

**MATERNAL FACTORS ASSOCIATED WITH
ESSENTIAL NEW-BORN CARE PRACTICES AMONG
POSTNATAL MOTHERS ATTENDING KENYATTA
NATIONAL HOSPITAL**

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**Maternal Factors Associated With Essential New-Born Care
Practices among Postnatal Mothers Attending Kenyatta National
Hospital**

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Technology**

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DECLARATION

This thesis is my original work and has not been presented for a degree in any other University

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This thesis has been submitted for examination with my/our approval as University Supervisors

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DEDICATION

I dedicate this thesis to my family.

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TABLE OF CONTENTS

DECLARATION.....	ii
DEDICATION.....	iii
ACKNOWLEDGEMENT.....	iv
TABLE OF CONTENTS.....	v
LIST OF TABLES.....	x
LIST OF FIGURES.....	xi
LIST OF APPENDICES.....	xii
ABBREVIATIONS AND ACRONYMS.....	xiii
OPERATIONAL DEFINITION OF TERMS.....	xiv
ABSTRACT.....	xv
CHAPTER ONE.....	1
INTRODUCTION.....	1
1.1 Background of the Study.....	1
1.2 Statement of the Problem.....	4
1.3 Justification of the Study.....	5
1.4 Research Questions.....	6
1.5 Objectives of the Study.....	6
1.5.1 General Objective.....	6
1.5.2 Specific Objectives.....	6
1.5.3 Null hypothesis.....	7
1.6 Theoretical framework.....	7

1.7 Conceptual Framework	7
CHAPTER TWO	9
LITERATURE REVIEW.....	9
2.1 Introduction	9
2.2 Breastfeeding Practices	9
2.3 Thermoregulation Practices	11
2.4 Hygiene Practices.....	12
2.5 Maternal factors associated with essential newborn care	13
2.6 Gaps	14
CHAPTER THREE	15
RESEARCH METHODOLOGY	15
3.1 Study Design	15
3.2 Study Site	15
3.3 Study Population	16
3.3.1 Inclusion Criteria.....	16
3.3.2 Exclusion Criteria.....	16
3.4 Sample Size Determination.....	16
3.5 Sampling Technique.....	17
3.6 Data Collection Tools	18
3.6.1 Questionnaires.....	18

3.6.2 Focused Group Discussion.....	18
3.6.3 Observation	18
3.7 Pre-Testing of Data Collection Tool	19
3.7.1 Validity.....	19
3.7.2 Reliability.....	19
3.8 Data Collection.....	20
3.9 Data Management and Analysis.....	21
3.9.1 Data entry and cleaning.....	21
3.9.2 Data storage.....	22
3.9.3 Data analysis	22
3.10 Ethical Considerations	22
CHAPTER FOUR.....	24
RESULTS	24
4.1 Introduction	24
4.2 Maternal Health Seeking Behaviour	25
4.3 Breastfeeding Practices	27
4.3.1 Questionnaire Results of Breastfeeding Practices.....	27
4.3.2 Observation Results on breastfeeding.....	27
4.3.3 Breastfeeding FGD Results.....	28
4.3.4 Summary of Breastfeeding Practices	29

4.3.5 Maternal Factors associated with Breastfeeding Practices	30
4.4 Thermoregulation Practices	31
4.4.1 Questionnaire Results of Thermoregulation Practices	31
4.4.2 Thermoregulation FGD Results	32
4.4.3 Summary of Thermoregulation Practices.....	34
4.4.4 Observation Results on thermoregulation.....	34
4.4.5 Maternal Factors associated with Thermoregulation Practices.....	35
4.5 Hygiene Practices.....	36
4.5.1 Questionnaire Results of Hygiene Practices	37
4.5.2 Observation Results on hygiene.....	38
4.5.3 Hygiene FGD Results	38
4.5.4 Summary of Hygiene Practices	39
4.5.5 Maternal Factors associated with Hygiene Practices	40
4.6 Maternal Factors and the New-born Care Practices.....	41
4.6.1 Summary of New-born Care Practices.....	42
4.6.2 Association between Maternal Factors and the New-born Care Practices	42
4.6.3 Regression Analysis	43
CHAPTER FIVE.....	45
DISCUSSION, CONCLUSION AND RECOMMENDATIONS.....	45
5.1 Introduction	45

