

Deanship of Graduate Studies

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**Knowledge and Practices of Postnatal Primiparous
Mothers towards Newborns' Care at Governmental
Primary Health Centers in Gaza Strip**

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Mothers towards Newborns' Care at Governmental
Primary Health Centers in Gaza Strip**

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Thesis Approval

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Newborns' Care at Governmental Primary Health Centers in Gaza Strip**

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Jerusalem – Palestine

1441 / 2020

Dedication

I dedicate this work to:

My mother,

My husband,

My brothers and sisters,

My sons and my daughter

Lastly, not least, I would like to express my dedication for all those who contributed in the completion of this study.

Fadia Jouda

Declaration

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

Signature:

Fadia Jouda

Acknowledgement

All praises to Allah and blessing him for supporting me in the completion of this thesis. I thank God for all the opportunities, trials and strength that have been showered on me to finish writing the thesis

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Fadia Jouda

November, 2019

Abstract

Postnatal care (PNC) is the care given to the mother and her newborn baby immediately after the birth and for the first six weeks of life. Basic care for all newborns care includes breastfeeding, immunization, thermal care, cord care, eye care, and recognition of dangerous signs. A descriptive, cross-sectional study was conducted to assess the knowledge and practices of postnatal primiparous mothers towards newborns care at governmental primary health centers in Gaza strip. A mixed of two techniques was considered as a sampling plan for this study; through which a combination of cluster sampling method, and consecutive sample design were used to recruit 345 primiparous mothers from 7 random selected primary health care centers (Jabalia, Sabha Al harazeen, Al Rimal, Al Zaitoon, Deer Al Balah, Khanyounis and Rafah clinics) to represent the five Gaza governorates. The response rate was 99%. A pilot study on 21 mothers was done to explore the appropriateness of the study instruments. Data were collected by using interviewed-questionnaire at the time of BCG administration and time of immunization of neonatal at the 1st month. Data were analyzed using SPSS version 22 for data entry and analysis. An administrative and ethical approvals were obtained from Al-Quds University and Helsinki Committee respectively. Reliability coefficient of the study instrument was reported as good reliability (Cronbach's alpha 0.74). The results showed that the mean age of participants were young age (22.17 ± 4.25 years), mean age of their babies 18.60 ± 11.7 days, 96.8% housewives, 80.0% have family income less than 1000 Shekels, 61.2% have secondary school, 39.1% live in Gaza governorate, 82.9% live in nuclear family, and 75.4% received information about care of newborn. The results also indicate that the overall knowledge score about care of newborn was 72.75%, that 62.9% of study participants classified as a moderate level (60 - 80%), 22.3% high level (>80%), and 14.8% low level (<60%) of knowledge. The overall average of practicing proper newborn's care was 84.9%, that 73% of the participants classified as high level, 25.5% moderate level, and 1.5% low level of practice. Furthermore, the results showed that there was a statistically significant correlation ($r = 0.587$, $p < 0.001$) between knowledge and practice of newborns' care among primiparous mothers and statistically significant differences in levels of knowledge about newborn care related to age of the mother, age of the baby, and health care center; while there were no statistical significant differences in levels of knowledge related to mothers' work, family income, level of education, and receiving information. On other hand, there were statistically significant difference in levels of practice of proper newborn care and maternal receiving of information, while there were no statistically significant differences in other variables were reported. The present study conclude that the primiparous mothers have a moderate level of knowledge and high practice about care of their newborns. Thus, it's recommended to increase the mothers' awareness toward newborn care via education program that coupled with effective health care delivery.

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List of Abbreviation

BCGCI	Bacilli Chalmette GuerinConfidence Interval
DPT	Diphtheria Pertussis Tetanus
GS	Gaza Strip
HRD	Human Resources Development
MCH	Mother and Child Health
MoH	Ministry of Health
NGOs	Nongovernmental organizations
NIS	New Israeli Shekel
NNJ	Neonatal Jaundice
OPV	Oral Polio Vaccine
PCBS	Palestinian Central Bureau of statistics
PHC	Primary Health Care
PNC	Postnatal Care
PPP	Postpartum (postnatal) period
SPSS	Statistical Package for Social Sciences.
STIs	Sexually Transmitted Infections
UNRWA	United Nations Relief and Works Agency for Palestinian Refugees in the Near East
WB	West Bank
WHO	World Health Organization

Chapter One:

Introduction

1.1 Background

The mother's knowledge and practices play a crucial role in safe guarding and enhancing the newborn adaptation to new environment. Newborns are considered to be tiny and powerless, and completely dependent on other. Babies care is used by all those who interact with the neonate including the health care provider and mother and encompass breastfeeding, cord care, eye care, thermoregulation, immunization and care of the low birth weight infant. The majority of neonatal deaths occur at home where neonates lack appropriate care and mothers were lack of appropriate knowledge about their newborn caring (WHO, 2013).

The optimal development of newborn depends on the health and development of growing process, particularly in the first month of a baby's life as considered a most critical period. Over 80% of the new born babies require minimal care, which can be provided by the mother under the supervision of basic health supervisor (Kligman, 2016).

Mother is the primary care giver to provide newborn care, which one of the most critical issues felt by the researcher, is that mothers could lack of sufficient knowledge and practices about caring of their babies.

Primiparous mothers should be aware of all the components of babies' care to reduce the mortality rates and improve the health of their newborn. There are number of interventions in the essential newborn care module which can be practiced by the mother such as prevention of infection by proper hand washing, thermal protection by keeping the neonate warm early and exclusive breast feeding (Castalino, Nayak, and D'Souza, 2014). Thus, this study entailed to assess the level of knowledge and practice of mothers regarding the newborns care at governmental primary health centers in Gaza strip.

1.2 Problem statement:

Newborns care remains an important issue for ensuring optimal growth and development. The quality of this care depends basically on the knowledge, skills and clinical practices of mother toward their babies; particularly if this baby is the first. On the other hand, from the researcher's observation, primiparous mothers often rely on information from parents, relatives, habits, and heritage rather than scientific information, and thus may lack of essential knowledge and practices about optimal caring of their babies as this these deliveries considered the first experience for them, which might reflected negatively on the babies health. Therefore, this study takes place to assess the knowledge and practices of the primiparous mothers towards their newborns' care at governmental primary health centers of Gaza strip.

1.3 Justification:

Worldwide, neonatal mortality is still a major cause of infant deaths which can be prevented by performing the simple and effective WHO recommendation on essential newborn care practices (WHO, 2014). Several studies conducted worldwide have shown poor maternal knowledge and negative attitude and practices on essential newborn care and demonstrated that health information optimizes mother and newborn health; promote healthy behavior and health household practice (Okech, 2014; and Sines et al., 2007). Furthermore, up to the researcher's knowledge, in Gaza strip there is no previous published study spotting the light on the knowledge and practices of postnatal primiparous mothers towards their newborns care. Therefore, this study takes place as the first one of its kind in Gaza strip to identify the gaps in the knowledge and practices of primiparous mothers regarding the care of their newborns after birth.

1.4 Purpose of the study

The main purpose of this study is to assess the knowledge and practices of postnatal primiparous mother towards their newborn care (breastfeeding, thermoregulation, eye care, immunization and etc.) at governmental primary health centers in Gaza strip.

1.5 Specific objectives: -

1. To determine the level of primiparous mother knowledge towards their postnatal newborns' care at governmental primary health centers in Gaza strip.
2. To identify the degree of proper primiparous mothers' practices towards their postnatal newborns' care
3. To examine the relationship between primiparous mothers' knowledge and their practices towards newborns' care
4. To determine the differences in mothers' knowledge and practices towards newborns' care that related to the selected sociodemographic factors
5. To suggest recommendations for improving the knowledge and practices of postnatal primiparous mothers about newborns' care

1.6 Research questions:

1. What is the level of knowledge of postnatal primiparous mothers about newborns' care at Governmental Primary Health Centers in Gaza Strip?
2. What is the degree of practicing proper newborn care among postnatal primiparous mothers?
3. What is the relationship between primiparous mothers' knowledge and their practices towards newborns' care?
4. What is the relationship between the selected sociodemographic characteristic of primiparous mother and their levels of knowledge and practices about care of their newborns?

5. What are the recommendations that is necessary to improve the knowledge and practices of primiparous mothers about care of their newborns?

1.7 Theoretical and Operational Definitions:

- **Knowledge:** refers to the facts, information, and skills acquired through experience or education the theoretical or practical understanding of a subject (Oxford Dictionary, 2017). In this study, the researcher assesses the mother's knowledge about care of their newborn by questionnaire (yes/no questions). The level of knowledge divided into three levels: -
 - ✓ Low level of knowledge (total score less than 60%)
 - ✓ Moderate level of knowledge (total score 60 – 80%)
 - ✓ High level of knowledge (total score more than 80%)
- **Practices:** It's referred to the actions performed by the person and application or use of an idea, belief, or method, as it is an opposed to theories (Khairulnissa and Salima, 2011). In this study, practices refer to the care performed by the primiparous mothers to their newborns, which was measured by self- report method (asking the mother subjectively to report the action done or not done). The maternal level of practices divided into 3 levels:-
 - ✓ Low practices level (total score less than 60%)
 - ✓ Moderate practices level (total score 60 – 80%)
 - ✓ High practices level (total score more than 80%)
- **Primiparous:** refers to a mother who had completed pregnancy to the period of viability (20 weeks of gestation) for the first time regardless of whether the infant was living at birth or whether it was a single or multiple birth (Chapman, and Durham, 2014). In this study primiparous refers to the mother who is delivered a live baby for

the first time and follows up with his/her newborn at one of the selected post-natal governmental centers.

- **Newborn care:** refers to the information and practice gained by the mother in regard to care of their newborn, which is focused on thermal regulation, breastfeeding and prevention of infection (Meharban, 2015). In this study it refers to the information and practice of the mother in regard to the pre-mentioned components, that measured by self-report questionnaire.
- **Postnatal:** refers to the period from birth to six weeks after delivery (WHO, 2013). In this study, it refers to the period that extends from a day of follow-up at selected clinics till the time of data collection on the day of administering Bacilli Chalmette Guerin BCG) vaccine.

1.8 Boundaries of the study:

- **Conceptual boundary:** assessment of the gap in knowledge and practices of primiparous postnatal mother towards newborn care.
- **Setting boundary:** the study was conducted at postnatal care clinics at governmental primary health center in Gaza strip; namely: Jabalia, Sabha Al harazeen, Al Rimal, Al Zaitoon, Deer Al Balah, Khanyounis and Rafah clinics.
- **Temporal boundary:** the whole study is proposed to be applied in a period of February, 2019 till November, 2019.
- **Population boundary:** primiparous mothers - the first 6 week after delivery who visited governmental postnatal clinics in Gaza strip during the time of data collection.

1.9 Context of the study:

1.9.1 The Sociodemographic context

The location of Palestine is at the eastern coast of the Mediterranean Sea. Palestine is located to the south of Lebanon and to the west of Jordan. The Gaza Strip (GS) is a coastal strip of land along the Mediterranean Sea, bordering Egypt on the South –west, it is about 41 Kilometers long and between 6 and 12 Kilometers wide, with a total area of 360 square Kilometers. According to updated Palestinian Central Bureau of statistics (PCBS) census in (2018), the population of Palestine was 4,705,601 million; of whom 2.46 million were males compared to 2.38 million were females, out of this number the West Bank (WB) population was 2. 8 million, while GS population was 1.93 million (PCBS, 2018).

1.9.2 Health Care System

The main parties that offer health services are the Ministry of Health (MoH), nongovernmental organization (NGOs), United Nations Relief and Works Agency for Palestinian Refugees in the Near East (UNRWA), the military health services, and the private sector (MoH, 2017).

Primary health care centers by health providers sectors

The number of Primary health care (PHC) centers in Palestine reached to 732 in 2018, of which 585 are in WB and 147 in GS. 468 PHC centers belong to Palestinian MoH, which constitutes centers managed by Non govern Organizations (NGOs) reached 182, constituting 24.9% of all primary health care facilities, while the number of UNRWA centers reached 65, and the military medical center reached to 17 centers (MoH, 2018).

Primary health care centers level

The number of PNC centers of MoH in Palestine increased from 203 in 1994 to 468 in 2018 with variation rate of 130.5%, the MoH classified PHC centers into four levels of

which 61 clinics are level one, constituting 13% of the total centers of MoH and 246 clinics are level two, accounting for 52.6% of total clinics, 128 clinics were classified as level three 24.4% of total centers and 28 clinics are level four, 6% of the total centers. In addition, four PHC mobile clinics provided health services in Jerusalem, Beth Lethem and Yalta, these four mobile clinics constitute 1.1% of total clinic (MoH, 2018).

Proportion distribution of PNC in registered PHC centers

The total number of visits by mothers to maternal and child centers in 2018 were 20,699 visits per physician at 27.8% of the reported live births and 60,420 visits per nurse at 81.2% of reported live births (MoH, 2018).

The selected PHCs in the current study

The study was conducted at governmental primary health care centers in Gaza strip; namely Jabalia, Al Rimal, Al Zaitoon, Sabha Al Harazeen, Deer AL Baleh, Kha Younis, Rafah clinics which classified as third and fourth level centers according to MoH classification (2018). In Gaza strip, there are 55 governmental primary care clinics. These clinics provide several health services to all citizens in the residential area of the clinic; that 27 of which are providing postnatal care; the given services can be summarized as follows (MOH, 2017): -

Pregnant women care:

- Take folic acid and follow healthy behavior before pregnancy.
- Follow-up of the pregnant mother throughout the pregnancy
- Referral of pregnant women with diseases to specialist secondary care for follow up.
- Perform ultrasound to check fetal health, location of the placenta.
- Breastfeeding services

Postpartum mother care:

- Ensure that the mother returns to her previous health status.
- Encourage follow-up breastfeeding.
- Identify contraception that is appropriate for the women
- Discuss maternal health issues, health of the child and the family.
- Address the remaining health complications after pregnancy.
- Early detection of symptoms of postpartum depression.

1.10 Layout of the study

This study consists mainly of five chapters: introduction, conceptual framework and literature review, methodology, results and discussion, and lastly conclusion and recommendations.

The first chapter presented introduction to the study, where a brief background regarding the subject of the study was provided. The researcher illustrated the research problem, justification for conducting the study, goal and objectives of the study, questions of the study, theoretical and operational definition of the study, boundaries of the study, and context of the study.

The second chapter consisted of two parts: the first part was the conceptual framework where the researcher provided a diagram of the conceptual framework of the study variables. The second part was the literature review related to the study topic. In-depth detailed theoretical inquiry including previous studies was presented.

The third chapter described material and methods including study design, population, sample, setting of the study, period of the study, eligibility criteria, and instruments of data collection, pilot study, data entry and statistical analysis, ethical considerations, and limitations of the study.

The fourth chapter presented the results and discussion. The researcher treated the results in the form of tables and figures to make it easy for the reader to understand. The results were discussed and compared with available published previous studies that related to the topic of this study and its objectives.

The fifth chapter presented conclusion, and recommendations including suggestions for further studies.

Chapter Two:

Conceptual Framework and Literature Review

This chapter includes two main parts; the first one is the conceptual framework; where the researcher provides a diagram of the conceptual framework of the study, and the second part is the literature review that related to the topic of study

2.1 Conceptual Framework

The below conceptual framework (Figure 2.1) used to guide and direct the research process. The diagram denotes that the newborns care related to different factors including socio demographic characteristics (age of the mother, clinic name, marital status, educational level, occupation, income, governorate and age of the baby at data collection), knowledge, and practice of primiparous mothers.

The researcher assumed that there are differences between primiparous maternal knowledge and practices that relies to these presumed factors. It is obvious to say that adequate knowledge is important factor, but should be reflected in primiparous postnatal women practice during essential newborns care.

