				
غوره، حدي.....				

46

47 ماذا كان الغذاء الأول الذي أعطي للطفل غير حليب الصدر أو الحليب الصناعي؟

48	<p>لماذا بدأت بإعطاء الأطعمة الصلبة أو السوائل في هذا الشهر..... (للباحثة: حددي الشهر)؟ تعليمات للباحثة: ضعي إشارة بجانب جميع الأجوبة المحتملة</p> <table border="0"> <tr> <td><input type="checkbox"/></td> <td>1. رغبة شخصية من قبل الأم</td> <td><input type="checkbox"/></td> <td>2. نصيحة الدكتور</td> <td><input type="checkbox"/></td> <td>3. نصيحة الممرضة</td> </tr> <tr> <td><input type="checkbox"/></td> <td>4. تجربة سابقة</td> <td><input type="checkbox"/></td> <td>5. الطفل وصل عمر الفطام</td> <td><input type="checkbox"/></td> <td>6. حليبي غير كافي</td> </tr> <tr> <td><input type="checkbox"/></td> <td>7. الطفل دائم البكاء</td> <td><input type="checkbox"/></td> <td>8. رفض الطفل صدي</td> <td><input type="checkbox"/></td> <td>9. مشاكل مستمرة في الصدر</td> </tr> <tr> <td><input type="checkbox"/></td> <td>10. عودتي للعمل</td> <td><input type="checkbox"/></td> <td>11. سفر / عطلة</td> <td><input type="checkbox"/></td> <td>12. مرض / علاج بالمستشفى</td> </tr> <tr> <td><input type="checkbox"/></td> <td>13. الطفل لا يشبع</td> <td><input type="checkbox"/></td> <td>14. تشجيع العائلة / الأصدقاء</td> <td><input type="checkbox"/></td> <td>15. ضغط الجدات</td> </tr> <tr> <td><input type="checkbox"/></td> <td>16. تعبت من الرضاعة</td> <td><input type="checkbox"/></td> <td>17. اشعر بالعزلة بسبب الرضاعة</td> <td><input type="checkbox"/></td> <td>18. ملابس أصبحت دائما مبللة وحمالة الصدر غير مرتبة بسبب الحليب</td> </tr> <tr> <td><input type="checkbox"/></td> <td>19. تعاطي أدوية</td> <td><input type="checkbox"/></td> <td>20. حمل جديد</td> <td><input type="checkbox"/></td> <td>21. الطفل يمسك الطعام بيده</td> </tr> <tr> <td><input type="checkbox"/></td> <td>22. الطقس حار</td> <td><input type="checkbox"/></td> <td>23. غيره، حددي.....</td> <td colspan="2"></td> </tr> </table>	<input type="checkbox"/>	1. رغبة شخصية من قبل الأم	<input type="checkbox"/>	2. نصيحة الدكتور	<input type="checkbox"/>	3. نصيحة الممرضة	<input type="checkbox"/>	4. تجربة سابقة	<input type="checkbox"/>	5. الطفل وصل عمر الفطام	<input type="checkbox"/>	6. حليبي غير كافي	<input type="checkbox"/>	7. الطفل دائم البكاء	<input type="checkbox"/>	8. رفض الطفل صدي	<input type="checkbox"/>	9. مشاكل مستمرة في الصدر	<input type="checkbox"/>	10. عودتي للعمل	<input type="checkbox"/>	11. سفر / عطلة	<input type="checkbox"/>	12. مرض / علاج بالمستشفى	<input type="checkbox"/>	13. الطفل لا يشبع	<input type="checkbox"/>	14. تشجيع العائلة / الأصدقاء	<input type="checkbox"/>	15. ضغط الجدات	<input type="checkbox"/>	16. تعبت من الرضاعة	<input type="checkbox"/>	17. اشعر بالعزلة بسبب الرضاعة	<input type="checkbox"/>	18. ملابس أصبحت دائما مبللة وحمالة الصدر غير مرتبة بسبب الحليب	<input type="checkbox"/>	19. تعاطي أدوية	<input type="checkbox"/>	20. حمل جديد	<input type="checkbox"/>	21. الطفل يمسك الطعام بيده	<input type="checkbox"/>	22. الطقس حار	<input type="checkbox"/>	23. غيره، حددي.....																																																																																																																				
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أمراض الأطفال

52	عندما يصاب طفلك بالإسهال، هل ترضعيه؟ 1. أقل من المعتاد 2. نفس الكمية 3. أكثر من المعتاد 4. لا أعرف 5. الطفل لا يرضع	<input type="checkbox"/>
53	عندما يصاب طفلك بالإسهال، هل تقدمي مشروبات؟ 1. أقل من المعتاد 2. نفس الكمية 3. أكثر من المعتاد 4. لا شيء 5. لا أعرف	<input type="checkbox"/>
54	عندما يصاب طفلك بالإسهال، هل تطعميه؟ 1. أقل من المعتاد 2. نفس الكمية 3. أكثر من المعتاد 4. لا شيء 5. لا أعرف	<input type="checkbox"/>
55	عادة، عندما يكون مصاب بالسعال، حمى، إسهال هل تأخذي طفلك إلى مكان للعلاج خارج المنزل ؟ 1. نعم 2. لا	<input type="checkbox"/>