5.2 Discussion	45
5.2.1 Breastfeeding Practices among Mothers with New-Born Babies	45
5.2.2 Thermoregulation Practices among Mothers with New-born Babies	47
5.2.3 Hygiene Practices among Mothers With New-born Babies	48
5.2.4 Association between Maternal Factors and the Practice of New-born Care among Mothers With New-Born Babies.....	49
5.3 Conclusion	50
5.4 Recommendations	50
5.5 Suggestions for Further Study.....	51
REFERENCES.....	52
APPENDICES	62

LIST OF TABLES

Table 3.1: Reliability Results	20
Table 4.1: Socio-Demographic Characteristics of Respondents	25
Table 4.2: Maternal Health seeking Behaviour	26
Table 4.3: Breastfeeding Practices	27
Table 4.5: Maternal Factors associated with Breastfeeding Practices.....	31
Table 4.6: Thermoregulation Practices.....	32
Table 4.7: Observation Results on thermoregulation	35
Table 4.8: Maternal Factors associated with Thermoregulation Practices	36
Table 4.9: Hygiene Practices	37
Table 4.10: Observation Results on hygiene	38
Table 4.11: Maternal Factors associated with Hygiene Practices	41
Table 4.12: Association between Maternal Factors and the New-born Care Practices	43
Table 4.13: Regression Analysis	44

LIST OF FIGURES

Figure 1.1: Conceptual Framework	8
Figure 4.1: Summary of Breastfeeding Practices.....	30
Figure 4.2: Summary of Thermoregulation Practices	34
Figure 4.3: Summary of Hygiene Practices	40
Figure 4.4: Summary of New-born Care Practices	42

LIST OF APPENDICES

Appendix I: Consent Form	62
Appendix II: Questionnaire	67
Appendix III Observation Guide	77
Appendix IV: Focused Group Discussion Guide.....	79
Appendix V: Letters of Authorisation	81
Appendix VI: Analysis Output	85

ABBREVIATIONS AND ACRONYMS

ANC	Antenatal Care
COR	Crude Odds Ratio
EBF	Exclusive Breast-Feeding
EIBF	Early initiation of breastfeeding
ENBC	Essential New-Born Care
FGD	Focused group discussion
JKUAT	Jomo Kenyatta University of Agriculture and Technology
KDHS	Kenya Demographic Health Survey
KMC	Kangaroo Mother Care
KMTC	Kenya Medical Training College
KNH	Kenyatta National Hospital
NACOSTI	National Commission for Science, Technology and Innovation
PNC	Post Natal Clinic
SDG	Sustainable Development Goal
SPSS	Statistical Package for Social Sciences
WHO	World Health Organization

OPERATIONAL DEFINITION OF TERMS

Breastfeeding	Feeding of babies and young children with milk from the mother's breast.
Essential new-born care	A comprehensive strategy designed to improve the health of new-born through interventions before conception, during pregnancy, at and soon after birth, and in the postnatal period.
Essential new-born care practices	These are interventions geared towards improving the outcome of newborns. They include exclusive breastfeeding, correct thermoregulation and improved hygiene practices.
Exclusive breastfeeding	Feeding infants with only breast milk either directly from breast or expressed.
Hygiene	Conditions and practices that help to maintain health and prevent the spread of diseases in new-born.
Thermoregulation	Practices aimed at avoiding hypothermia in new-born.
Training	Health education given to post natal mothers on essential new born care.