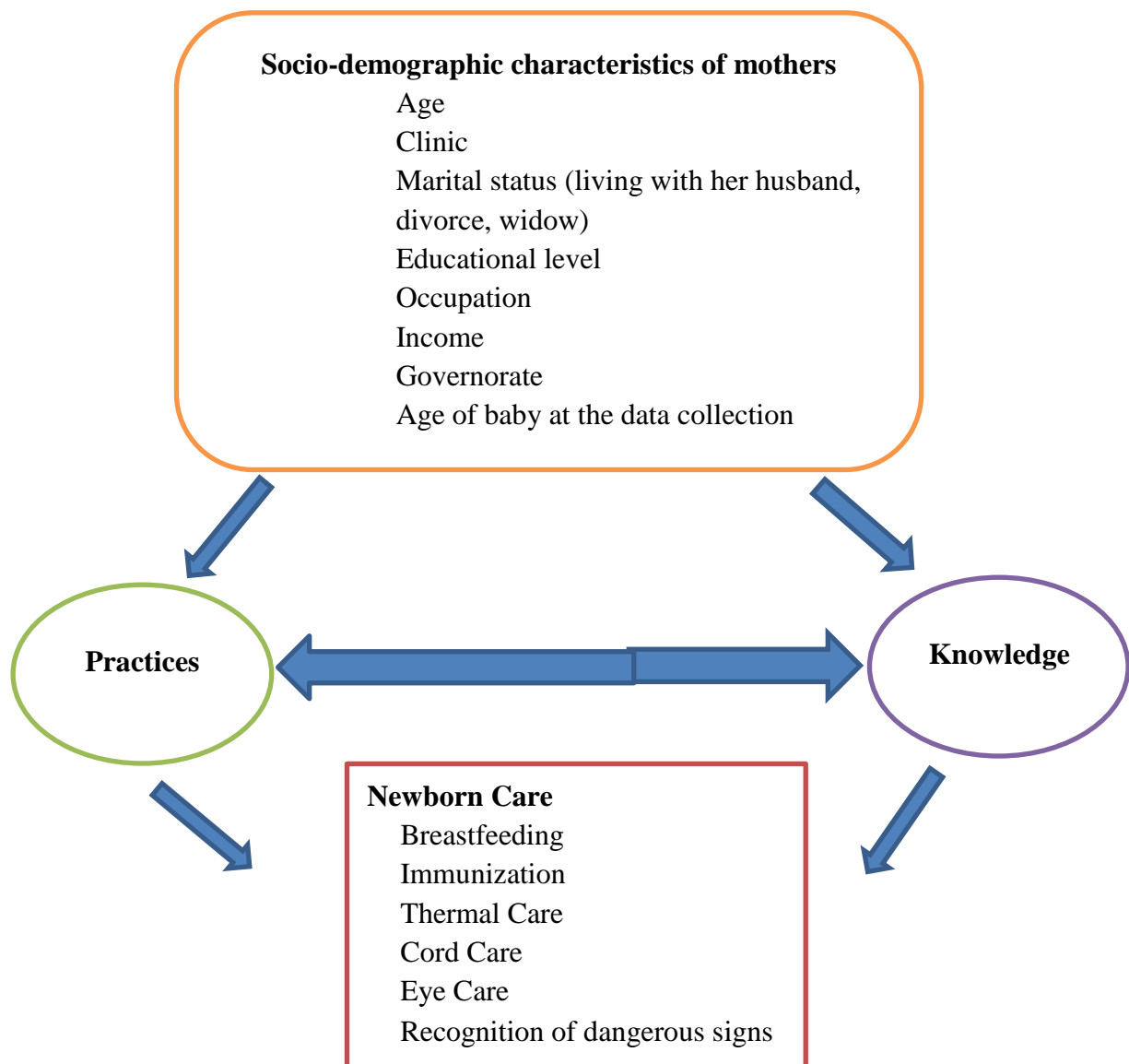


Figure (2.1): Diagram of conceptual framework (self-developed)

Selected sociodemographic characteristics

A cross-sectional study was conducted among 302 randomly selected mothers in an upper Himalayan region of Nepal. Mothers were interviewed using semi-structured questionnaire to categorize newborn care knowledge and practices. Multivariate logistic regression was used to identify factors associated with the newborn care knowledge and practices. The results showed that 147 (48.7%) of the mothers were found to have inadequate knowledge of newborn care, while 102 (33.8%) mothers had reported unsatisfactory newborn care practices. Mothers with at least secondary level of formal education were more likely to possess adequate newborn care knowledge compared to mothers who never attended school (AOR at 95%, CI: 1.82–13.33). Mothers whose first pregnancy occurred between the ages of 20–24 years (AOR 3.89 at 95% CI 1.81–8.37) were also more likely to possess adequate newborn care knowledge, compared to mothers with a younger age at first pregnancy (Singh et al., 2019). The same as in Pakistan, a cross-sectional study was conducted that aimed to assess the knowledge, attitude, and practices among mothers about newborns' care and its related factors. The sample of the study consisted of 518 mothers by using multi-stage cluster sampling. Data collected by using structured questionnaire. The results also showed that mothers with no education had less significant knowledge and practice about newborn care as compared to those who had higher education (Memon et al., 2019).

In Morocco, a cross-sectional study using both qualitative and quantitative methods was conducted with mothers of Casablanca. Educational achievement and occupational class were used as indicators of socio-demographic status. The results showed a significant relationship between exclusive breastfeeding and the mother's education ($P < .001$) and socio-economic status ($P < .001$) has been highlighted. Moreover, a strong significant

association was found between maternal employment and exclusive breastfeeding (Habibi, 2017).

In India, a study was conducted to determine the knowledge and existing practice of the postnatal mothers regarding personal hygiene and newborn care and to find out the association between the knowledge and practice of postnatal mothers with the selected demographic variable, age, education, occupation, and family. A total number of 60 postnatal mothers were selected by random sampling method in order to assess their knowledge and practice. Out of them, 38 (63.3%) were between the age of 21-25 years, 17 (28.3%) were between the age of 26-years. Regarding education 38 (63.3%) were studied primary school, 10 (16.7%) were studied middle and high school, 8 (13.3%) were had higher secondary and 4 (6.7%) were graduates and others. Most of them 39 (65%) were housewives, 42(70%) were having inadequate knowledge and 18 (30) were having moderately adequate knowledge and none had adequate. About their practice, 38 (63.3%) were having poor practice and remaining 22 (36.7%) were having satisfactory practice and none had good practice. There was statistically significant association between the mother's knowledge with the age, education and family type $P=<0.05$, $P=<0.001$ and $P=<0.01$ respectively (Missiriya, 2016).

Another study showed that the incidence of early initiation of breastfeeding in mothers less than 21 years of age was 29.4%, 24.6% in illiterate mothers and 25% in those delivering by caesarian section. Early initiation of breastfeeding was maximum (46.7%) in the first and minimum (24.3%) in the third shift of work of health care worker. Lack of adequate information, maternal education level, socioeconomic factors influences the early breastfeeding practices (Bhatt et al., 2012). The same as a cross-sectional study was conducted at a tertiary care hospital in Karachi, Pakistan to assess newborn care knowledge and practices among mothers in relationship with family income. The study found that the family income

of Rs. 10,000 (USD120) or less/month and maternal education level of primary or less were significantly associated with unhygienic cord care and kohl application to the newborn's eyes. poor cord care and discarding colostrum (Gul et al., 2014).

Other cross-sectional study carried out in India aimed to assess the level of knowledge regarding essential new born care among the mothers. The sample of the study consisted of 100 mothers selected by simple random sampling. The results showed that mean age of mothers was 25 years, 67% studied up to 10th standard and 18% studied up to plus two levels, and 44% of mothers received information on newborn care from health workers and 36% received information from family members (Rama, Gopalakrishnan and Udayshankar, 2014).

Moreover, in India a descriptive correlational survey was conducted that aimed to assess knowledge and practice of postnatal mothers on newborn care. The sample of the study consisted of 30 mothers, and data collected by using valid, reliable, structured knowledge and practice questionnaire. The results of the study showed that most of the sample (80%) were in the age group 21-30 years, 53.3% were primiparous, 63.3% belonged to joint family, 56.7% lived in a rural area, and 56.7% were housewives. The results also indicated that education of the mothers had statistically significant association with the knowledge about newborn care (Castalino, Nayak, and D'Souza, 2014).

2.2 Literature Review

2.2.1 Background

Postnatal period is a six-week interval between birth of a new born and the return of the reproductive organs to their normal non pregnant state (Chapman, and Durham, 2014). It is a vulnerable time because most maternal and new born deaths occur during this period. Postnatal period is considered a critical phase in the lives of mothers and newborn babies (WHO, 2015). The optimal development of newborn depends on the health and development of growing process, particularly in the first month of a baby's life as considered a most critical period. Over 80% of the new born babies require minimal care, which can be provided by the mother under the supervision of basic health supervisor (Kligman, 2016).

Primiparous mothers should be aware of all the components of babies' care to reduce the mortality rates and improve the health of their newborn. There are number of interventions in the newborn care which can be practiced by the mother such as prevention of infection by proper hand washing, thermal protection by keeping the neonate warm early and exclusive breast feeding (Castalino, Nayak, and D'Souza, 2014).

2.2.2 Postnatal period

According to WHO (2015) definition, the postpartum (or postnatal) period (PPP) begins immediately after the birth of a child as the mother's body, including hormone levels and uterus size, returns to a non-pregnant state. The terms puerperium, puerperal period or immediate PPP were commonly referred to the first 6 weeks following childbirth. World health organization (WHO) describes the postnatal period as the most critical and yet the most neglected phase in the life of the mothers and babies, as the most maternal or/and newborn deaths were occurred in the postnatal period.

2.2.3 Postnatal Care

It is an important link in the continuum of care for maternal and newborn health. The postnatal care is critical as most maternal deaths occur during this time. in the first six weeks (WHO, 2015). Postnatal care (PNC) is a comprehensive care of mother and newborn, provide comprehensive and evidence-based postpartum. This includes education on breastfeeding and family planning, and provision of contraceptive services, as well as provision of or referral for lactation support and for bereavement care after miscarriage, stillbirth, neonatal and/or maternal death (Hug, 2018). Basic newborn care should include promoting and supporting early and exclusive breastfeeding, keeping the baby warm, increasing hand washing and providing hygienic umbilical cord and skin care, identifying conditions requiring additional care and counseling on when to take a newborn to a health facility (WHO, 2014).

Normally, after delivery are critical for monitoring complications that may arise during this time. This is the main reason why a postnatal and PPC visit is ideal during this time to educate a new mother on how to care for herself and her newborn as they tend to value child than self (Neupane and Doku, 2013).

The total number of visits by mothers to maternal and child health centers in 2018 were 20,699 visits per physician at 27.8% of the reported live births and 60,420 visits per nurse at 81.2% of reported live births (MoH, 2018).

2.2.4 Maternal knowledge and practices about newborn's care

There are a lot of the studies related to measure the knowledge and practices of postnatal mothers towards newborns' care were conducted. A descriptive study carried out in Mekelle City, Northern Ethiopia aimed to assess knowledge and practice of mothers on Newborn Care in urban communities. A total of 456 postpartum mothers. They were

interviewed using a structured questionnaire. Mothers who responded correctly to at least 75% of the knowledge and practice questions were considered to have good knowledge and practice. The study result showed that 36.1% of mothers had good knowledge and 81.1% had a good practice about the essential newborn care. Newborn care practice was positively associated with those mothers who were educated during delivery and postpartum (Berhea, Belachew, and Abreha, 2018).

A descriptive study in Jordanian is to determine the traditional practices adopted by mothers when caring for their infants in rural areas. 30 mothers were recruited from four rural regions in outskirts of Amman the capital city of Jordan. The results showed that mothers had traditional infant's care practices pertinent to bathing of babies, including the salting, swaddling, care of the umbilical cord and jaundice (Alsagarat and Al-Kharabsheh, 2017). Also, in South Sudan, a descriptive cross-sectional study among 384 postnatal mothers was conducted to identify the gap in the knowledge and practices of essential newborn care among postnatal mothers at Juba Teaching Hospital. By using consecutive sampling, the study results showed that 90% knew about breastfeeding on demand and 74% about exclusive breastfeeding. Also 18.2% of mothers knew the cord should be cared for while uncovered; 90% used warm clothing and 33% for thermoregulation, 20.8% identified BCG and OPV as birth vaccines, and 3.4% believed vaccines were harmful. Hypothermia was the danger sign least frequently (41.4%) identified by the mothers (Mesekaa, Mungaib, and Musokec, 2017).

A cross sectional study was carried out by Monebenimp et al. (2013) in four health facilities in Garoua city of Northern Cameroon, that 347 mothers were interviewed using a standard questionnaire. Sociodemographic data were collected and information was gathered on cord care, thermal care, breastfeeding and vaccines. The main outcome was

good practices of essential neonatal care, and use of sterile material for cutting umbilical cord was reported by 307 (88.5%) mothers and 5 (1.4%) said they received information on newborn's danger signs. On other hand, the study results showed that the traditional substances were applied on the cord by 188 (54.2) mothers while eye care without any eye disease was continued for 2 to 7 days by 194 (85.4%) mothers. Six hours delayed first bath was given by 244 (70.3%) mother sand breastfeeding within one hour by 154 (44.3%). BCG and oral Polio vaccine were received by 315 (90.8%) and 316 (91%) newborn respectively. This study revealed that mothers were not knowledgeable on danger signs and they had poor practice on breastfeeding, eye care and cord care.

In Nepal, a descriptive study carried out among 100 purposively selected post-natal mothers admitted in Teaching Hospital. Newborn care practice was observed among 20 mothers via semi-structured interview questionnaire and observation checklist respectively. The results showed that the respondents' mean knowledge was on keeping newborn warm 44.2, on newborn care 47.2, on immunization 67.33, and on danger signs 35.63. All (100%) respondents had have knowledge and practice to feed colostrum and exclusive breast feeding (70%) knew about early initiation of breastfeeding. Although (60%) had knowledge to wash hands before breastfeeding, and after diaper care, only (10%) followed it in practice. Mean practice of successful breast feeding was 37.5. Therefore, the study declares that postnatal mothers have an adequate knowledge on areas like early, exclusive breast feeding, colostrum feeding, and they have not much satisfactory knowledge in areas like hand washing, and recognition of danger signs (Shrestha et al., 2013).

Furthermore, a cross sectional study carried out by Amolo, Irimu and Njai (2017) in East Africa in Kenya 380 postnatal mothers in Kenyatta National Hospital, that aimed to assess maternal knowledge on selected components of essential newborn care: breastfeeding, cord

care, immunization, eye care and thermoregulation Interviews were conducted using structured pretested questionnaires. The results showed that identification of thermoregulation modes (7%), warm room (4%) and warm clothing (93%).

A cross sectional study was carried out by Kebede aimed to assess the knowledge, attitudes, and practices of newborn care among postnatal mothers in Ethiopia. The sample of the study consisted of 414 mothers. The results showed that 55.3% of mothers had good knowledge and 60.6% had a good practice of newborn care. The results also indicated that age of the mother and occupation have significant association with knowledge and practice, and overall knowledge have a significant relationship with practice of newborn care. (Kebede, 2019).

In India, a study carried out to assess the knowledge and practice of postnatal care among primiparous mothers at Aravindan hospital Coimbatore. The researcher used one group pre-test post-test experimental design in the study. The sample of the study consisted of 35 mothers selected by non-probability, convenient sampling technique. The data was collected by structured questionnaire. The results showed that the pre-test score was less in knowledge and practice regarding postnatal care among prim mothers. Education was given about various aspects of postnatal care. The findings revealed that there was improvement in the posttest knowledge and practice scores. Also, there was a positive correlation was between knowledge and practice scores. There was a significant association between age, education, sources of information regarding postnatal care, and area of residence with the level of practice scores in the post test (Indu, 2016).

A study was conducted in Ethiopia that aimed to assessing newborn care practice and factors associated with them. The sample of the study consisted of 539 mothers. Structured and pretested questionnaire was used for data collection via face to face interview. The

results showed that 40.6% of mothers had good practice of newborn care. The good practice of newborn care was higher among urban residents, and among those who had high school and above. The results also showed that knowledge about first breast feeding time, and first bathing time were significantly associated with good newborn care practice (Tewodros et al., 2015).

In India, a cross-sectional survey carried out to assess newborn care practices among 320 mothers by using semi-structured questionnaires on the six safe newborn care practices; namely safe breastfeeding, keeping cord and eyes clean, wrapping baby, kangaroo care, delayed bathing and hand washing. The results showed that 60% of mothers adopted less than three safe practices; wrapping newborns (96%) and delayed bathing (64%) were better adopted than cord care (49%), safe breastfeeding (48%), hand washing (30%), kangaroo care (20%) and eye care (9%). Cultural beliefs and traditional birth attendants influenced the mother's practices (Sinha et al., 2014)

In Iran, a cross-sectional study was conducted that aimed to assess the Knowledge regarding to neonatal care among postnatal mothers. The sample of the study consisted of 316 mothers by using convenient sampling method. The results showed that mean age of mothers was 25.87 years, 8.2% of mothers had poor knowledge, 78.5% moderate and 13.3% had good knowledge. Also, urban mothers, less than 24 year of age, and higher level of education were significantly associated with higher knowledge score (Sharafi and Esmaeeli, 2013).

In Tanzania, a cross-sectional, retrospective study was conducted that aimed to assess the practice of newborn care. The results showed that over half of mothers reported drying the baby and over a third reported wrapping the baby within 5 minutes of delivery. The results also showed that about two-thirds reported bathing their babies within 6 hours of delivery,

and 28% reported putting something on the cord to help it dry. Skin-to-skin contact between mother and baby after delivery was rarely practiced. Although 83% of women breastfed within 24 hours of delivery, only 18% did so within an hour, and less than half of mothers exclusively breastfed in the three days after delivery (Penfold et al., 2010).

2.2.5 Elements of Newborn's Care

- **Cleanliness and umbilical cord care**

Umbilical cord is considered a life line that connects fetus to placenta, that after birth the umbilical cord is clamped and cut, it dries and falls off in five to fifteen days. Post-delivery, this line become a source of infection in the first few days of life due to unhygienic cord care practices including cord cutting and tying (WHO, 2014). Many studies showed various substances including cow dung, ash, oil and butter commonly applied on the umbilical cord in order to promote healing (Sultana et al., 2008), while Dore et al. (2014) recommended that the best practices to keeping the cord clean and dry is achieved without applying anything. After the umbilical cord separates minimal discharge is expected, therefore the area should be kept clean and dry to promote healing. A study conducted on 307 mothers in an urban slum in Nairobi found that most mothers (91%) knew the need for hygiene during cord cutting, only 28% knew about hygiene while tying the cord, 79% of mothers were afraid of handling the unhealed cord and less than 50% had good knowledge on postnatal cord care (Okech, 2014).