الخدمات الصحية

56	ما هو تقييمك للخدمات المقدمة من قبل المراكز الصحية في منطقتك؟ 1. سيئة 2. مقبولة 3. جيدة 4. ممتازة	<input type="checkbox"/>
57	هل العيادات الصحية في منطقتك كافية؟ 1. نعم 2. لا	<input type="checkbox"/>
58	من أين تحصلوا على المعلومات العامة أو المشورة حول الصحة أو التغذية؟ 1. العاملین الصحيين 2. التلفاز 3. الجرائد والمجلات 4. الأخرى، حدد: 5. الراديو 3. الناس	<input type="checkbox"/>

Appendix 3 –A
Monitoring form

التاريخ:

رقم الزيارة: ()

اسم الأم:

اسم الطفل (اقل من سنة):

موضوع الزيارة:

التعليمات التي تم إعطاؤها للأم:

ملاحظات:

توقيع لمستفيدة:

توقيع العاملة الصحية

Appendix 3 –B Check list

جدول الممارسات عند السيدات			
الرقم	نوع الممارسة	نعم	لا
1	عانت السيدة من مشاكل حمل		
2	عانت من مشاكل حمل وذهبت للاستشارة الطبية		
3	تناولت حبوب حديد , فوليك اسيد , اثناء الحمل		
4	زيادة كمية الاغذية خلال فترة الحمل		
5	لدى السيدة خطة للولادة		
6	لدى السيدة الحامل معرفة عن اهمية النظافة		
7	التزمت بالزيارات الاربعة الاساسية		
8	عانت من مشاكل ما بعد الولادة		
9	عانت من مشاكل ما بعد الولادة ولجأت للاستشارة الطبية		
10	عانى المولود من مضاعفات ما بعد الولادة ولجأت الاسرة للاستشارة الطبية.		
11	عانى المولود من مضاعفات ما بعد الولادة		
12	تمت الولادة في مركز صحي		
13	تمت الولادة من قبل شخص متخصص		
14	تم تسجيل وزن الطفل		
15	وزن الطفل المولود كان اقل من 2.5 كغم		
16	تم وضع المولود مباشرة على صدر الام خلال ساعة		
17	الام على معرفة بعلامات الخطر اثناء الحمل		
18	تقوم الام بتمايلج الطفل		
19	تقوم الام بتقييط الطفل		
20	تقوم الام بتدفئة الطفل ولفه مباشرة بعد الولادة		
21	تم عمل حمام للطفل مباشرة بعد الولادة		
22	تقوم الام بالرضاعة الحصرية مدة 6 اشهر		
23	تقوم الام بغسل اليدين بالوقت المطلوب والمناسب		
24	الام على اطلاع بطريقة تحضير محلول الاسهال		
25	تقوم الام بالبده بادخال الاغذية التكميلية للطفل بعد اول 6 شهور		
26	تقوم الام باعطاء الطفل الحد الادنى من الوجبات		
27	تقوم الام باعطاء الطفل الحديد او الاغذية الغنية بالحديد		
28	لدى الام مدعمات الحديد		
29	لدى الام غلبة من فيتامين أ		
30	تستمر الام بارضاع الطفل لاكثر من عام		
31	الاطفال من عمر 6 ال 23 شهر لديهم مؤشرات للمرض خلال الاسابيع الماضية		
32	الاطفال من عمر 6 ال 23 شهر لديهم مؤشرات للمرض خلال الاسابيع الماضية تم اخذه الى العيادة		
33	الاطفال من عمر 6 ال 23 شهر خلال اسبوعان الماضيان لديهم مؤشرات للمرض حرارة , سعال , صعوبة تنفس		
34	الاطفال من عمر 6 ال 23 شهر عانو من الحمى خلال الاسبوعان الماضيان		
35	الاطفال من عمر 6 ال 23 شهر عانو من الاسهال خلال الاسبوعان الماضيان		
36	الاطفال من عمر 6 ال 23 شهر عانو من الاسهال وتناول محلول الاسهال خلال الاسبوعان الماضيان		
37	مدى معرفة الام بعلامات الخطر عند الاطفال		

Appendix 3 –C
Check list

تاريخ الزيارة	اسم الطفل	الجنس	تاريخ الميلاد	العمر	الطول	وزن الام	وزن الام مع الطفل	وزن الطفل	محيط الرأس	مشاكل صحية عانى منها الطفل في الفترة الاخيرة الرجاء ضع دائرة	ملاحظات
										رشح - سعال - التهابات تنفسية	محيط الرأس بالنسبة للعمر
										اسهال- دم في البراز-تشنجات	الوزن بالنسبة للطول
										تنفس سريع اونطيء- ارتفاع حرارة	الوزن بالنسبة للعمر
										اخرى حدد	الطول بالنسبة للعمر
										رشح - سعال - التهابات تنفسية	محيط الرأس بالنسبة للعمر
										اسهال- دم في البراز-تشنجات	الوزن بالنسبة للطول
										تنفس سريع اونطيء- ارتفاع حرارة	الوزن بالنسبة للعمر
										اخرى حدد	الطول بالنسبة للعمر
										رشح - سعال - التهابات تنفسية	محيط الرأس بالنسبة للعمر
										اسهال- دم في البراز-تشنجات	الوزن بالنسبة للطول
										تنفس سريع اونطيء- ارتفاع حرارة	الوزن بالنسبة للعمر
										اخرى حدد	الطول بالنسبة للعمر

Appendix 3 –D Work plan

خطة العمل من تاريخ-----إلى-----

اسم العاملة الصحية-----

الرقم	اسم الأم الحالة	عدد الزيارات	موضوع الزيارة	التاريخ	ملاحظات
1.					
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					