ABSTRACT

The World Health Organization emphasizes the need to continuously improve care practices at birth in order to decrease neonatal morbidity and mortality. Despite sensitization of mothers regarding the importance of essential new-born care, common infections such as diarrhoea, sepsis and pneumonia of neonates persist at Kenyatta National Hospital (KNH). The primary purpose of this study was to assess maternal factors associated with essential new-born care practices among postnatal mothers. Specifically, the study sought to assess maternal factors associated with essential new-born practices comprising breastfeeding, thermoregulation and hygiene practices among postnatal mothers. This was an analytical cross-sectional study design utilising a triangulation approach. The study population comprised mothers attending post-natal clinic and paediatrics emergency unit at KNH. Slovin's Formula was used to calculate a sample size of 200 mothers. Systematic sampling was used to select eligible subjects. Data collection was done using a semi-structured interviewer-administered questionnaire, an observation guide and a focused group discussion guide. Uni variate data analysis for the study variables was conducted using descriptive statistics comprising frequencies and percentages. Analysis was conducted with the help of SPSS version 25.0. Qualitative data was transcribed and major themes discussed along with quantitative findings. The study found that 59% of the respondents in the study had poor new-born care practices. Chi-square tests showed that age ($p < 0.001$), education ($p < 0.001$), parity ($p = 0.031$), ANC attendance and ANC initiation ($p = 0.021$) were all significant. Age ($p = 0.043$), parity ($p < 0.001$) and ANC attendance ($p < 0.001$) remained significant in the regression analysis. Multivariate analysis revealed that, education level, (AOR = 3.87, 95%CI: 1.31 – 10.51, $p = 0.010$), age (≥ 30 years), (AOR = 2.52, 95%CI: 1.41 – 8.71, $p = 0.005$) and ANC attendance (AOR = 2.01, 95%CI: 1.01 - 6.43, $p = 0.033$) were independent predictors of essential new-born care practices. The study concluded that there is an association between maternal factors and new-born care practices. The research therefore recommended that health education given to mothers in antenatal care should emphasize that mothers initiate breastfeeding immediately after birth. Health education provided in the antenatal care clinic should highly focus on sensitizing mothers on cleanliness.

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

Most neonatal deaths arise from preventable causes. The major causes relate to early initiation of breastfeeding, thermocare and cord care. Improving practices related breastfeeding, thermocare and cord care can prevent neonatal morbidity and mortality (Tafere, Afework & Yalew, 2018). The World Health Organization (2020) emphasizes the need to continuously improve care practices at birth in order to decrease neonatal morbidity and mortality. The care practices are described in details as components of essential new-born care (ENBC) practices. Essential new-born care (ENBC) comprises of early initiation of breast feeding, thermal care and cord care. Breastfeeding should be initiated immediately after birth or within the first hour after birth, thermal practices protect the baby from low temperatures and cord care involves keeping the babies cord clean and dry. Adhering to ENBC is key in ensuring better neonatal outcomes in poor resource settings. However, coverage of ENBC is far below the universally recommended levels in majority of the low resource setups (Ayete-Nyampong & Udofia, 2020).

Essential new-born care is a strategy intended to improve the outcomes of new-borns through a series of interventions in the preconception, during pregnancy, soon after birth, and in the postnatal period (Chichiabellu et al., 2018). ENBC practices include immediate initiation of breastfeeding, drying (wiping) and wrapping the new-born immediately after birth, initiating skin-to-skin contact with the mother or relative volunteer, delayed bathing and dry cord care, (WHO, 2020). There is evidence that adherence to recommended essential new-born care practices substantially reduces morbidity and mortality risk, especially for low birth weight infants (Semanew et al., 2020).

Available data shows poor essential new-born care practices among mothers. According to Bee et al. (2018), there is variation in the prevalence of immediate new-born care practices between countries, with the exception of skin-to-skin contact

after delivery that was universally low. Peven et al. (2020) explains that unlike in developed countries, there is very poor compliance to low-cost ENC interventions in the developing world. A study by Chichiabellu et al. (2018) showed that the prevalence of essential newborn care practice was 24% in Ethiopia. A similar study in Ethiopia by Misgna et al. (2016) found higher (92.9%) practice. Olorunsaiye et al. (2020) found that early newborn care in Nigeria was sub optimal and the quality of this care varied across delivery locations and birth attendants. In a study conducted in Ghana, Saaka et al. (2018) found that the overall prevalence of adequate newborn care comprising good neonatal feeding practices, optimal thermal care and good cord care, was only 15.8%. In Kenya, studies by Kung'u et al. (2018), Murphy et al. (2018) and Walker et al. (2020) show poor essential newborn care practices in various settings.