In Karachi of Pakistan, a cross-sectional study was conducted at the tertiary care hospital. Among 170 mothers attending the Pediatric Out Patient Department, there were 74% reported applying various substances like coconut oil, mustard oil, purified butter and turmeric to the cord stump. Kohl application to newborn's eyes was 68%, while 86% reported first bath within 24 hrs. of birth and 48% mothers were initiated breastfeeding within 2 hours of delivery. Colostrum was discarded by 43% and prelacteal feeds given by

73%. Exclusive Breast-feeding rate was 26%. Family income of Rs. 10,000 (USD120) or less/month and maternal education level of primary or less were significantly associated with home delivery, unhygienic cord care and kohl application to the newborn's eyes. Home delivery was a risk factor for poor cord care (OR=4.07) and discarding colostrum (Gul et al., 2014).

In Pakistan, a cross sectional study was conducted to assess knowledge, attitudes and practices of women of reproductive age in rural Pakistan. The sample of the study consisted of 1490 mothers. The results showed that prevalence of newborn care practices ranged between 32% (early bathing of newborn) and 69% (use of traditional cord applications). Antenatal care services were identified as a strong predictor of good newborn care after controlling for socio-economic status, age of mother and sex of infant (Memon et al., 2013).

In Ethiopia, Callaghan-Koru et al. (2013) conduct a household survey, aimed to assess newborn care practices among mothers who delivered a live baby. Two-stage cluster sampling was used selection of study participants. The results showed that common newborn care practices included exclusive breastfeeding (87.6%), wrapping the baby before delivery of the placenta (82.3%), and dry cord care (65.2%), bathing during the first 24 hours of life (74.7%), and application of butter and other remedies to the umbilical cord (19.9%).

- **Thermoregulation**

Thermoregulation in neonates is one of the biological adjustments taking place at birth to maintain normal body temperature of 36.5-37.5°C. WHO defined hyperthermia as axillary temperature above 37.5°C and hypothermia below 36.5°C, and thus the newborn regulates temperature much less efficiently than adult and loses heat more easily; that low birth weight and premature infants are at greater risk. Hypothermia is a life-threatening condition

leading to neonatal mortality; therefore, prevention and management of hypothermia are the key interventions for reducing neonatal morbidity and mortality. Heat loss occurs through conduction, convection, radiation and evaporation (WHO, 2014). A study conducted in Sri Lanka found that 63% of babies had experienced hypothermia and 65% of mothers had knowledge about its preventive method while 35% had very poor practice application (Rachitha et al., 2014). Thermal care of newborns is one of the recommended strategies to reduce hypothermia, which contributes to neonatal morbidity and mortality, study done drying and bathing practices in Malawi and Bangladesh the results indicate high levels of immediate drying/drying within 1 hour in Malawi (87%). In Bangladesh, 84% were dried within the first 10 minutes of birth. Bathing practices varied in the two settings; in Malawi, only 26% were bathed after 24 hours but in Bangladesh 74% were bathed after the same period. Also, in Bangladesh there were few newborns who were never bathed (less than 5%). In Malawi, over 10% were never bathed. Therefore, the findings reveal gaps in coverage of thermal care (Khan et al., 2018).

- **Immunization**

Immunization is the process whereby a person is made immune or resistant to an infectious disease by administration of vaccine. It is the most effective public health intervention that reduces morbidity and mortality from vaccine preventable diseases (WHO, 2014). A study done in Kenya revealed that 17.8% of postnatal mothers identified BCG, OPV, DPT, measles vaccine preventable against tuberculosis, poliomyelitis, diphtheria, tetanus, pertussis and measles at birth and 7% of postnatal mothers still believed vaccines are harmful (Amolo, Irimu and Njai. 2017). Uptake of vaccination services is dependent on several factors including knowledge and attitude of the mothers, that good knowledge and positive attitude of the mothers on immunization contributes to the achievement of immunization high rates. In Gaza strip, the immunization coverage reaches 99.8% (MoH, 2016).

- **Breastfeeding**

Breastfeeding have a benefit to both mother and the newborn. For mother, the immediate breast feeding stimulates uterine contraction and delivery of placenta therefore preventing postpartum hemorrhage and for the newborn early breastfeeding provide nutrition, warmth and colostrum which contains immunological factors that prevent infections (Abedi et al. ,2016).

A cross-sectional descriptive study was carried out in India among randomly selected postnatal mothers at well baby clinics in Community Health Centre. Data were collected through interview using a semi-structured questionnaire. The Results showed that very less percentage of postnatal mothers having knowledge about early breastfeeding, exclusive breastfeeding, burping, breast feeding on demand, and not to give pre lacteal feeding. More than 50% of postnatal mothers having knowledge about colostrum being essential for health, breastfeeding creating bonding, and <20% had knowledge of breastfeeding prevent diseases affecting breast. Regarding practice of breastfeeding, more than 50% of postnatal mothers had given colostrum and pre lacteal feeding and feeding bottles still practiced. Also, less than 10% of postnatal mothers started early breastfeeding (within 1 hr.), <40% still started late supplementary feeding and only <20% started breastfeeding on demand. There is poor knowledge, and faulty practices regarding all attributes of breastfeeding among postnatal mother (Bashir, Mansoor, and Nakioo, 2018).

Other study done in Pakistan showed less than half of the mothers (48%) initiated breastfeeding within two hours of delivery and colostrum was discarded by 43% of mothers (Gul et al., 2014). Another across sectional study carried out in Vadodara (India). The study conducted in 175 Postnatal mothers from the maternity wards of a tertiary care hospital in Vadodara city. Mothers were interviewed within 5 days after the birth of the child. The results showed that the most common causes of delay in initiating breastfeeding were

caesarian section and fatigue (29.7% and 21.1% respectively), while 32.6% of mothers initiate breastfeeding within one hour of delivery. Almost all mothers knew of breast feeding on demand, exclusive breastfeeding and colostrum use. Only 4 mothers knew no substances should be applied to the cord. Knowledge gaps existed regarding cord care, eye care, and immunization. Mothers had good knowledge on breastfeeding practices (Amolo, Irimu and Njai, 2017).

- **Recognition of dangerous signs**

Early detection of the neonatal illness is an important the improving newborn survival. A descriptive, cross-sectional study carried out to assess the practice of mothers to recognize neonatal danger signs and various household practices followed by mother to identify and to treat danger signs. The sample of the study consisted of 100 postnatal mothers selected by convenient sampling technique. The results also showed that practice level was high among 90.56% of the postnatal mothers regarding neonatal danger signs. There was statistically no significant association between practice score and selected personal variables of the mothers regarding neonatal danger signs (Thakur et al., 2017).

The same as, a study revealed moderate knowledge score of Egyptian mothers in most domains, although the majority of them were illiterate or had low educational attainment. In terms of knowledge, 52.3% of participants had adequate knowledge about neonatal jaundice in the aspects of awareness, risk factors, management, and complications. Almost all participants exhibited moderate (89.8%) and high levels (10%) of positive attitudes toward Neonatal Jaundice (NNJ). Maternal sociodemographic factors influenced knowledge level, attitudes, and behaviors related to NNJ in Egypt. Working mothers and those residing in urban areas were significantly more knowledgeable ($P = 0.023$ and 0.021 , respectively), and attained higher attitude scores ($P < 0.001$ and $P < 0.001$, respectively) than housewives and rural ones. Moreover, significantly higher attitude scores ($P < 0.001$)

were attained by those who had completed their university or postgraduate education (Moawad et al. 2016). Another community survey study done in south-western Uganda showed poor knowledge on key newborn dangerous signs where 58.2% of mothers could only identify 1 and 14.8% could identify 2 danger signs. Poor knowledge also associated with delay in care seeking (Sandberg et al., 2014).

- **Eye care**

Ophthalmic neonatorum is an acute mucopurulent conjunctivitis that occurs in the first month of life, and it commonly appears in the first 2-5 days after birth. Ophthalmic neonatorum is usually contracted during birth from the infected canal of the mother and the commonly caused organisms are chlamydia trachomatis and Neisseria gonorrhea, therefore screening of the pregnant mothers is important for sexual transmitted infections (STIs) to reduce the risk of ophthalmic neonatorum. Newborn presents with eye discharge, lids swelling and /or reddening of the eyes. Therefore, mothers should be advised to bring their babies to hospital if they notice any eye discharge, swelling or reddening and avoid use of traditional substance to prevent corneal ulceration and blindness (WHO, 2014).

On other hand, traditional practices are still going on by the primary caregiver such as the application of breast milk and other substance to treat eye infections that a study showed that 68% of the mothers still used substances on the newborn eyes to prevent eye infections (Gul et al., 2014).

Chapter Three

Material and Methods

3.1 Study design

A quantitative, descriptive and cross-sectional design was used in this study in order to identify the knowledge and practices of postnatal primiparous mothers towards newborns care at governmental primary health centers in Gaza strip. This design is appropriate for describing the status of phenomena or for describing relationships among phenomena testing relationships among variables and involving the collection of data during a single period of data collection (Polit and Beck, 2012).

3.2 Setting of the study

The study has been carried out in the main 7 governmental PHCs; namely Jabalia, Sabha Al harazeen, Al Rimal, Al Zaitoon, Deer Al Balah, Khanyounis and Rafah clinics, that provide postnatal health services for the mother and the newborn. Accordance to administrative geographical distribution, the study was conducted in the 5 governorates; namely north Gaza governorate, Gaza governorate, Mid-zone governorate, Khanyounis governorate, and Rafah governorate. The randomly selected health clinics was distributed equally into the 5 Gaza governorates; except from Gaza governorate as a big region takes 3 clinics.

3.3 Study period

This study has been conducted from February, 2019 until November, 2019. Data collection has been carried in about one month.

3.4 Study population

The study population includes all postpartum primiparous women; those visit the randomly selected health centers within the first 6 weeks of delivery for the reason of vaccination her

baby. According to the unpublished statistic of primary health centers (Annex 1), the total population was reported as 2873 postnatal primiparous mothers in Gaza strip (Al-Rimal clinic, 2018). This number represent the expected primiparous mothers that might be followed up at governmental postnatal clinics of Gaza strip in comparison with the above unpublished relevant data.

3.5 Sampling method and sample size

A mixed of two techniques was considered as a sampling plan; through which a combination of 2 stages; multistage cluster sampling method in order to make representativeness to all Gaza strip governorates and consecutive sampling method; were conducted. As the first stage, cluster sampling method, the researcher distributes Gaza strip into 5 governorates according to administrative geographical distribution of Gaza strip. Additionally, as the second stage, the 7 main postnatal clinics from representative governorate were selected randomly to represent the belonged governorate. Finally, the consecutive sampling technique was conducted in which every mother meeting the criteria of inclusion was invited to participate in the study until the required sample size from each clinic is achieved. According to Steven (2012) sample size formula (Annex 2), the suggested optimal sample size for data collection is 338 mothers. The researcher increased the sample size to 345 for potential errors in questionnaires' fillings.

3.6 Eligibility criteria

- A primiparous mother who attended the selected clinics for the purpose of immunized his/her baby (BCG vaccine).
- A mother who agree to participate in the study by signing the consent form.

3.7 Tool of the study

The study has been conducted by using self-constructed interviewed-questionnaire, that formulated in both English and Arabic versions (Annex 3a & b). It's consisted of 3 parts:

Part 1: Sociodemographic characteristics which include maternal age, clinic name, marital status, educational level, occupation, income, governorate, age of the baby at data collection

Part 2: Knowledge domain which includes 32 closed-ended questions (yes/no) questions concerning mothers' knowledge about care of their newborns.

Part 3: Practice domain which includes 34 closed-ended questions (done/not done) questions concerning mothers' proper practices about the care of their newborns.

3.8 Pilot study

A pilot study has been conducted on 21 primiparous mothers before starting of the actual data collection phase in order to test response rate, ensure reliability of the questionnaire to identify the area of ambiguity. The 21 subjects were taken from all randomly selected clinics in a ratio of three mothers per clinic. The sample of pilot study was omitted from the actual data analysis process because of some modification was done in the questionnaire and it used for the measuring the reliability of the questionnaire.

3.9 Validity and Reliability

3.9.1 Face and content validity

The questionnaire has been evaluated by panel of experts (Annex 4) in the field of Mother and Child Health (MCH), midwifery and research methodology in order to evaluate adequacy of the instrument (both English and Arabic version) to measure knowledge and

practices of primiparous mother toward newborn care, which will ultimately give an instrument more confidence upon it.

3.9.2 Reliability of the study instrument

Reliability of an instrument is the degree of consistency of questionnaire. For this purpose, reliability coefficient for pilot sample as well as for the actual study has been measured. Cronbach's coefficient alpha above 0.70 considered an accepted reliability of questionnaire as recommended by Polit, and Beck (2012). The researcher used Cronbach's alpha method to examine the reliability of the questionnaire as presented in table 3.1a&b.

Table (3.1a): Reliability of knowledge questionnaire (Cronbach's alpha coefficient)

No.	Domain	Alpha coefficient
1	Breastfeeding	0.739
2	Immunization	0.690
3	Thermal Care	0.699
4	Umbilical Cord Care	0.738
5	Eye Care	0.734
6	Recognition of dangerous signs	0.730
Total score		0.739

The researcher calculated the reliability of the knowledge questionnaire by using the Cronbach's alpha method, as the value of alpha for the domains and the total scores of the items was above 0.739, which means that the questionnaire has good reliability.

Table (3.1b): Reliability of practices questionnaire (Cronbach alpha coefficient)

No.	Domain	Alpha coefficient
1	Breastfeeding	0.699
2	Immunization	0.757
3	Thermal Care	0.762
4	Umbilical Cord Care	0.722
5	Eye Care	0.695
6	Recognition of dangerous signs	0.766
Total score		0.792

The researcher calculates the reliability of the practices questionnaire by using the Cronbach's alpha method, as the value of alpha for the domains and the total scores of the items was above 0.792, which means that the questionnaire has good reliability.

3.10 Data collection

Data has been collected by the researcher during the study period using interviewed-questionnaire. Each questionnaire has a consent form in the first page that asks the participants to participate in the study voluntarily. Time estimate for questionnaire filling is 15–20 minutes. The sample has been taken from 7 postnatal clinics in the Gaza strip. The procedure of data collection has been done in a consistent manner in each clinic and in each day of data collection till collects the desired number of sample size. The researcher collects the data at the time of BCG administration (given at the 1st month of neonatal life) in each clinic from 8 clock till 12 clocks.

3.11 Data entry and statistical analysis

The process of data entry and analysis included the following process:

- Overview of questionnaires.
- Designing data entry model using SPSS program (version 22).
- Coding and data entry into the computer by assistance of a statistician.

- Data cleaning to ensure accurate entry of data. This process was achieved by checking out a random of questionnaires and performing descriptive statistics for all the variables.

Data analysis include:

- Frequencies, percentages, chi square test and adjusted residua test,. Fisher's test.
- Cronbach's alpha used to examine reliability of the questionnaire
- Correlation coefficient was used to calculates the strength of the relationship between maternal knowledge and practices

3.12 Ethical and Administrative considerations

Before starting the study, the researcher obtained approval from Al-Quds University (Annex 5), approval from Helsinki Committee (Annex 6), and approval from MoH (Annex 7) to conduct the study. Participants were asked for their agreement (Annex 8a&b) to be included in the study with assurance of confidentiality of obtained data.

3.13 Limitations of the study:

- Generalizability of the study might be limited to governmental clinics, rather than to other primiparous postnatal mothers who were attending UNRWA's clinics.
- Data regarding practices of mothers was collected subjectively from the mothers rather than measured by observation.
- Limited data about the topic related the study locality, since it's the first study was conducted in Gaza strip in the relative field.

Chapter Four

Results and Discussion

This chapter presents the findings and discussion of statistical analysis of data. Description of demographic characteristics of study participants was illustrated as well as the results of different variables were identified as inferential results. The results were discussed in relation to available literature and previous studies.

4.1 Descriptive results

Sociodemographic characteristics of study sample

The sociodemographic characteristics of the 345 eligible participants are shown in the below figures and tables. All participants are married which no mother was reported as divorced or widowed during her last pregnancy.