Breastfeeding confers numerous health and developmental advantages for infants. Breastfeeding is undoubtedly a simple, healthy and extremely cost-effective feeding method that fulfils all the nutritional needs of an infant (Mise et al., 2017). Timely initiation of breastfeeding has proven to be beneficial to the baby, mother and the entire family. Baby friendly initiative standards demand early and mandatory initiation of breastfeeding where no contraindication exists (Kamath et al., 2016). In addition, the WHO gives further recommendations on exclusive breastfeeding for the first six months of life and continue together with complementary feeding for two years or more. To ensure effective breastfeeding, it should be offered on demand and at least 8 times in 24 hours. Continuous suckling stimulates milk production ensuring a steady flow of breast milk (Elyas et al., 2017). However, Poor breastfeeding practices are widespread all over the world and especially in sub-Saharan Africa. Investigations in areas where resources are scarce reveal that current practices are way below the recommended ENBC practices. Consequently, the same regions account for more than half of neonatal deaths that occur globally (Saaka et al., 2018).

Hypothermia is a condition in which the body temperature falls below normal levels immediately after birth. It remains a worldwide issue and is associated with neonatal morbidity and mortality (McCall et al., 2018). The universally acceptable core body temperature for the human body 37°C. Several areas of the body can be used to

assess the temperature of new-borns. However, the axillary temperature is preferred owing to less complications arising from the method. According to Lemyre and Chau (2018) hypothermia in new-borns occurs when core temperature drops below 36.3°C. Thermal care protection of new-born is essential to reduce neonatal morbidity and mortality. To protect the new-born from hypothermia, specific practices are recommended at birth and the first few days of life. The practices include prompt drying after birth, direct skin-to-skin contact and covering the baby with warm clothing (Datta et al., 2017). It is recommended that practices that expose the new-born to low temperatures such as bathing be delayed in the first day of life (Khan et al., 2018). Skin to skin contact between the mother and baby and ensures the baby is kept warm by the mother. However, it has been established that there is inadequate utilization of thermal care practices across South Asia and sub-Saharan Africa (Khan et al., 2018). Coalter and Patterson (2017) attribute poor thermal care practices to be a significant contributor to neonatal deaths in low resource households.

Hygiene practices are very significant in new-born care. New-borns are more susceptible to infections because their immune system has not fully developed. Therefore, infection prevention is key in preventing infections in the early months of life (Mannava et al., 2019). According to Ngugi et al. (2019), there are situations that increase the chances of infections in new-borns. Wet nappies create an environment that erodes the skin mechanically, chemically and harbour microbes that can cause infections. It is important to avoid any toxic substances and abrasive materials during skin cleansing of the baby (Begum & Bhavani, 2016). The skin should be protected from injury to preserve the skin's own defence mechanisms and avoid contaminating the baby's clothes and beddings during cleaning. Correct hand washing routine is very important in preventing diarrhoea and acute respiratory tract infections. World Health Organization (WHO) (2020) emphasizes that correct hand washing involves washing hands with soap and water. Hand washing should be done as often as possible. However, it is mandatory to wash hands after visiting the washrooms, after changing the baby's diapers, before cooking, and before eating or feeding the baby.

Despite continued emphasis on correct new-born care practices, sub optimal care still persists. Consequently, neonatal mortality rates have remained constant over time

and contribute about 40% of all under-five deaths globally (Hug et al., 2019). Globally, more than three million neonates die every year. Statistics from Ghana show a neonatal mortality of 29 /1000 live births. That means 68% of all under five deaths occur before a child's first birthday and 48% occur in the first month of life (Saaka et al., 2018). Statistics from Ethiopia peg neonatal mortality at 37/1000 live births (Misgna et al., 2016). Kenya Demographic Health Survey (KDHS) pins neonatal mortality rate at 22 /1000 live births. All these statistics presents neonatal mortality rates way above the Sustainable Development Goal (SDG) 3 which aims to decrease neonatal mortality rate to 12/1000 live births by 2030 (Amolo et al., 2017). Data from Kenyatta National Hospital (KNH) health information department also show a stagnant trend in neonatal mortality. Data from 2014, 2015, 2016, 2017 and 2018 places neonatal mortality at 18.44%, 16.1%, 20.29%, 18.75% and 20.09% respectively. According to the Health Information Department at KNH, sepsis, jaundice and pneumonia stands as the leading causes of neonatal death.

Availability of appropriate information on ENBC is vital to its practice. Knowledge of ENBC, locality of residence and mothers' occupation are significantly associated with mothers' practices of ENBC. The level of maternal knowledge and skills in the practice play vital roles in the prevention of neonatal deaths (Misgna et al., 2016). New-born care practices are also related with some demographic and socioeconomic characteristics (Sakib, 2017). Educating the mothers and other members of the family play a crucial part in the decrease of neonatal mortality and morbidity (Mandal & Ghosh, 2016). Peven et al. (2020) add that owing to the fact that communities have distinctive cultures and traditions, new-born care practices differ from one community to the other. This study seeks to establish maternal factors associated with essential new-born care practices among post-natal mothers attending KNH.

1.2 Statement of the Problem

ENBC practices immediately after birth such as early initiation of breastfeeding (within one hour) thermal care (immediate drying and delayed bathing) and hygienic cord and skin care are recommended to save new-born lives (Arba & Zana, 2020). Effective promotion of ENBC has the capacity to decrease new-born deaths in low

income countries. Despite sensitization of mothers on the importance of essential new-born care, common infections such as diarrhoea, sepsis and pneumonia of neonates persist at Kenyatta National Hospital which is an indication that new-born care practices are not observed as recommended. Most of the neonatal infections and infection-related deaths could be avoided by complying with breastfeeding, thermal care and hygiene recommendations. Despite being an important health problem studies assessing essential new-born care practices are scarce. Amolo et al. (2017) assessed knowledge of postnatal mothers on ENBC practices but failed to assess the practices. A study was therefore necessary to focus on maternal factors associated with ENBC practices. It is against this backdrop that the study seeks to assess maternal factors associated with essential new-born care practices among postnatal mothers attending KNH.

1.3 Justification of the Study

Essential new born care practices help prevent many new-born emergencies (WHO, 2020). Peven et al. (2020) indicate that starting breast feeding instantly in the first hour after birth has a protective effect against neonatal infections, the author emphasizes that early breast feeding ensures close contact between the baby and the mother. It also reduces chances of hypothermia, as well as hypoglycaemia. Thermal care protection of new-born is essential to reduce neonatal morbidity and mortality. It is therefore vital to assess maternal factors associated with essential new-born care practices to identify the gaps and therefore improve on practices to reduce neonatal mortality and morbidity. The findings of this study will add to the body of knowledge on essential new-born care practices to nurses working in post-natal clinic and paediatrics department in Kenyatta National Hospital. It may significantly refresh health providers' role in educating mothers on essential new-born care components and therefore make necessary amendments to enhance quality care to the patients. Mothers attending post-natal clinic and paediatrics department in Kenyatta National Hospital will benefit from the findings of the study by realizing how their practices impact the health outcomes of their new-born. The administration of Kenyatta National Hospital may use the findings to identify factors affecting new-born care and therefore offer evidence based standard operating procedures. The

findings may also be used as reference material by authors in new-born care literature and research. The study may also identify gaps that other researchers can take up in new studies.

1.4 Research Questions

- i. What are the breastfeeding practices among mothers with new-born babies attending Kenyatta National Hospital?
- ii. What are the thermoregulation practices utilized among mothers with new-born babies attending Kenyatta National Hospital?
- iii. What are the neonatal hygiene practices among mothers with new-born babies attending Kenyatta National Hospital?
- iv. What is the association between maternal factors and the new-born care practices among mothers Kenyatta National Hospital?