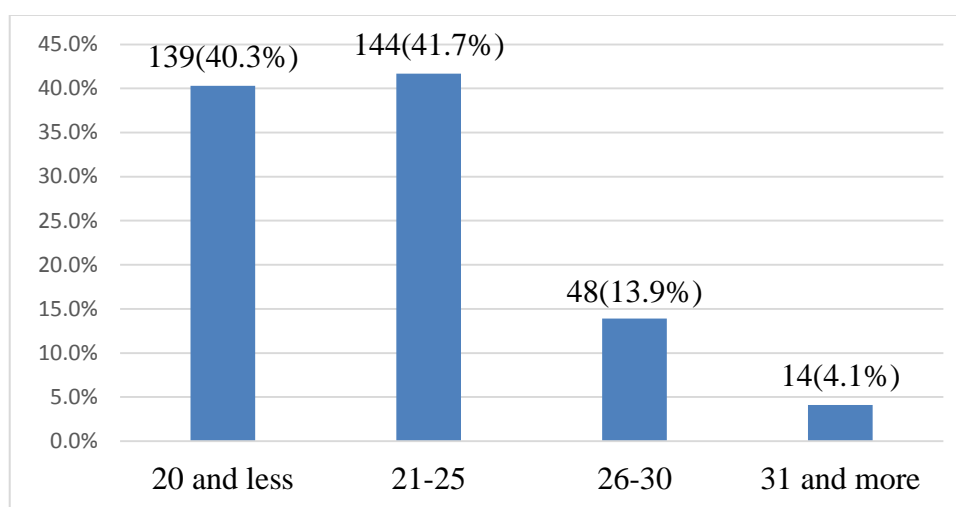


Figure (4.1): Distribution of study participants by age of mothers

Figure (4.1) showed that the majority of study participants were young women as 139 (40.3%) were lies in the age group of 20 years and less, and 144 (41.7%) were lies in the age groups 21 – 25 years, whereas, 14 (4.1%) were lies in the age group of 31 years and more. The mean age of the study sample was 22.176 ± 4.255 years.

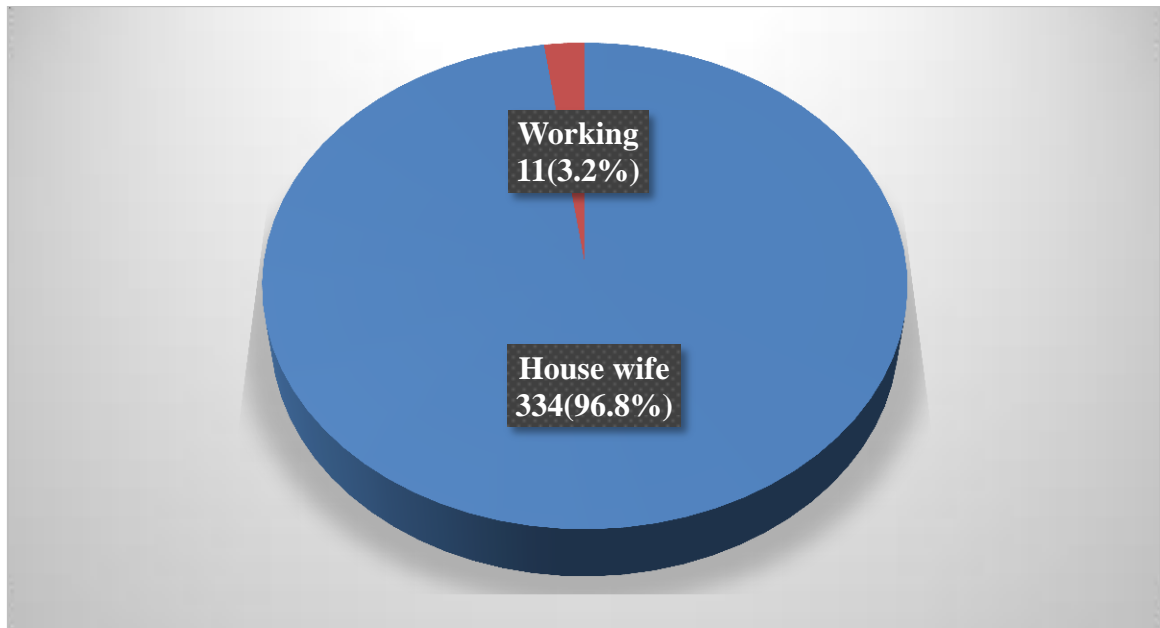


Figure (4.2): Distribution of study participants by work

Figure (4.2) showed that the majority of study participants 334 (96.8%) were housewives, compared to only 11 (3.2%) were working.

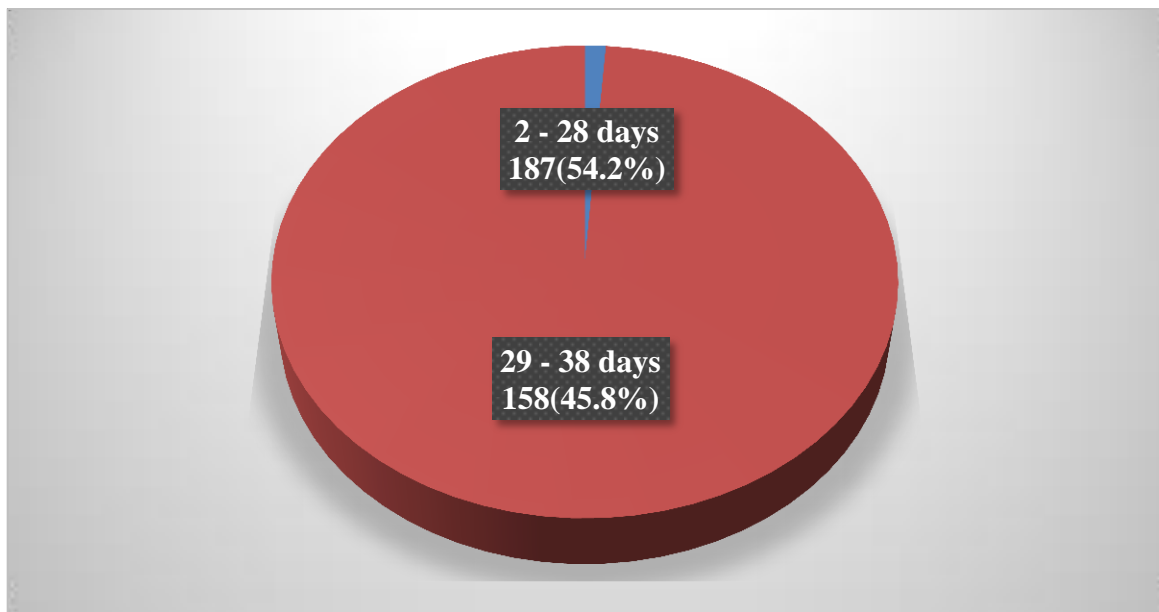


Figure (4.3): Distribution of study participants by age of babies

Figure (4.3) showed that 187 (54.2%) of babies aged between 2 – 28 days, and 158 (45.8%) of babies aged between 29 – 38 days. Their mean age was 18.608 ± 11.708 days.

Table (4.1): Sociodemographic characteristics of study sample

Variable		Number (n-345)	Percentage (%)
Family income			
Less than 1000 NIS*		276	80.0
1000 NS and more		69	20.0
Total		345	100.0
Level of education			
Prep school and less		17	4.9
Secondary school		211	61.2
Diploma		49	14.2
Bachelor degree		68	19.7
Total		345	100.0
Governorate	Primary health care center		
North Governorate	Jabalia clinic	55	15.9
Gaza Governorate	Rimal, Zytoon and Harazeen clinics	135 (45 from each one)	39.1
Middle Governorate	Deer Balah clinic	45	13.1
Khanyounis Governorate	Khanyounis clinic	67	19.4
Rafah Governorate	Rafah clinic	43	12.5
Total		345	100.0
Type of family			
Nuclear		286	82.9
Extended		59	17.1
Total		345	100.0

* NIS = New Israel Shekel

Table (4.1) showed that the majority of study participants 276 (80%) had a family income of less than 1000 NS. The results also showed that about two-thirds of study participants 211 (61.2%) had secondary school education compared to 49 (14.2%) had diploma certificate and 68 (19.7%) had bachelor degree. In addition, the results showed that 135 (39.1%) of study participants live in Gaza governorate (45 mothers from the 3 belonged clinics), compared to 67 (19.4%), 55 (15.9%), 45 (13.1%), and 43 (12.5%) belonged respectively to Khanyounis, North, Middle, and Rafah governorates and clinics. The

results also showed that the majority of study participants 286 (82.9%) live in nuclear family compared to 59 (17.1%) live in extended family.

Table (4.2): Number and percentage of mothers who receiving information about care of newborn and source of information

Variable	Number (n-345)	Percentage (%)	
Received information about care of newborn			
Yes	260	75.4	
No	85	24.6	
Total	345	100.0	
Source of information		(n-260)	%
Family members		66	25.4
Healthcare providers		48	18.5
Family members + healthcare providers		35	13.5
Family members + healthcare providers + internet		35	13.5
Internet		29	11.1
Healthcare provider + internet		6	2.3
Seminars and lectures		5	1.9
Others		36	13.8
Total		260	100.0

Table (4.2) showed that 260 (75.4%) of study participants received information about care of their newborn. Of them, 66 (25.4%) received the information from family members, 48 (18.5%) received information from the healthcare providers. In addition, 35 (13.5%) received information from both family members and healthcare providers, and 35 (13.5%) received information from both family members, healthcare providers and internet, and 29 (11.15%) received information from the internet. The least sources of information were reported in mothers whose receive both sources healthcare provider and internet at the same time (6, 2.3%), and in those receiving Seminars and lectures as a source of information (5, 1.9%).

4.2 Results of study domains

Question 1: What is the level of knowledge of postnatal primiparous mothers about newborns' care at Governmental Primary Health Centers in Gaza Strip?

To answer this question, the researcher calculated frequencies and percentage in order to determine the level of knowledge among participants as illustrated in table (4.3).

Table (4.3): Knowledge of participants about care of newborn (n= 345)

No.	Item	Correct answer		Wrong answer		Rank
		No.	%	No.	%	
Breastfeeding						
1.	It is necessary to put the newborn at the mother’s breast during the first hour after delivery.	339	98.3	6	1.7	1
2.	Whenever the newborn is crying feed him/her as crying is certainly an essential signal of newborn’s hungry.	228	66.1	117	33.9	6
3.	Giving the newborn the first breast-feeding liquid (colostrum) is considered as harmful to practice.	309	89.6	36	10.4	3
4.	Breastfeed in the first month is given each 30 minutes to 1 hr.	142	41.2	203	58.8	8
5.	In the first month after delivery, the newborn given something to drink other than breast milk	284	82.3	61	17.7	5
6.	Cleaning mother’s breast before feeding the newborn is essential element in healthy caring of the newborn	324	93.9	21	6.1	2
7.	Newborn should sleep beside his mother in the bed to facilitate breastfeeding at night.	168	48.7	177	51.3	7
8.	If the newborn getting diarrhea, it should be continuing the breastfeeding	305	88.4	40	11.6	4
Total		76.0		24.0		
Immunization						
9.	Immunization are important way to protect the newborn from the infectious diseases	341	98.8	4	1.2	1
10.	Immunization is essential requirement to prevent hereditary diseases	86	24.9	259	75.1	5
11.	Immunization is giving to the newborn to prevent get disease from her mother	159	46.4	186	53.9	4
12.	Immunization could be harmful to the newborn.	316	91.6	29	8.4	3
13.	The newborn should be immunized as soon as possible according to vaccination schedule	333	96.5	12	3.5	2
Total		71.6		28.4		
Thermal Care						
14.	Drying the newborn immediately after bath is important to prevent heat loses by evaporation.	293	84.9	52	15.1	2

15.	Putting the newborn near open window will cause loss of heat by convection.	196	56.8	149	43.2	4
16.	The best way for warming the newborn is put him/her beside the warmer	311	90.1	34	9.9	1
17.	The oral method of temperature measurement is considered the best way for the newborn	206	59.7	139	40.3	3
18.	Putting the newborn on a naked crib without sheet will lose of heat by conduction	188	54.5	157	45.5	5
19.	Keeping the newborn near cold wall will lose of heat by radiation	170	49.3	175	50.7	6
Total		65.9		34.1		
Umbilical Cord Care						
20.	Newborn's umbilical stump should be kept dry to prevent it from becoming infected.	310	89.9	35	10.1	2
21.	It's essential to put substances as oil after cleaning of the umbilical cord to keep it wet	170	49.3	175	50.7	4
22.	Dirty umbilical cord can cause infection to the newborn.	288	83.5	57	16.5	3
23.	Signs of the newborn's stump local infection could include foul-smelling, yellow drainage from the stump, redness and swelling.	316	91.6	29	8.4	1
Total		78.5		21.5		
Eye Care						
24.	Eye infection is normal sign for all newborns	232	67.2	113	32.8	4
25.	Newborn's eyes need to be gently cleaned with a cloth at mooring daily	317	91.9	28	8.1	1
26.	Use warm water and be firm while cleaning the newborn's eyes	309	89.6	36	10.4	2
27.	Appling kajal in the eyes of the newborn is a good habit	266	77.1	79	22.9	3
28.	Wipe the newborn eye when it's closed without trying to clean inside the eyelids even if this is the source of the infection	161	46.7	184	53.3	5
Total		74.5		25.5		
Recognition of dangerous signs						
29.	Suffering of the newborn from fast breathing is a dangerous sign and needs a specialized medical follow-up	270	78.3	75	21.7	2
30.	Hypothermia is a normal sign for all newborns in the first month	196	56.8	149	43.2	3
31.	Newborn's hyperthermia is a consider dangerous sign that needs a specialized medical follow-up	318	92.2	27	7.8	1
32.	Neonatal jaundice in the first 24 hours of life is normal sign and does not need a medical intervention	181	52.5	164	47.5	4
Total		70.0		30.0		
Overall		72.75		27.25		

As presented in table (4.3), the overall average of knowledge among study participants about care of newborn was 72.75%, which revealed above moderate level of knowledge. The highest score was reported in umbilical cord care domain (78.5%), followed by breastfeeding (76.0%), eye care (74.5%), immunization (71.6%), and recognition of dangerous signs domains (70.0%). The lowest score of knowledge was reported in thermal care domain (65.9%).

Table (4.4): Level of knowledge of postnatal primiparous mothers about newborns' care

Level of knowledge	Range of total score	No.	%
Low	Less than 60%	51	14.8
Moderate	60 – 80%	217	62.9
High	More than 80%	77	22.3
Total		345	100

Table (4.4) showed that about two-thirds 217 (62.9%) of study participants have moderate level of knowledge about care of newborn, 77 (22.3%) have high level of knowledge, while 51 (14.8%) have low level of knowledge.

Question 2: What is the degree of practicing proper newborn care among postnatal primiparous mothers?

To answer this question, the researcher calculated frequencies and percentage of proper and improper practices of primiparous mothers as illustrated in table (4.5).

Table (4.5): Practices of newborn care among primiparous mothers

		Correct practice		Wrong Practice		Rank
No.	Item	No.	%	No.	%	
Breastfeeding						
1.	Do you clean your breast before feeding your newborn?	328	95.1	17	4.9	1
2.	Do you support your breast with your fingers below and the thumb above while feeding?	300	87.0	45	13.0	5
3.	Do you noticed signs of good attachment with your newborn as smiling for you during breast feeding process?	328	95.1	17	4.9	2
4.	Do you give your newborn other feeds of fluids apart from breast milk?	153	44.3	192	55.7	7
5.	When you get a cold or the flu, do you stop breastfeeding of your newborn?	236	68.4	109	31.6	6
6.	Do you give your newborn the first breast feeding liquid (colostrum)?	326	94.5	19	5.5	3
7.	Do you breastfeed your newborn every 2-3 hours?	307	89.0	38	11.0	4
Total		81.9		18.1		
Immunization						
8.	Do you give an attention to fully immunized your newborn?	341	98.8	4	1.2	1
9.	Do you measure the temperature of your newborn after he/she immunized?	310	89.9	35	10.1	2
10.	In the case of increase temperature of your newborn after vaccinations, do you apply a cold compress for her/him?	301	87.2	44	12.8	3
11.	In the case of increase temperature of your newborn after vaccinations, do you give her/him antipyretic drug as paracetamol?	232	67.2	113	32.8	4
12.	When your newborn gets feverish, you don't immunize your newborn?	222	64.3	123	35.7	5
Total		81.5		18.5		
Thermal Care						
13.	Do you measure the temperature by thermometer if your newborn feels feverish?	335	97.1	10	2.9	2
14.	Do you keep the window open frequently in the presence of your newborn in the room?	263	76.2	82	23.8	5
15.	Do you cover your newborn well to prevent heat loss?	285	82.6	60	17.4	3

		Correct practice		Wrong Practice		Rank
No.	Item	No.	%	No.	%	
16.	Do you leave your newborn near in direct heat as sunlight/ warmer?	281	81.4	64	18.6	4
17.	Do you provide warmth to your newborn with appropriate clothing according to season?	339	98.3	8	1.7	1
Total		87.0		13.0		
Umbilical Cord Care						
18.	Do you put oil / powder to your newborn's umbilical stump?	171	49.6	174	50.4	5
19.	Do you disinfect the stump of your newborn with normal saline /alcohol?	276	80.0	69	20.0	4
20.	Do you keep the umbilical stump of your newborn dry?	305	88.4	40	11.6	3
21.	Do you go to hospital/ PHC in case of bleeding from your newborn’s umbilical stump?	320	92.8	25	7.2	2
22.	Do you go to hospital/PHC in case of finding signs of infection at the stamp of your newborn?	332	96.2	13	3.8	1
Total		81.4		18.6		
Eye Care						
23.	Have you applied a substance apart from those prescribe by doctor to your newborn's eye on case of noticing discharge reddening or swelling?	306	88.7	39	11.3	1
24.	Do you put a kajal in the eyes of your newborn from time to time?	283	82.0	62	18.0	3
25.	Do you clean your newborn’s eyes gently from the inside corner to the outside corner?	265	76.8	80	23.2	5
26.	Do you use a clean, moist gauze for cleaning your newborn’s eyes?	306	88.7	39	11.3	2
27.	Do you use a different gauze for each eye to avoid potential cross-infection?	283	82.0	62	18.0	4
Total		83.6		16.4		
Recognition of dangerous signs						
28.	Have you wash your hands with soap and water before breast feeding?	317	91.9	28	8.1	6
29.	Do you remove your newborn’s wet nappy immediately?	329	95.4	16	4.6	2
30.	Do you follow up of your newborn if he/she stop feeding well?	331	95.9	14	4.1	1
31.	Do you follow up of your newborn if your newborn has fast breathing	328	95.1	17	4.9	4
32.	Do you follow up of your newborn if he/she become feverish (> 37.5 °C)?	329	95.4	16	4.6	3
33.	Do you lay your newborn on side in the crib after feeding him/her?	317	91.9	28	8.1	7
34.	Do you follow up of your newborn if he/she has low body temperature (< 35.5 °C)?	320	92.8	25	7.2	5
Total		94.0		6.0		
Overall		84.9		15.1		

As presented in the above table (4.5), the overall average of practicing newborn's care was 84.9%, which revealed high level of proper practice. The highest score was reported in recognition of dangerous signs (94.0%), followed by thermal care (87.0%), eye care (83.6%), breastfeeding (81.9%), immunization (81.5%), and the lowest score was reported in umbilical cord care (81.4%).