1.5 Objectives of the Study

The study was guided by the following objectives:

1.5.1 General Objective

To explore maternal factors associated with essential new-born care practices among mothers with new-born babies attending Kenyatta National Hospital.

1.5.2 Specific Objectives

- (i) To establish breastfeeding practices among mothers with new-born babies attending Kenyatta National Hospital.
- (ii) To determine the thermoregulation practices utilized among mothers with new-born babies attending Kenyatta National Hospital.
- (iii) To establish neonatal hygiene practices among mother with new-born babies attending Kenyatta National Hospital.
- (iv) To examine the association between maternal factors and the practice of new-born care among mothers with new born babies attending Kenyatta National Hospital.

1.5.3 Null hypothesis

There is no association between maternal factors and the practice of essential new-born care among mothers with new born babies attending Kenyatta National Hospital.

1.6 Theoretical framework

Norah Pender Health Promotion Theory

Health promotion entails developing healthy lifestyle and providing motivation for sustained healthy behaviors (Wilson, 2018). The health promotion model focuses on factors that influence the health of an individual. According to the model, an individual will engage in actions that are expected to yield positive or desired outcomes. The model also helps identify factors that can hinder achievement of good health (Maples, 2021). In this study the model will help understand how maternal factors play a role in the practice of ENBC. ENBC is a health promotion strategy for new-born. When the mothers understand the role they have to play in order for the new-born baby to achieve good health they are able to act on them to prevent diseases, and thus are able to achieve good health for their babies. Individual characteristics of the mother and experiences play big role in taking care the new-born because their action determine the outcome of baby's health. Several factors come into play like individual preferences; social economic status, situational influences and commitment to plan of action to determine the outcome of the new-born.

1.7 Conceptual Framework

The study sought to explore maternal factors associated with essential new-born care practices among mothers attending Kenyatta National Hospital. The independent variables in this study were maternal factors associated with a mothers' ability to offer essential care to a new-born. The confounding variables that are included in the study focus on health education to mothers on ENBC. The dependent variable of essential new born care practices has several components as outlined in the

conceptual framework. The study will seek to establish how maternal factors are associated with essential new-born care practices. Maternal practices are associated with the practice of ENBC are related to neonatal outcomes. Poor maternal practices associated with ENBC leads to increased neonatal morbidity and mortality (WHO, 2020).