Table (4.6): Level of practicing of postnatal primiparous mothers about newborns' care

Level of practice	Range of total score	No.	%
Low	Less than 60 %	5	1.5
Moderate	60 – 80 %	88	25.5
High	More than 80 %	252	73.0
Total		345	100

As shown in table (4.6), 252 (73.0%) of study participants practice newborn care to high extent level, compared to 88 (25.5%) practice newborn care to moderate extent, and only 5 (1.5%) of study participants practice newborn care to low extent.

Question 3: What is the relationship between primiparous mothers' knowledge and their practices towards postnatal newborns care?

Table (4.7): relationship between knowledge and practice of newborns' care

Knowledge	Practice	
	Correlation	P value
	0.587	< 0.001 **

** Significant at 0.01

Table (4.7) showed that there was a statistically significant correlation between maternal knowledge and practice regarding newborns' care ($r = 0.587$, $p < 0.001$).

Question 4: What is the relationship between the selected sociodemographic characteristics of primiparous mothers and their level of knowledge and practices about care of their newborns?

Table (4.8): Differences in knowledge and practice of primiparous mothers toward newborns' care in relation to mothers' age

Variable	Age of the mother (years)				χ^2	P value
	≤ 20 n (%)	21 – 25 n (%)	26 – 30 n (%)	≥ 31 n (%)		
Level of knowledge						
Low	23 (16.6)	17 (11.8)	7 (14.6)	4 (28.6)	13.461 ^a	0.036 *
Moderate	94 (67.6)	82 (56.9)	33 (68.7)	8 (57.1)		
High	22 (15.8)	45 (31.3)	8 (16.7)	2 (14.3)		
Total	139 (100.0)	144	48 (100.0)	14 (100.0)		
Level of practice						
Low	1 (0.7)	2 (1.4)	2 (4.2)	0 (0)	12.449†	0.038*
Moderate	47 (33.8)	26 (18.0)	12 (25.0)	3 (21.4)		
High	91 (65.5)	116 (80.6)	34 (70.8)	11 (78.6)		
Total	139 (100.0)	144	48 (100.0)	14 (100.0)		

*Significant at 0.05

[†] likelihood chi square test

^a Statistical testing using chi-square test

Table (4.8) indicated that there were statistically significant differences in levels of knowledge about newborn care related to mothers age ($P= 0.036$). The results showed that 45 (31.3%) of mothers aged 21–25 years have high level of knowledge compared to 22 (15.8%), 8 (16.7%), and 2 (14.3%) of mothers aged ≤ 20 , 26 – 30 and ≥ 31 years respectively have high level of knowledge.

In addition, there were a statistically significant differences in degree of practicing newborn care related to mothers age ($P= 0.038$). The results showed that 116 (80.6%) of mothers aged 21 – 25 years have high level of practice compared to 91 (65.5%), 34 (70.8%), and 11 (78.6%) of mothers aged ≤ 20 , 26 – 30 and ≥ 31 years respectively have

high level of practice. Therefore, these results reflect that mothers aged 21 – 25 years have significantly higher level of knowledge about care of newborn compared to mothers from other ages, the same as, there was statistically significant differences in practices of newborn care related to age of mothers.

Table (4.9): Differences in knowledge and practice of primiparous mothers toward newborns' care in relation to mothers' work (n= 345)

Variable	Working status		χ^2	P value
	Housewife n (%)	Working n (%)		
Level of knowledge				
Low	51 (15.3%)	0 (0%)	1.839†	0.404
Moderate	208 (62.2%)	9 (81.8%)		
High	75 (22.5%)	2 (18.2%)		
Total	334 (100%)	11 (100%)		
Level of practice				
Low	5 (1.5%)	0 (0%)	0.490†	1.000
Moderate	85 (25.4%)	3 (27.3%)		
High	244 (73.1%)	8 (72.7%)		
Total	334 (100%)	11 (100%)		

*Significant at 0.05, † likelihood chi square test

Table (4.9) showed that 208 (62.2%) and 75 (22.5%) of housewives' mothers have moderate and high level of knowledge respectively, while 9 (81.8%) and 2 (18.2%) of working mothers have moderate and high knowledge respectively (P= 0.404).

In addition, 85 (25.4%) and 244 (73.1%) of housewives' mothers have moderate and high level of practice respectively, while 3 (27.3%) and 8 (72.7%) of working mothers have moderate and high practice respectively (P= 1.000).

This result indicated that there were no statistically significant differences in knowledge, and practice of newborn care between housewives' mothers and working mothers.

Table (4.10): Differences in knowledge and practice of primiparous mothers toward newborns' care related to age of the baby (n= 345)

Variable	Age of the baby (days)		χ^2	P value
	2 – 8 days n (%)	≥ 29 days n (%)		
Level of knowledge				
Low	24 (12.9)	27 (17.1)	8.764 ^a	0.012 *
Moderate	110 (58.8)	107 (67.7)		
High	53 (28.3)	24 (15.2)		
Total	187 (100.0)	158 (100.0)		
Level of practice				
Low	3 (1.6)	2 (1.3)	1.314 [†]	0.558
Moderate	52 (27.8)	36 (22.8)		
High	132 (70.6)	120 (75.9)		
Total	187 (100.0)	158 (100.0)		

*Significant at 0.05

† Fisher's exact test

^a Statistical testing using chi-square test

As shown in table (4.10), 110 (58.8%) and 53 (28.3%) of mothers whose babies aged 2 – 28 days have moderate and high knowledge respectively, while 107 (67.7%) and 24 (15.2%) of mothers whose babies aged 29 days and more have moderate and high knowledge respectively (P= 0.012).

Furthermore, 52 (27.8%) and 132 (70.6%) of mothers whose babies aged 2 – 28 days have moderate and high practice respectively, while 36 (22.8%) and 120 (75.9%) of mothers whose babies aged 29 days and more have moderate and high practice respectively (P= 0.558). Therefore, it is indicated that mothers whose babies aged 2 - 28 days have significantly higher knowledge about care of newborn compared to mothers whose babies aged 29 days and more, while there were no statistically significant differences in practice of newborn care between the two groups.

Table (4.11): Differences in knowledge and practice of primiparous mothers toward newborns' care related to healthcare center (n= 345)

Variable	Primary Healthcare Center							χ^2	P value
	Jabaliala n (%)	Rimal n	Zytoon n (%)	Harazeen n (%)	D. Balah	Khan N	Rafah n (%)		
Level of knowledge									
Low	6	13	5	6 (13.3)	6	9	6 (14.0)	25.571 ^a	0.012*
Moderate	37	29	33	26 (57.8)	24	36	32		
High	12	3	7	13 (28.9)	15	22	5 (11.6)		
Total	55	45	45	45 (100)	45	67	43		
Level of practice									
Low	0 (0)	2	1 (2.2)	0 (0)	0 (0)	0 (0)	2 (4.6)	16.047 ^b	0.189
Moderate	16	15	10	12 (26.7)	13	11	11		
High	39	28	34	33 (73.3)	32	56	30		
Total	55	45	45	45 (100)	45	67	43(100)		

*Significant at 0.05 ^a Statistical testing using chi-square test ^b Statistical testing using likelihood ratio

As shown in table (4.11), 15 (33.4%) of mothers from Der Al Balah PHC and 22 (32.8%) of mothers from Khanyounis PHC have high knowledge about newborn care compared to 12 (21.8%) of mothers from Jabalia PHC, 3 (6.7%) of mothers from Rimal PHC, 7 (15.6%) of mothers from Zytoon PHC, 13 (28.9%) of mothers from Harazeen PHC, and 5 (11.6%) of mothers from Rafah PHC have high knowledge about newborn care (P= 0.012).

The results also showed that 39 (70.9%) of mothers from Jabalia PHC, 28 (62.2%) from Rimal PHC, 34 (75.6%) from Zytoon PHC, 33 (73.3%) from Harazeen PHC, 32 (71.1%) from Der Al Balah PHC, 56 (83.6%) from Khanyounis PHC, and 30 (69.8%) from Rafah PHC have high level of practicing newborn care (P= 0.189). Therefore, the mothers from Khanyounis PHC have significantly higher knowledge about care of newborn, while there were no statistically significant differences in practice of newborn care related to PHC.

Table (4.12): Differences in knowledge and practice of primiparous mothers toward newborns' care related to family income (n= 345)

Variable	Family income		χ^2	P value
	< 1000 NIS* No. (%)	≥ 1000 NIS* No. (%)		
Level of knowledge				
Low	41 (14.8)	10 (14.5)	3.275 ^a	0.194
Moderate	168 (60.9)	49 (71.0)		
High	67 (24.3)	10 (14.5)		
Total	276 (100.0)	69 (100.0)		
Level of practice				
Low	5 (1.8)	0 (0)	0.945 †	0.618
Moderate	72 (26.1)	16 (23.2)		
High	199 (72.1)	53 (76.8)		
Total	276 (100.0)	69 (100.0)		

* NIS= New Israeli Shekel

† Fisher's exact test

^a Statistical testing using chi-square test

Table (4.12) showed that 168 (60.9%) and 67 (24.3%) of mothers who have family income of less than 1000 NIS have moderate and high level of knowledge, and 49 (71.0%) and 10 (14.5%) of mothers who have family income of more than 1000 NIS have moderate and high level of knowledge (P= 0.194).

The results also showed that 72 (26.1%) and 199 (72.1%) of mothers who have family income of less than 1000 NIS have moderate and high level of practice, and 16 (23.2%) and 53 (76.8%) of mothers who have family income of more than 1000 NIS have moderate and high level of practice (P= 0.618).

This result indicated that there were no statistically significant differences in knowledge about newborn care and practice of newborn care among mothers related to family income.

Table (4.13): Differences in knowledge and practice of primiparous mothers toward newborns' care related to mothers' level of education (n= 345)

Variable	Level of education				χ^2	P value
	≤ prep school No. (%)	Secondary No. (%)	Diploma No. (%)	Bachelor No. (%)		
Level of knowledge						
Low	2 (11.8)	32 (15.2)	7 (14.3)	10 (14.7)	4.458 ^a	0.615
Moderate	11 (64.7)	127 (60.2)	30 (61.2)	49 (72.1)		
High	4 (23.5)	52 (24.6)	12 (24.5)	9 (13.2)		
Total	17 (100.0)	211 (100.0)	49 (100.0)	68 (100.0)		
Level of practice						
Low	0 (0)	2 (1.0)	0 (0)	3 (4.4)	4.515 [†]	0.555
Moderate	5 (29.4)	52 (24.6)	14 (28.6)	17 (25.0)		
High	12 (70.6)	157 (74.4)	35 (71.4)	48 (70.6)		
Total	17 (100.0)	211 (100.0)	49 (100.0)	68 (100.0)		

[†] Fisher's exact test

^a Statistical testing using chi-square test

Table (4.13) showed that 11 (64.7%) and 4 (23.5%) of mothers with prep school education and less have moderate and high level of knowledge, 127 (60.2%) and 52 (24.6%) of mothers with secondary education have moderate and high level of knowledge. In addition, 30 (61.2%) and 12 (24.5%) of mothers with diploma certificate, and 49 (72.1%) and 9 (13.2%) of mothers with bachelor degree have moderate and high level of knowledge.

The results also showed that 5 (29.4%) and 12 (70.6%) of mothers with prep school education and less, and 52 (24.6%) and 157 (74.4%) of mothers with secondary education showed moderate and high level of practice. Moreover, 14 (28.6%) and 35 (71.4%) of mothers with diploma certificate, while 17 (25.0%) and 48 (70.6%) of mothers with bachelor degree showed moderate and high level of practice (P= 0.555).

This result indicated that there were no statistically significant differences in knowledge about newborn care and practice of newborn care among mothers related to mothers' level of education.

Table (4.14): Differences in knowledge and practice of primiparous mothers toward newborn care related to governorate (n= 345)

Variable	Governorates					χ^2	P value
	North No. (%)	Gaza No. (%)	Middle No. (%)	Khanyoun is No. (%)	Rafah No. (%)		
Level of knowledge							
Low	6 (10.9)	24 (17.8)	6 (13.4)	9 (13.5)	6 (14.0)	13.94 3 ^a	0.083
Moderate	37 (67.3)	88 (65.2)	24 (53.3)	36 (53.7)	32 (74.4)		
High	12 (21.8)	23 (17.0)	15 (33.3)	22 (32.8)	5 (11.6)		
Total	55	135	45 (100.0)	67 (100.0)	43		
Level of practice							
Low	0 (0)	3 (2.2)	0 (0)	0 (0)	2 (4.6)	8.404 †	0.309
Moderate	16 (29.1)	37 (27.4)	13 (28.9)	11 (16.4)	11 (25.6)		
High	39 (70.9)	95 (70.4)	32 (71.1)	56 (83.6)	30 (69.8)		
Total	55	135	45 (100.0)	67 (100.0)	43		

† Fisher's exact test ^a Statistical testing using chi-square test

Table (4.14) showed that 37 (67.3%) and 12 (21.8%) of mothers from the North governorate, 88 (65.2%) and 23 (17.0%) of mothers from Gaza governorate have moderate and high level of knowledge. In addition, 24 (53.3%) and 15 (33.3%) of mothers from the Middle governorate, 36 (53.7%) and 22 (32.8%) of mothers from Khanyounis governorate, and 32 (74.4%) and 5 (11.6%) of mothers from Rafah governorate have moderate and high level of knowledge (P= 0.083).

The results also showed that 16 (29.1%) and 39 (70.9%) of mothers from the North governorate, and 37 (27.4%) and 95 (70.4%) of mothers from Gaza governorate have moderate and high level of practice. In addition, 13 (28.9%) and 32 (71.7%) of mothers from the Middle governorate, 11 (16.4%) and 56 (83.6%) of mothers from Khanyounis

governorate, and 11 (25.6%) and 30 (69.8%) of mothers from Rafah governorate have moderate and high level of practice ($P= 0.309$).

This result indicated that there were no statistically significant differences in knowledge about newborn care and practice of newborn care among mothers related to governorate or place of residency.

Table (4.15): Differences in knowledge and practice of primiparous mothers toward newborn care related to receiving information about newborn care (n= 345)

Variable	Received information about newborn care		χ^2	P value
	No No. (%)	Yes No. (%)		
Level of knowledge				
Low	16 (18.8)	35 (13.5)	2.356 ^a	0.308
Moderate	54 (63.5)	163 (62.7)		
High	15 (17.7)	62 (23.8)		
Total	85 (100.0)	260 (100.0)		
Level of practice				
Low	4 (4.7)	1 (0.4)	8.140†	0.013 *
Moderate	17 (20.0)	71 (27.3)		
High	64 (75.3)	188 (72.3)		
Total	85 (100.0)	260 (100.0)		

*significant at 0.05 † Fisher's exact test

^aStatistical testing using chi-square test

Table (4.15) showed that 54 (63.5%) and 15 (17.7%) of mothers who did not receive information about newborn care have moderate and high knowledge respectively, while 163 (62.7%) and 62 (23.8%) of mothers who have received information about newborn care have moderate and high knowledge respectively ($P= 0.308$).

In addition, 17 (20%) and 64 (75.3%) of mothers who did not receive information about newborn care showed moderate and high level of practice respectively, while 71 (27.3%)

and 188 (72.3%) of mothers who received information about newborn care showed moderate and high level of practice respectively ($P= 0.013$).

This result indicated that there were no statistically significant differences in level of knowledge between mothers who received information and mothers who did not receive information about newborn care.

4.2 Discussion

Mothers' knowledge and practice regarding care of the newborn is an essential issue for the safety and wellbeing of their babies. The purpose of this study was to assess the knowledge and practices of postnatal primiparous mother towards their newborn care at governmental Primary Health Centers in Gaza Strip. The sample of the study consisted of 345 primiparous mothers, the majority of them lies in the young age group with mean age 22.176 ± 4.255 years. The majority of mothers were housewives, more than one-third live in Gaza governorate, about two-thirds have secondary school education, the majority of them have a family income of less than 1000 NIS, and the majority of them live in nuclear family. About two-thirds of mothers received information about care of the newborn from different sources including family members, healthcare providers, and internet.

The results obtained by Callaghan-Koru et al. (2013) found that the largest proportion of respondents were between the ages of 20 and 29 years old, more than one-third were illiterate. In addition, the results of Sinha et al. (2014) showed that more than two-thirds of mothers were housewives and about three-fourth were illiterate. Moreover, the results of Kebede (2019) indicated that most of the study participants were in the age group of 25 to 29 years, one-third had university education, more than one-third were housewives, and 76.2% received information about newborn care.

Furthermore, Rama, Gopalakrishnan and Udayshankar (2014) found that 44% of study participants got information on newborn care from health workers and 36% received information from family members. Another study carried out by Memon et al. (2019) found that the mean age of the mothers was 28.8 ± 5.8 years, and more than half of mothers aged between 20–29 years, more than half of mothers lived in extended families, two-thirds had no education at all, whereas only 14.1% studied up to secondary level, and more than two-thirds were housewives. In addition, Mesekaa et al. (2017) found that

45% of mothers aged between 25 - 34 years, and 23.9% had secondary school education. Furthermore, the results of Thakur et al. (2017) showed that 57% of mother lies in the age group 20 – 24 years old, 47% had university education and 33% had secondary education, 96% were housewives, 88% had low income, 79% live in extended family, and 24% received information about newborn care.

4.3.1 Knowledge about care of the newborn

Mothers knowledge about care of newborn is an important factor in early detection of abnormal symptoms and seeking medical treatment or advice. The results of this study showed that 72.7% of mothers was answered correctly about the newborns care. The mothers' knowledge about breast feeding, immunization, thermal care, umbilical cord care, eye care and detection of dangerous signs were respectively reach 76%, 71.6%, 65.9%, 78.5%, 74.5%, and 70%. The results also indicated that two-thirds of the primiparous mothers have moderate level of knowledge about care of newborn, while one-fifth have high level of knowledge, and the overall knowledge was above moderate.

In comparison with other previous studies, similar results in a study conducted in Egypt by Moawad (2016) revealed that 52.3% of mothers had adequate knowledge about neonatal jaundice, and maternal socio demographic factors influenced knowledge level, and practices related to neonatal jaundice in Egypt. Also, working mothers, and those residing in urban areas were significantly more knowledgeable than housewives and those residing in rural areas. However, cultural beliefs and traditional infant care practices still have an impact on mothers regardless of their educational level.

Also, Kebede (2019) found that more than half of mothers have good knowledge of newborn care. Mesekaa et al. (2017) also found that mothers have high knowledge about care of newborn as 90% knew about breastfeeding on demand, 74% knew about exclusive

breastfeeding. 90% used warm clothing and 33% kangaroo care for thermoregulation, 20.8% knew about birth vaccines, but 3.4% believed vaccines were harmful, 41.4% identified hypothermia as a danger sign, and 18.2% of mothers knew that the umbilical cord should be cared for while uncovered.

Furthermore, Castalino, Nayak, and D'Souza (2014) also found that the majority of mothers had good knowledge on newborn care. Moreover, Sharafi and Esmaeeli (2013) found that 78.5% of mothers have moderate knowledge on newborn care, 13.3% had good knowledge, and 8.2% of mothers had poor knowledge, while a lower results obtained by Rama, Gopalakrishnan and Udayshankar (2014) who found that only 15% of mothers have adequate knowledge regarding newborn care, 39% have adequate knowledge about feeding practices, 8% have adequate knowledge about immunization, 42% have adequate knowledge about growth and development, and 33% have adequate knowledge about newborn illness.

The results of Sinha et al. (2014) showed that 45% of mothers knew that they should wash their hands with soap and water before handling a newborn, 42% knew about umbilical cord care, and 32% knew about exclusive breastfeeding.

Another study carried out in Pakistan found that respondents' knowledge varied for different aspects of newborn care; 57% of the participants had correct knowledge regarding skin to skin contact, 54.6% had accurate knowledge about initiation of breastfeeding, about 73.4% knew that breastfeeding should be given on demand, more than half of the participants were aware about six months duration of exclusive breastfeeding, and more than two-thirds of the mothers knew that alcohol is used for care of umbilical cord (Memon et al., 2019).

In contrary, a study carried out by Missiriya (2016) found that 70% of mothers had inadequate knowledge and 30% had moderate knowledge. The same as Bhatt et al. (2012) reported that early initiation of breastfeeding among mothers less than 21 years of age was 29.4%, and among illiterate mothers was 24.6%. The study results of Amolo, Irimu and Njai (2017) showed that 17.8% of postnatal mothers identified vaccines correctly, while 7% of mothers believed that vaccines are harmful. Moreover, Sandberg et al. (2014) found that mothers expressed poor knowledge on key newborn dangerous signs as 58.2% of mothers could only identify one dangerous sign and 14.8% could identify two dangerous signs.

The results of this study indicated that the majority of mothers have moderate knowledge about newborn care, which is explained in the context that the majority of mothers have secondary school and higher education and more than two-thirds of them received information from healthcare providers, family members, and other sources, which was reflected in acquiring adequate knowledge about care of newborn.

4.3.2 Practice of care of the newborn

The results of this study showed that 84.9% of mothers were reported their correct practices of their newborns care. The results of the study showed that correct practices for breast feeding (81.9%), immunization (81.5%), thermal care (87%), umbilical cord care (81.4%), eye care (83.6%), and detection of dangerous signs (94%). The results also indicated that about three-fourths of the mothers have high level of practice about care of newborn, one-fourth have moderate level of practice, and the overall practice of newborn care was high.

The results obtained by Memon et al. (2019) indicated that about half of mothers were initiated breastfeeding within first hour after delivery, 65% breastfed their baby on

demand, and 71.6% of mothers used dettol or alcohol for umbilical cord care. Earlier study carried out by Memon et al. (2013) found that 32% of mothers practiced early bathing of their newborn and 69% used traditional cord applications. In addition, Singh et al. (2019) found that 48.7% of the mothers had inadequate knowledge of newborn care, while 33.8% mothers had unsatisfactory newborn care practices.

On hand results showed a consistent result with Castalino, Nayak, and D'Souza (2014) who reported that most of mothers had excellent practice on newborn care. In addition, Thakur et al. (2017) found that practice level was high (90.5%) among the majority of the postnatal mothers as the majority of mothers are able to recognize the neonatal danger signs and symptoms and takes preventive actions regarding them. Kebede (2019) found that two-thirds of mothers have good practice of newborn care, while the results of Tewodros et al. (2015) indicated that 40.6% of mothers had good practice of newborn care.

Monebenimp et al. (2013) indicated that there was good practice of essential neonatal care, even though only 1.4% said that they received information on newborn's danger signs. The results also showed that the traditional substances were applied on the cord by 54.2% of mothers, while eye care was continued for 2 to 7 days by 85.4% of mothers, 70.3% of mothers delayed first bath to Six hours, 44.3% initiated breastfeeding within one hour. The study results of Berhea, Belachew, and Abreha (2018) showed that 36.1% of mothers had good knowledge and 81.1% had a good practice about the essential newborn care.

Another study conducted by Rachitha et al. (2014) found that 63% of newborns had experienced hypothermia and 65% of mothers had knowledge about preventive measures of hypothermia, and 35% had very poor practice to avoid hypothermia.

The results of Sinha et al. (2014) showed that 74% of mothers started breastfeeding within the first hour after delivery, and 58% of mothers exclusively breastfed their newborn, 96%

wrapped their baby to avoid hypothermia, and 20% of them practised the kangaroo care method, 64% delayed bathing of the baby after 48 hours, 49% did not apply anything on the cord stump, and 9% mothers kept the eyes of the newborn clean.

Another study carried out by Penfold et al. (2010) found that around two-thirds of mothers reported bathing their babies within 6 hours of delivery, 28% reported putting antiseptic on the cord to help it dry, skin-to-skin contact between mother and baby after delivery was rarely practiced, 83% of mothers breastfed their babies within 24 hours of delivery, while only 18% breastfed within first hour, and fewer than half of mothers exclusively breastfed in the three days after delivery. In a contrast, a study carried out by Missiriya (2016) found that 63.3% had poor practice and 36.7% had satisfactory practice of newborn care.

The results of the study indicated that the majority of mothers expressed high practice of newborn care, which is explained in the context that the majority of mothers have above moderate and high knowledge about newborn care. It is assumed that having adequate knowledge will be reflected in practice, and having adequate knowledge will lead to better practice of newborn care.

4.3.3 Relationship between knowledge and practice

The study results showed that there was a statistically significant relationship between knowledge and practice of newborns' care among primiparous mothers. This result was consistent with the results of Kebede (2019) which indicated statistically significant relationship between knowledge and practice, and mothers who had poor knowledge were found to have lower practice of newborn care than mothers with good knowledge. Moreover, Indu (2016) found also a statistically significant positive correlation between knowledge and practice scores regarding newborn care. In addition, Tewodros et al. (2015) found significant relationship between knowledge and practice, and that knowledge about

breast feeding time, and knowledge about first bathing time were significant predictors of good practice of newborn care.

In contrary, a different result obtained by Castalino, Nayak, and D'Souza (2014) found that there was no statistically significant relationship between knowledge and practice. In my opinion, knowledge and practice are parallel, and as knowledge increase, the practice will increase, and in order to have high quality of practice, there should be adequate knowledge. Therefore, it is logic to mention that mothers who have adequate knowledge about care of newborn, will have better practice of newborn care.

4.3.4 The relationship between knowledge, practice and sociodemographic variables

The results of this study indicated that there was a statistically significant association between knowledge and age, that young mothers (21 – 25 years old) have significantly higher level of knowledge about care of newborn, while there were no statistically significant differences in practices of newborn care related to age of mothers. The study also showed that there were no statistically significant differences in knowledge and practice of newborn care related to mothers' work, income, level of education, and place of residency.

A study carried out by Singh et al. (2019) found that mothers with at least secondary level of education were more likely to have adequate knowledge about newborn care compared to mothers who never attended school, mothers whose first pregnancy occurred between the ages of 20 - 24 years were also more likely to have adequate knowledge about newborn care compared to younger age mothers. The same as, the results obtained by Memon et al. (2019) showed that mothers from the age group of 14 -19 had significantly lower knowledge as compared to the mothers above 19 years old, mothers with no education had significantly lower knowledge compared to those with education. The results also

showed that mothers who were housewives had lower knowledge compared to mother who were working. In addition, there were no statistically significant differences in level of knowledge related to family type.

In addition, a study carried out by Missiriya (2016) found that there was statistically significant relationship between the mother's knowledge and age, education and family type. Also, Castalino et al. (2014) found that education status of the respondents had significant association with their knowledge regarding newborn care, while other demographic variables did not indicate statistically significant association with knowledge of the mothers.

The results obtained by Rama, Gopalakrishnan and Udayshankar (2014) showed that there was statistically significant relationship between knowledge about newborn care and mothers' level of education, and the study conducted by Darling et al. (2014) indicated significant relationship between mothers' level of education and their knowledge about newborn care. Moreover, Bhatt et al. (2012) found that lack of adequate information, maternal education level, and socioeconomic factors influences the early breast-feeding practices.

Concerning practice, the oldest age group > 40 had the lowest percentage mean practice score than younger mothers. Furthermore, there was a significant difference in practice between mothers with no education and educated mothers, but the difference between middle and higher education groups was not significant. The housewife had a significantly lower practice than working mothers. The results also showed that there were no statistically significant differences in practice related to family type (Memon et al., 2019).

Another study conducted by Kebede (2019) showed that mothers' level of education was significantly associated with their knowledge of newborn care, and those who do not have formal education expressed the lowest level of knowledge and practice. Mothers' age and occupation found to be associated with the practice of newborn care as mothers at the age 20–24 years old had higher practice than mothers at the age group 15 - 19, and mothers who were working expressed higher practice of newborn care than housewife mothers.

Another study carried out by Habibi (2017) found statistically significant relationship between practice of exclusive breastfeeding and mother's education, and maternal employment. The same as a study carried out in Ethiopia found statistically significant relationship between good practice of newborn care and level of education, while there was no significant relationship between mothers' occupation and practice of newborn care (Tewodros et al., 2015). The same as, Indu (2016) found statistically significant relationship between age, education, sources of information regarding postnatal care and level of knowledge and practice of newborn care, while Thakur et al. (2017) found that there was no statistically significant association between practice score and selected personal variables of the mothers regarding neonatal danger signs.

The study results revealed variations in the sociodemographic factors that affect knowledge and practice of newborn care. These variations could be related to personal characteristics of mothers, social factors such as living in nuclear family, educational level, and receiving information and instructions about newborn care. It is essential to prepare primiparous mothers who gave birth for the first time and did not have experience with postnatal and newborn care with adequate knowledge and instructions to enable them to offer appropriate care to their babies safely to maintain good health for their babies, avoid health problems, and detect abnormal symptoms that may occur, and that will be reflected in healthy babies and decrease neonatal morbidity.

Chapter Five:

Conclusion and Recommendations

5.1 Conclusion

The (PNC) is characterized by a continuous care for maternal and new born health. The postnatal period is critical as most maternal deaths occur during this time from first six weeks from delivery postnatal care is a comprehensive care of mother and new-born, include breastfeeding, immunization, thermal care, cord care and eye care, and recognition of dangerous signs.

The purpose of the study was to assess the knowledge and practices of postnatal primiparous mother towards their newborn care at governmental primary health centers in Gaza strip. The study utilized a quantitative, descriptive and cross-sectional design. Multistage cluster sampling plan was conducted; through which a combination of cluster sampling method and consecutive sampling method were used.

The sample of the study consisted of 345 primiparous mothers from seven health care centers in five Gaza governorates, namely Jabalia, Sabha Al harazeen, Al Rimal, Al Zaitoon, Deer Al Balah, Khanyounis and Rafah clinics in Gaza Strip. The majority of participants were lies in the young age group (22.176 ± 4.255), housewives, live in Gaza governorate, have secondary school education, have a family income of less than 1000 NIS, and live in nuclear family. About two-thirds of the mothers received information about care of the newborn from different sources including family members, healthcare providers, and internet.

Furthermore, the results of the study showed that the 72.7% of mothers was answered the knowledge domains questions correctly; that 62.9% of study participants have a moderate level (60 - 80%) of knowledge about care of newborn, 22.3% have high level of knowledge (> 80%), and generally, the results reflected above moderate level of knowledge about newborn's care. Also, the study results showed that the overall of proper practicing newborns' care was 84.9%, that 73% of primiparous women practice classified as high extent level (> 80%), and that reflect high level of proper practice of newborn care in the study sample.

Several sociodemographic factors influence level of knowledge and practice. The results indicated mothers aged 21–25 years have high level of knowledge, high level of practice, housewives' mothers have moderate and high level of knowledge , moderate and high level of practice, mothers whose babies aged 2 - 28 days have significantly higher knowledge about care of newborn no statistically significant differences in practice of newborn care. 33.4% of mothers from Der Al Balah PHC 32.8% of mothers from Khanyounis PHC have high knowledge about newborn care compared to 21.8% of mothers from Jabalia PHC, 6.7% of mothers from Rimal PHC, 15.6% of mothers from Zytoon PHC, 28.9% of mothers from Harazeen PHC, and 11.6% of mothers from Rafah PHC have high knowledge about newborn care ($P= 0.012$). have high level of practicing newborn care ($P= 0.245$).

Also, the study conclude that The results of indicated that there was statistically significant association between knowledge and age, and young mothers (21 – 25 years old) have significantly higher level of knowledge about care of newborn, while there were no statistically significant differences in practices of newborn care related to age of mothers.

There were no statistically significant differences in knowledge and practice of newborn care related to mothers' work, income, level of education, and place of residency. which

revealed above moderate level of knowledge. The highest score was reported in umbilical cord care domain, followed by breastfeeding, eye care, immunization, and recognition of dangerous signs domains. The lowest score of knowledge was reported in thermal care domain. The study concluded that in order to maintain high level of knowledge and practices of newborn care. More emphasis is needed in maternal education during antenatal care towards breast feeding, cord care, eye care thermoregulation and immunization, and recognition of dangerous signs.