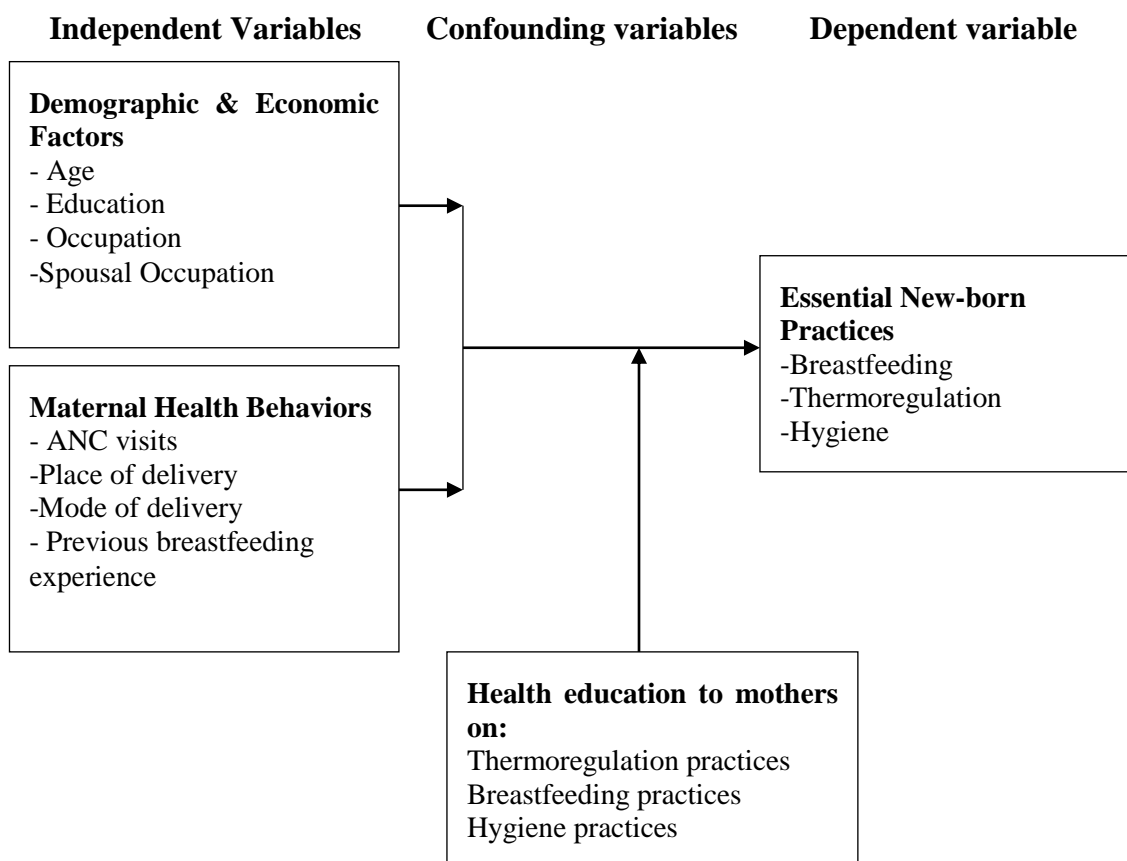


Figure 1.1: Conceptual Framework; source, WHO, (2020)

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter presents a review of empirical studies related to ENBC practices among mothers. It includes a review of past studies on maternal factors which are associated with ENBC practices which are breastfeeding practices, thermoregulation practices and hygiene practices. The purpose of the review was to establish what has already been done in way of research there by identifying gaps so as to justify the need of the current study.

2.2 Breastfeeding Practices

Optimal Breastfeeding is essential for child growth and development especially in new-born. Breastfeeding remains the primary source of nutrition for new-borns (Mututho et al., 2017). The WHO posits that infants ought to be exclusively breastfed in the first six months of life. Exclusive breast-feeding has several benefits to the new-born including; protection against infections, sensory development and cognitive development (Bhattacharjee et al., 2019). Also, early initiation of breastfeeding ensures the baby receives colostrum. Colostrum contains high levels of antibodies essential in providing the new-born with immunity. Effective breastfeeding entails; early initiation, correct attachment, acceptable frequency, exclusive breastfeeding for six months (Ahmed et al., 2019 and no need to clean the breast or nipples before breastfeeding.

Early initiation of breastfeeding (EIBF) has significant health benefits, but the practice in many parts of the world is far beyond the optimal. The WHO (2020) recommends initiation of breastfeeding immediately after birth or within one hour. However, available literature shows that a significant number of mothers delay initiation of breastfeeding. An analysis of literature by Alzaheb (2017), in the Middle Eastern region puts the rates of initiation of breastfeeding within the first hour of life at (11.4%) in a province of Saudi Arabia and 63.8% in Iran. All the studies reviewed

show a low prevalence of early initiation (34.3%) in the Middle East. An Indian study by Mise, Mise, Mise and Siddappa (2017) found that a majority of mothers (61.6%) failed to initiate breastfeeding within 1 hour after delivery. Delayed initiation of breastfeeding is associated with increased neonatal morbidity and mortality (Mise et al., 2017).

According to several studies, the most common reason for discontinuation breastfeeding was breast milk insufficiency, unsatisfactory growth of baby, caesarean section and delivery complication (Mise, et al., 2017). In some cases, mothers had a preferential practice of mixed feeding. In Saudi Arabia, Al-Mutairi, Al-Omran and Parameaswari (2017) found that majority of the mothers favoured mixed feeding over exclusive breastfeeding (51.6%). A significant proportion (29.4%) in the same study preferred artificial milk feeding.