5.2 Recommendations

In the light of the previous study results, the researcher recommends the following:

For the mother and health care provider

Increase the mothers' awareness about newborn care throughout intensive lectures by health care providers during her pregnancy routine visits in the following themes:

- Breast feeding care including frequency of babies' needs for breastfeeding
- Focus in the safety of babies by keep them out of adult's bed in night
- Thermal care of newborn including methods of heat loss
- Umbilical cord care including proper cord hygiene
- Eyes care including safety measures for cleaning of babies' eyes

For Ministry of Health

- Increase develop and implement educational programs for health care providers about newborn care.
- Increase develop and implement educational programs to mothers about newborn care and encourage to attendance these programs.
- -Develop and distribute an educational brochure to mother about newborn care

For further research

- To conduct studies about primiparous women' knowledge, attitudes and practices regarding newborn care.
- To conduct further qualitative studies aiming to understand mechanisms of enhancing knowledge and practice of primiparous mother toward newborn care
- To conduct further Quasi Experimental studies aiming to understand mechanisms of enhancing knowledge and practice of primiparous mother toward newborn care
- To carry out a study at the national level including other locations such as UNRWA and NGOs.

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Annexes

Annex (1): Table clarifies number of target population for year 2018 (Rimal clinic-unpublished)

Governorate and belonged postnatal clinics	No. of follow-up mothers
North Gaza governorate	553
Abo Shabak	135
AL Shayma	153
Jabaliala	265
Gaza governorate	1350
Al Daraj	116
Al Falah	72
Al Horyah	64
Al Qoba	230
Al Rimal	224
Al Salam	68
Al Sorani	144
Al Zaitoon	167
Sabha Al harazeen	192
Shek Radwan	47
Ata Habeeb	26
Mid-zone governorate	150
Deer Al Balah	110
Al Zawida	22
Wadi Al Salaqa	18
Khan-Younis governorate	674
Abasan Al Kabeerah	65
Absaan Al jadedda	35
Al Gararah	105
Bani Sohelah	80
Khanyounis	311
Joret Al Loot	78
Rafah governorate	146
Rafah	97
Tal Sultan	49
Total	2873

Annex (2): Steven sample size equation for descriptive studies

N= Population Size **2873**

n= Sample size 338.9549899

$$n = \frac{Np(1-p)}{(N-1)(d^2/z^2) + p(1-p)}$$

N= Population size of primiparous mothers

n = The optimal number of sample size

p= Probability (50%)

d= Marginal proportion (0.05)

z= Confidence level at 95% (1.96)

Annex (3a): English version questionnaire

Questionnaire

**Knowledge and Practices of Postnatal Primiparous Mothers towards Newborns' Care
at Governmental Primary Health Centers in Gaza Strip**

Direction: Mark the response that best describes you

Part I: Socio-demographic domain		
Age in years:	Marital status: <input type="checkbox"/> Married <input type="checkbox"/> Divorce <input type="checkbox"/> Widow	Occupation: <input type="checkbox"/> Housewife <input type="checkbox"/> Working
Age of the newborn at the data collection:	Clinic Name:	Income per NIS*: <input type="checkbox"/> Less than 1000 <input type="checkbox"/> 1000 – < 1500 <input type="checkbox"/> 1500 – < 2000 <input type="checkbox"/> 2000 – < 2500 <input type="checkbox"/> 2500 and more
Education: <input type="checkbox"/> Elementary <input type="checkbox"/> preparatory <input type="checkbox"/> Secondary school <input type="checkbox"/> Diploma <input type="checkbox"/> Bachelor <input type="checkbox"/> Higher education	Governorate: <input type="checkbox"/> North Gaza <input type="checkbox"/> Gaza governorate <input type="checkbox"/> Mid-zone governorate <input type="checkbox"/> Khan-Younis <input type="checkbox"/> Rafah	Type of your family <input type="checkbox"/> Nuclear family <input type="checkbox"/> Extended Family <input type="checkbox"/> Other
Have you received any information about the care of newborns since the birth of this baby? <input type="checkbox"/> No <input type="checkbox"/> Yes If yes, please specify source of information: <input type="checkbox"/> Health care provider <input type="checkbox"/> Family <input type="checkbox"/> TV <input type="checkbox"/> Internet <input type="checkbox"/> Seminars and lectures <input type="checkbox"/> Other		

Direction: Mark with (✓) for the response that best describe true or false statement

Part II: Knowledge domain

No.	Item	True	False
- Breastfeeding			
1.	It's necessary to put the newborn at the mother's breast during the first hour after delivery.		
2.	Whenever the newborn is crying feed him/her as crying is certainly an essential signal of newborn's hungry.		
3.	Giving the newborn the first breast feeding liquid (colostrum) is considered as harmful to practice.		
4.	Breastfeed in the first month is given each 30 minutes to 1 hr.		
5.	In the first month after delivery, the newborn given something to drink other than breast milk		
6.	Cleaning mother's breast before feeding the newborn is essential element in healthy caring of the newborn		
7.	Newborn should sleep beside his mother in the bed to facilitate breastfeeding at night.		
8.	If the newborn getting diarrhea, it should be continuing the breastfeeding		
- Immunization			
9.	Immunization are important way to protect the newborn from the infectious diseases		
10.	Immunization is essential requirement to prevent hereditary diseases		
11.	Immunization is giving to the newborn to prevent get disease from her mother		
12.	Immunization could be harmful to the newborn.		
13.	The newborn should be immunized as soon as possible according to vaccination schedule		
- Thermal Care			
14.	Drying the newborn immediately after bath is important to prevent heat loses by evaporation.		
15.	Putting the newborn near open window will cause loss of heat by convection.		
16.	The best way for warming the newborn is put him/her beside the warmer		
17.	The oral method of temperature measurement is considered the best way for the newborn		

18.	Putting the newborn on a naked crib without sheet will lose of heat by conduction		
19.	Keeping the newborn near cold wall will lose of heat by radiation		
- Umbilical Cord Care			
20.	Newborn's umbilical stump should be kept dry to prevent it from becoming infected.		
21.	It's essential to put substances as oil after cleaning of the umbilical cord to keep it wet		
22.	Dirty umbilical cord can cause infection to the newborn.		
23.	Signs of the newborn's stump local infection could include foul-smelling, yellow drainage from the stump, redness and swelling.		
- Eye Care			
24.	Eye infection is normal sign for all newborns		
25.	Newborn's eyes need to be gently cleaned with a cloth at mooring daily		
26.	Use warm water and be firm while cleaning the newborn's eyes		
27.	Applying kajal in the eyes of the newborn is a good habit		
28.	Wipe the newborn eye when it's closed without try to clean inside the eyelids even if this is the source of the infection		
- Recognition of dangerous signs			
29.	Suffering of the newborn from fast breathing is a dangerous sign and needs a specialized medical follow-up		
30.	Hypothermia is a normal sign for all newborns in the first one month		
31.	Newborn's hyperthermia is a consider dangerous sign that needs a specialized medical follow-up		
32.	Neonatal jaundice in the first 24 hours of life is normal sign and does not need a medical intervention		

Direction: Mark with (✓) the response that best describes you

Part III: Practice domain			
No.	Item	Do	Not do
- Breastfeeding			
1.	Do you clean your breast before feeding your newborn?		
2.	Do you support your breast with your fingers below and the thumb above while feeding?		
3.	Do you noticed signs of good attachment with your newborn as smiling for you during breast feeding process?		
4.	Do you give your newborn other feeds fluids apart from breast milk?		
5.	When you get a cold or the flu, do you stop breastfeeding of your newborn?		
6.	Do you give your newborn the first breast feeding liquid (colostrum)?		
7.	Do you breastfeed your newborn every 2-3 hours?		
- Immunization			
8.	Do you give an attention to fully immunized your newborn?		
9.	Do you measure the temperature of your newborn after he/she immunized?		
10.	In the case of increase temperature of your newborn after vaccinations, do you apply a cold compress for her/him?		
11.	In the case of increase temperature of your newborn after vaccinations, do you give her/him antipyretic drug as paracetamol?		
12.	When your newborn gets feverish, you don't immunize your newborn?		
- Thermal Care			
13.	Do you measure the temperature by thermometer if your newborn feels feverish?		
14.	Do you keep the window open frequently in the presence of your newborn in the room?		
15.	Do you cover your newborn well to prevent heat loss?		
16.	Do you leave your newborn near in direct heat as sunlight/ warmer?		
17.	Do you provide warmth to your newborn with appropriate clothing according to season?		
- Umbilical Cord Care			
18.	Do you put oil / powder to your newborn's umbilical stump?		
19.	Do you disinfect the stump of your newborn with normal saline /alcohol?		
20.	Do you keep the umbilical stump of your newborn dry?		
21.	Do you go to hospital/ PHC in case of bleeding from your newborn's umbilical stump?		
22.	Do you go to hospital/PHC in case of finding signs of infection at the stamp of your newborn?		

- Eye Care			
23.	Have you applied a substance apart from those prescribe by doctor to your newborn's eye on case of noticing discharge reddening or swelling?		
24.	Do you put a kajal in the eyes of your newborn from time to time?		
25.	Do you clean your newborn's eyes gently from the inside corner to the outside corner?		
26.	Do you use a clean, moist gauze for cleaning your newborn's eyes?		
27.	Do you use a different gauze for each eye to avoid potential cross-infection?		
- Recognition of dangerous signs			
28.	Have you wash your hands with soap and water before breast feeding?		
29.	Do you remove your newborn's wet nappy immediately?		
30.	Do you follow up of your newborn if he/she stop feeding well?		
31.	Do you follow up of your newborn if your newborn has fast breathing		
32.	Do you follow up of your newborn if he/she become feverish (> 37.5 °C)?		
33.	Do you lay your newborn on side in the crib after feeding him/her?		
34.	Do you follow up of your newborn if he/she has low body temperature (< 35.5 °C)?		

Thanks for your participation

Annex (3b): Arabic version questionnaire

"معرفة وممارسات الأمهات البكاره بعد الولادة اتجاه رعاية الأطفال حديثي الولادة في المراكز الصحية الأولية الحكومية في قطاع غزة"

توجيه: حددي بعلامة (✓) للإجابة التي تصفها صحيحة أو خاطئة وفقاً لمعرفتك

الجزء الأول: المحور الديموغرافي الاجتماعي		
عمر الأم:	الحالة الزوجية:	المهنة:
..... سنة	<input type="checkbox"/> متزوجة <input type="checkbox"/> مطلقه <input type="checkbox"/> ارمله	<input type="checkbox"/> ربه منزل <input type="checkbox"/> موظفه
عمر الطفل:	اسم العيادة:	الدخل الشهري بالشيكل:
..... يوم	<input type="checkbox"/> أقل من 1000 <input type="checkbox"/> 1000 – أقل من 1500 <input type="checkbox"/> 1500 – أقل من 2000 <input type="checkbox"/> 2000 – أقل من 2500 <input type="checkbox"/> 2500 وأكثر
المؤهل العلمي :	المحافظة:	نوع العائلة
<input type="checkbox"/> الابتدائي <input type="checkbox"/> الإعدادي <input type="checkbox"/> ثانوي <input type="checkbox"/> دبلوم <input type="checkbox"/> البكالوريوس <input type="checkbox"/> التعليم العالي	<input type="checkbox"/> الشمال <input type="checkbox"/> غزة <input type="checkbox"/> الوسطى <input type="checkbox"/> خان يونس <input type="checkbox"/> رفح	<input type="checkbox"/> الأسرة النووية <input type="checkbox"/> الأسرة الموسعة <input type="checkbox"/> أخرى
هل تلقيت أي معلومات عن رعاية الأطفال حديثي الولادة منذ ولادة هذا الطفل؟ <input type="checkbox"/> لا <input type="checkbox"/> نعم إذا كانت الإجابة بنعم، يرجى تحديد مصدر المعلومات <input type="checkbox"/> مقدم الرعاية الصحية <input type="checkbox"/> العائلة <input type="checkbox"/> التلفزيون <input type="checkbox"/> الإنترنت <input type="checkbox"/> الندوات والمحاضرات <input type="checkbox"/> أخرى		

الجزء الثاني: محور المعرفة			
الرقم	البند	نعم	لا
- الرضاعة الطبيعية			
1.	من الضروري وضع المولود على ثدي الام للرضاعة خلال الساعة الأولى بعد الولادة		
2.	كلما بكى المولود يجب ارضاعه لان البكاء مؤشر رئيسي لجوع المولود		
3.	إعطاء المولود أول حليب للرضاعة الطبيعية (اللبأ) تعتبر ممارسة خاطئة		
4.	يتم إعطاء الرضاعة الطبيعية في الشهر الأول كل 30 الي 60 دقيقة		
5.	في الشهر الأول بعد الولادة، يعطي المولود اشياء اخرى غير حليب الأم		
6.	تنظيف الام لثديها قبل إرضاع المولود يعتبر عنصراً أساسياً في الرعاية الصحية للمولود		
7.	يجب أن يوضع المولود بجانب امه على السرير لتسهيل عملية الرضاعة الطبيعية في الليل		
8.	يجب الاستمرار بالرضاعة الطبيعية حتى لو كان المولود يعاني من الإسهال		
- التطعيم			
9.	التطعيم وسيلة مهمة لحماية المولود من الأمراض المعدية		
10.	التطعيم متطلب ضروري من أجل منع الامراض المنقولة بالوراثة		
11.	التطعيم يُعطي للمولود من أجل منع انتقال المرض من الأم للطفل		
12.	التطعيم قد يكون ضاراً بالمولود		
13.	يجب تطعيم المولود في أقرب وقت ممكن وفقاً لجدول التطعيم		
- العناية بحرارة المولود			
14.	تجفيف المولود على الفور بعد الاستحمام مهم لمنع فقدان الحرارة عن طريق التبخر		
15.	وضع المولود بالقرب من النافذة المفتوحة سيؤدي الى فقدان الحرارة بسبب الحمل (مرور تيار هوائي)		
16.	أفضل طريقة لتدفئة المولود تكون بوضعه قريباً من المدفئة		
17.	قياس الحرارة عن طريق الفم تعتبر الطريقة المثلى لقياس درجة حراره المولود		
18.	وضع المولود على سرير عار بدون شرشف سوف يفقد الحرارة عن طريق التوصيل		
19.	وضع المولود قريب من حائط بارد سوف يفقد الحرارة بواسطة الاشعاع		
- العناية بالحبل السري			
20.	يجب أن تبقى سرة المولود جافة لمنع حدوث التهاب لها		
21.	من الضروري وضع مواد مثل الزيت بعد تنظيف الحبل السري من أجل ابقائه رطب		
22.	الحبل السري المتسخ قد يسبب عدوى للمولود		

23.	علامات الإصابة الموضعية للتهاب الحبل السري للمولود هي: رائحة كريهة، صديد أصفر احمرار حول السرة و تورم		
- العناية بالعين			
24.	التهاب العين هي علامة طبيعية عند جميع المواليد		
25.	يجب مسح عين المولود بقطعة قماش نظيفة يوميا عند الصباح		
26.	يتم استخدام الماء الدافئ لتنظيف عين المولود		
27.	وضع الكحل في عين المولود تعتبر عادة جيدة		
28.	يتم مسح العين للمولود عندما تكون مغلقة بدون محاوله تنظيفها من داخل الجفن حتى لو كان هذا هو مصدر العدوى		
- التعرف على العلامات الخطرة			
29.	تنفس المولود بشكل سريع تعتبر علامة خطيرة و تحتاج الى متابعة طبية متخصصة		
30.	انخفاض الحرارة أمر اعتيادي عند جميع المواليد في الشهر الأول		
31.	ارتفاع حرارة المولود تعتبر علامة خطيرة تستدعي المتابعة الطبية المتخصصة		
32.	اليرقان الوليدي (اصفرار العين) في اول 24 ساعة من الحياة تعتبر طبيعية ولا تستدعي التدخل الطبي		

توجيه: حددي بعلامة (✓) للاستجابة التي تصفك على أفضل نحو

الجزء الثالث: محور الممارسة			
الرقم	البند	نعم	لا
- الرضاعة الطبيعية			
1.	هل تقومين بتنظيف ثديك قبل إرضاع وليدك؟		
2.	هل تعملين على دعم ثديك بأصابعك لأسفل والإبهام لأعلى أثناء الرضاعة؟		
3.	هل تلاحظين علامات التعلق الجيد بوليدك مثل ابتسامته لك أثناء إرضاعه؟		
4.	هل تعطي وليدك سوائل أخرى بجانب الرضاعة الطبيعية؟		
5.	عندما تصابين بالبرد أو الأنفلونزا، هل تتوقفين عن رضاعة وليدك؟		
6.	هل قمتِ بإعطاء وليدك أول حليب (حليب اللبأ)؟		
7.	هل تقومين بإرضاع وليدك كل 2-3 ساعات؟		
- التطعيم			
8.	هل تهتمي بإعطاء وليدك جميع التطعيمات المنصوص عليها؟		
9.	هل تقومين بقياس درجة حرارة وليدك بعد تطعيمه؟		
10.	في حالة ارتفاع درجة حرارة وليدك بعد التطعيم، هل تقومين بعمل كمادات ماء بارده		
11.	في حالة ارتفاع درجة حرارة وليدك بعد التطعيم، هل تقومين بإعطائه دواء خافض		

		للحرارة مثل الأكامل	
12.		عندما يصاب وليدك بارتفاع في درجة الحرارة، هل تتوقفين عن تطعيمه؟	
- العناية بحرارة المولود			
13.		هل تقيسي درجة حرارة وليدك بالميزان الحرارة اذا شعرتي بان درجة حرارته مرتفعة؟	
14.		هل تحافظين على ان يبقى شبك الغرفة مفتوح بشكل مستمر في ظل وجود وليدك بالغرفة؟	
15.		هل تغطي وليدك جيداً لمنع فقدان الحرارة؟	
16.		هل تتركي وليدك يتعرض لحرارة مباشر مثل اشعة الشمس او مدفئة؟	
17.		هل تزودي وليدك بالدفيء بالملابس المناسبة وفقاً للموسم؟	
- العناية بالحبل السري			
18.		هل تضعين الزيت /البودرة على سرة لوليدك؟	
19.		هل تطهيري الحبل السري لوليدك بالمحلول الملحي المعقم / الكحول؟	
20.		هل تحافظين على أن يبقى الحبل السري لوليدك جاف؟	
21.		هل تذهبين إلى المستشفى / الرعاية الصحية في حال وجود نزيف من سرة وليدك؟	
22.		هل تذهبين إلى المستشفى / الرعاية الصحية في حال وجود علامات التهاب في الحبل السري لوليدك؟	
- العناية بالعين			
23.		هل تضعين أي مواد غير موصوفة من قبل الطبيب على عين وليدك في حال وجود احمرار او افرازات او تورم ؟	
24.		هل تقومي بوضع الكحل في عين وليدك من وقت لآخر؟	
25.		هل تنظفي عين وليدك برفق من الزاوية الداخلية للعين إلى الزاوية الخارجية؟	
26.		هل تستخدمين شاش نظيف ورطب لتنظيف عين وليدك؟	
27.		هل تستخدمين شاش مختلف لكل عين لتجنب العدوى المحتملة؟	
- الادراك علامات الخطر			
28.		هل تغسلي يديك بالماء والصابون قبل ارضاع وليدك؟	
29.		هل تزيل الحفاض المبللة لوليدك على الفور؟	
30.		هل تتابعي وضع وليدك الصحي اذا توقف عن التغذية بشكل جيد؟	
31.		هل تتابعي وضع وليدك الصحي اذا كان التنفس عنده سريعاً؟	
32.		هل تتابعي وضع وليدك الصحي إذا ارتفعت درجة حرارته (< 37.5 درجة مئوية)؟	
33.		هل تضعين وليدك على جانبه في السرير بعد عملية ارضاعه ؟	
34.		هل تتابعي (صحياً) وضع وليدك إذا كان يعاني من انخفاض في درجة حرارته (> 35.5 درجة مئوية)؟	

شكرك لحسن مشارك

Annex (4): List of Experts

Name	Place of work
Dr. Areefa Alkasseh	Islamic University of Gaza Strip
Dr. Hamza Abdeljawad	Palestine College of Nursing
Dr. Mohammad Al Jerjawy	Palestine College of Nursing
Dr. Ahmad Al Shaer	Islamic University of Gaza Strip
Dr. Ahmed Nijm	Al Azhar university- Gaza

Annex (5): Approval from Al Quds university

<p>Al Quds University Faculty of Health Professions Nursing Dept. –Gaza</p>		<p>جامعة القدس كلية المهن الصحية حائرية التمريض - غزة</p>
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التاريخ: 2019/7/22

حضرة الأخ/ د. رامي العبدلة
مدير عام الادارة العامة لتنمية القوى البشرية
السلام عليكم ورحمة الله وبركاته

حفظه الله

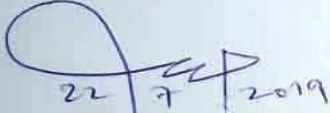
الموضوع: تسهيل مهمة الطالبة قادية جودة

تهديكم كلية المهن الصحية بجامعة القدس أطيب التحيات، ونرجو من حضرتكم مساعدة الطالبة المذكورة بخصوص جمع معلومات خاصة بموضوع:


Knowledge and Practices of Postnatal Primiparous Mothers towards Newborns' Care at Governmental Primary Health Centers in Gaza Strip

وذلك من خلال استبيانات للأمهات في عيادات ما بعد الولادة بمراكز الرعاية الأولية بوزارة الصحة (شهداء الرمال، شهداء الزيتون، صلبة الحرازين، شهداء دير البلح، شهداء جباليا، شهداء خانينوس، شهداء رفح) وذلك ضمن رسالة الماجستير الخاصة بها لبرنامج تمريض صحة الأم والطفل.

وتفضلوا بقبول وافر الاحترام والتقدير



د. حمزة محمد عبد الجواد
استاذ مساعد في علوم التمريض
منسق برامج ماجستير التمريض بغزة
كلية المهن الصحية - جامعة القدس
hamjawad1@gmail.com
تلفاكس: +972 8 2644220
خلوي: +972 599 852755



Tel: 08 2644210+08 2644220 Tel. Fax: 08 2644220	08 2644210+08 2644220 082644220
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Annex (6): Approval from Helsinki Committee



المجلس الفلسطيني للبحوث الصحية
Palestinian Health Research Council

تعزيز النظام الصحي الفلسطيني من خلال مأسسة استخدام المعلومات البحثية في صنع القرار

Developing the Palestinian health system through institutionalizing the use of information in decision making

Helsinki Committee
For Ethical Approval

Date: 2019/8/5

Number: PHRC/HC/591/19

Name: Fadia Mahmoud jouda

الاسم:

We would like to inform you that the committee had discussed the proposal of your study about:

نفيدكم علماً بأن اللجنة قد ناقشت مقترح دراستكم حول:

Knowledge and Practices of Postnatal Primiparous Mothers towards Newborns'
Care at Governmental Primary Health Centers in Gaza Strip

The committee has decided to approve the above mentioned research. Approval number PHRC/HC/591/19 in its meeting on 2019/8/5

وقد قررت الموافقة على البحث المذكور عاليه بالرقم والتاريخ المذكوران عاليه

Signature

Member

Member

Chairman

Genral Conditions:-

1. Valid for 2 years from the date of approval.
2. It is necessary to notify the committee of any change in the approved study protocol.
3. The committee appreciates receiving a copy of your final research when completed.

Specific Conditions:-



E-Mail: pal.phrc@gmail.com

Gaza - Palestine

غزة - فلسطين
شارع النصر - مفترق العيون

Annex (7): Approval from MOH

State of Palestine
Ministry of health



دولة فلسطين
وزارة الصحة

التاريخ: 30/07/2019
رقم المراسلة: 347943

السيد : رامي عيد سليمان العبادله المحترم

مدير عام بالوزارة /الإدارة العامة لتنمية القوى البشرية - /وزارة الصحة

السلام عليكم ،،،

الموضوع/ تسهيل مهمة الباحثة/فادية جودة

التفاصيل //

بخصوص الموضوع أعلاه، يرجى تسهيل مهمة الباحثة/ فادية محمود جودة
الملتحقه ببرنامج ماجستير التمريض - تخصص صحة الأم والطفل - كلية المهن الصحية - جامعة القدس أبوديس في
إجراء بحث بعنوان:-

"Knowledge and Practices of Postnatal Primiparous Mothers towards Newborns' Care at Governmental Primary Health Centers in Gaza Strip"

حيث الباحثة بحاجة لتعبئة استبانة من عدد من النساء بعد الولادة (الولادة الأولى) في عيادات ما بعد الولادة في مراكز
الرعاية الأولية في محافظات قطاع غزة.

نأمل توجيهاًكم لذوي الاختصاص بضرورة الحصول على الموافقة المستنيرة من النساء اللاتي هن على استعداد
 للمشاركة في الدراسة ومن ثم تمكين الباحثة من التواصل معهن، بما لا يتعارض مع مصلحة العمل وضمن أخلاقيات
 البحث العلمي، ودون تحمل الوزارة أي أعباء أو مسئولية.
وتفضلوا بقبول التحية والتقدير،،،

ملاحظة / تسهيل المهمة الخاص بالدراسة أعلاه صالح لمدة 6 شهر من تاريخه.

محمد إبراهيم محمد السرساوي

مدير دائرة الإدارة العامة لتنمية القوى البشرية -



التحويلات

إجراء انكم بالخصوص (30/07/2019)	← رامي عيد سليمان العبادله (مدير عام بالوزارة)	■ محمد إبراهيم محمد السرساوي (مدير دائرة)
إجراء انكم بالخصوص (30/07/2019)	← ماهر محمود عبد الهادي شامية (مدير عام بالوزارة)	■ رامي عيد سليمان العبادله (مدير عام بالوزارة)
إجراء انكم بالخصوص (31/07/2019)	← مدحت عباس خضر حسن (مدير عام بالوزارة)	■ رامي عيد سليمان العبادله (مدير عام بالوزارة)
إجراء انكم بالخصوص (01/08/2019)	← صلاح الدين علي عبد الحفيظ الرنتوسي (مدير دائرة)	■ مدحت عباس خضر حسن (مدير عام بالوزارة)
لعمل اللازم (01/08/2019)	← عبد الكريم سعيد العبد النجار (مدير دائرة)	■ مدحت عباس خضر حسن (مدير عام بالوزارة)
لعمل اللازم (01/08/2019)	← نهله صقر سليمان الأعرج (مدير دائرة)	■ مدحت عباس خضر حسن (مدير عام بالوزارة)
لعمل اللازم (01/08/2019)	← فواز ادريس محمد ابو زياده (طبيب مدير)	■ مدحت عباس خضر حسن (مدير عام بالوزارة)

Gaza

Tel. (+970) 8-2846949
Fax. (+970) 8-2826295

تلفون. (970+) 8-2846949
فاكس. (970+) 8-2826295

غزة

Annex (8a): English form of consent form

CONSENT FORM

Title of research:

Knowledge and Practices of Postnatal Primiparous Mothers towards Newborns' Care at Governmental Primary Health Centers in Gaza Strip

I agree to participate in a research project led by student: Fadia Jouda from Al- Qud University. The purpose of this document is Knowledge and Practices of Postnatal Primiparous Mothers towards Newborns' Care.

Dear Participant:

The information provided by you in this questionnaire will be used for research purposes. It will not be used in a manner which would allow identification of your individual responses. Therefore, all given data will be prepared and explained in terms of tables, figures and ratio without mention of names. Also, your participation in this study is voluntary that you have the full right to refuse or withdraw from the study if you feel uncomfortable in any way during the questionnaire filling.

The filling of questionnaire will last approximately 10-15 minutes

Thank you very much for agreeing to participate in this research

Signature of Participant _____

Date _____

نموذج موافقة

عنوان الدراسة:

معرفة وممارسات الأمهات البكرات بعد الولادة اتجاه رعاية الأطفال حديثي الولادة في المراكز الصحية الأولية الحكومية في قطاع غزة

أوافق أنا الموقع أدناه على المشاركة في الدراسة المعدة بواسطة الطالبة: فادية جوده من جامعه القدس أبو ديس والتي تهدف إلى معرفه وممارسات الأمهات البكرات بعد الولادة تجاه رعاية الأطفال حديثي الولادة في المراكز الصحية الأولية الحكومية

عزيزتي المشاركة:

المعلومات التي تقدمها في هذه الاستبانة سوف تستخدم لأغراض البحث العلمي، و لن يتم استخدامها بطريقة من شأنها أن تسمح بتحديد استجابتك الفردية الخاصة بك. لذا سيتم عرض جميع البيانات وتوضيحها على شكل جداول و أرقام ونسب احصائية دون ذكر أسماء. مشاركتكم في هذه الدراسة طوعية، لذا لديك الحق الكامل في رفض المشاركة أو الانسحاب من الدراسة إذا شعرت بعدم الارتياح بأي شكل من الأشكال خلال تعبئة الاستبيان.

تعبئة الاستبانة تستغرق حوالي 10-15 دقيقة

مع خالص جزيل الشكر

التاريخ

توقيع المشاركة

العنوان: معرفه وممارسات الأمهات البكاره مرحله ما بعد الولاده اتجاه رعايه الأطفال حديثي الولاده في المراكز الصحيه الأوليه الحكوميه في قطاع غزة

إعداد: فادية جوده

إشراف: د. أكرم أبو صلاح

ملخص الدراسة:

تُعرف رعايه ما بعد الولاده (PNC) بأنها تلك الرعايه المقدمه للأم وطفلها المولود من لحظه الميلاد وحتى الأسابيع الستة الأولى من حياة الوليد، حيث أن الرعايه الأساسيه لحديثي الولاده تشتمل على الرضاعه الطبيعيه، التطعيم، العناية بدرجه حراره المولود، العناية بالحبل السري، العناية بالعين، والتعرف على العلامات الخطيره للوليد.

هدفت هذه الدراسة إلى تقييم معرفه وممارسات الأمهات البكاره في مرحله ما بعد الولاده اتجاه رعايه الأطفال حديثي الولاده داخل المراكز الصحيه الأوليه الحكوميه في قطاع غزة، حيث استخدم الباحث لغرض تطبيق هذه الدراسة المنهج الوصفي. تكونت عينه الدراسة من 345 من الأمهات البكرات تم اختيارهن من 7 مراكز للرعايه الصحيه الأوليه (عياده جباليا، صبحه، الحرازين، الرمال، الزيتون، دير البلح، خان يونس، و رفح) ممثله عن المحافظات الخمس في قطاع غزة . كان معدل الاستجابة 99 %. وقد أجريت دراسة تجريبية على 21 أم لاستكشاف مدى ملائمة أدوات الدراسة. تم جمع البيانات باستخدام استبيان المقابله ، تم جمع البيانات في وقت تطعيم المولود ابره BCG وابره الشهر الأول. وقد تم جمع البيانات في حوالي شهر واحد. تم تحليل البيانات باستخدام SPSS الإصدار 22 لإدخال البيانات وتحليلها. طلب موافقه أخلاقيه من جامعه القدس لجنة هلسنكي. تم قياس معامل الموثوقية للعينه التجريبية وكذلك للدراسة الفعلية ، معامل ألفا كرو نباخ هو 0.74.

أظهرت النتائج أن متوسط أعمار المشاركات في الدراسة بلغت 22.17 سنة بانحراف معياري 4.25، ومتوسط أعمار المواليد كانت 18.60 يوماً بانحراف معياري 11.7، كما سجل أن 96.8% من الامهات كن ربات بيوت، و 80% سجلن دخل الأسرة لديهن أقل من 1000 شيكل شهرياً، 61.2% حصلن على الثانويه العامه، كما بينت الدراسة أن 39.1% منهن يسكن محافظة غزة،

82.9% يعيشون نمط الأسرة النووية، وكذلك 75.4% منهم أظهروا أنهم تلقوا معلومات عن رعاية الأطفال حديثي الولادة.

تشير النتائج أيضاً إلى أن درجة المعرفة الكلية لدى الأمهات حول رعاية الأطفال حديثي الولادة بلغت 72.75%، وأن 62.9% من المشاركات في الدراسة صُنِّفوا كمستوى متوسط من المعرفة (60 - 80%)، 22.3% صُنِّفوا كمستوى مرتفع (> 80%)، بينما 14.8% صُنِّفوا كمستوى منخفض من المعرفة (< 60%). كما أن المتوسط العام للممارسة الصحيحة لرعاية الأطفال حديثي الولادة بلغت 84.9%، حيث أن 73% من المشاركات صُنِّفت الممارسة لديهن على أنها عالية المستوى، 25.5% متوسطة المستوى، و 1.5% منخفضة المستوى من الممارسة الصحيحة. علاوة على ذلك، أظهرت النتائج أن هناك علاقة ذات دلالة إحصائية قوية ($r = 0.587, p < 0.001$) بين المعرفة و ممارسة الأمهات البكرات لرعاية الأطفال حديثي الولادة. كما أظهرت الدراسة وجود فروقات ذات دلالة إحصائية في مستويات المعرفة اتجاه رعاية الأطفال حديثي الولادة والمتعلقة بعمر الأم، عمر الوليد، و مركز الرعاية الصحية؛ بينما لم تكن هناك فروق ذات دلالة إحصائية في مستويات المعرفة المتعلقة بعمل الأم، ودخل الأسرة، ومستوى التعليم، وتلقي المعلومات. من ناحية أخرى، كانت هناك فروق ذات دلالة إحصائية في مستويات الممارسة الصحيحة لرعاية حديثي الولادة وتلقي الأمهات للمعلومات، في حين لم تكن هناك فروق ذات دلالة إحصائية في المتغيرات الأخرى.

خلصت الدراسة الحالية بأن الأمهات البكرات لديهم مستوى معتدل من المعرفة وممارسة عالية حول رعاية الأطفال حديثي الولادة. لذلك، يوصى بزيادة وعي الأم من خلال برنامج تعليمي مقترن بنظام فعال لتقديم الرعاية الصحية لزيادة مستويات المعرفة بين الأمهات على رعاية الأطفال حديثي الولادة.