Babu et al. (2018) assessed the time of initiation of breastfeeding among postnatal mothers and to establish factors contributing to early initiation in a tertiary hospital setting. The study found that it took an average of 94 minutes for initiation of breastfeeding. 1.4% of the babies were initiated early on breastfeeding. The most common reason identified for the delay was delayed rooming-in. Babies were brought by the mother's side way past the first hour of life. Another reason cited for delayed initiation was maternal exhaustion. Madeghe et al. (2016) examined how postpartum depression and malnutrition among women affects breastfeeding practices in an urban low resource settlement in Kenya. A significant number of women reported opting for mixed feeding because their children were not getting satisfied with the breast milk alone. Others described that they were not having sufficient amounts of milk due to lack. Also, a few mother claimed that they had to give their children water due digestive complications. Talbert et al. (2018) explored knowledge of and attitudes to, the practice of giving expressed breast milk. A majority of the participants did not have information on the practice of giving expressed breast milk to infants. However, they identified the practice of expressing breast milk as a way of relieving engorged breasts when the baby fails to breastfeed due to illness.

2.3 Thermoregulation Practices

Thermal protection is a major challenge for new-born survival in most developing regions. Berhea et al. (2018) study examined how knowledge influences new-born cares practice of mothers in urban societies. About 80% of respondents were aware that wrapping in a warm dry cloth is essential in protecting the baby from cold. 56.1% of the respondents did not demonstrate knowledge on skin to skin care to prevent the babies from hypothermia. Consequently, the mothers did not demonstrate sufficient levels of thermal care practices as recommended by WHO. However, mothers with knowledge on ENBC reported acceptable standards of thermal care practices.

Berhan and Gulema (2018) assessed knowledge among other factors that influence postnatal mothers essential new-born care practices in Addis Ababa. In the study, 68.6% of the mothers stated that warm cloth prevents heat loss, while 50.8% of mothers mentioned that mother-baby skin to skin contact protects the new-born from cold. In another Ethiopian study, Semanew et al. (2019) 80.8% of mothers reported to have wrapped the baby with warm clothes immediately after birth. Qazi et al. (2019) assessed the knowledge of mothers of new-borns on prevention of hypothermia. 55% of the responding mothers in the study did not report having knowledge on immediate drying and wrapping of the baby after birth. In the same study, 97% of the mothers had no knowledge on skin to skin thermal care for new-borns. The low levels of knowledge were also demonstrated in poor thermal care practices by the mothers. Consequently, the cases of neonatal morbidity were significantly higher as evident in the health facilities.

Mesekaa et al. (2017) study sought to find gaps in the knowledge and practices of ENBC among postnatal mothers at Juba Teaching Hospital. Panda et al. (2017) assessed the knowledge of mothers with low birth weight babies on prevention of hypothermia. 57% of the mothers were from rural low socioeconomic status areas and living in a nuclear family. In the study, the researchers also noted that 44% of the mothers had knowledge on immediate drying and covering after birth to keep the

baby warm. However, no mother had knowledge on skin to skin mother baby contact to keep the baby warm. Otherwise known as Kangaroo Mother Care (KMC).

Amolo et al. (2017) assessed maternal knowledge on selected components of ENBC. In the study very low levels of knowledge on thermoregulation were reported save for warm clothing (93%). Only 7% of the respondents were aware of KMC and 4% were aware if warm rooms as methods of protecting the new-borns from cold. There remains a low level of knowledge and poor ENBC practices in rural and urban areas. Specifically, low resource sub-Saharan Africa continues to report poor ENBC practices and consequently higher rates of neonatal morbidities and mortalities.

2.4 Hygiene Practices

The cord stump of a new-born is highly susceptible to infections is not handled with high hygiene standards. The WHO (2020) emphasizes the significance of hygienic practices during cord care to prevent potential infections. According to Majumder et al. (2018), there is a substantial knowledge gap about cord care, eye care, first bathing health standards among postnatal mothers. Begum and Bhavani (2016) conducted a study on hand washing practices among mothers with children under the age of five years. 79.3% of the responding mothers washed their hands with soap and water after visiting the toilet, 82.7% after changing the baby after defecation, 44.7% before cooking, 44.7% before meals and 41.3% prior to feeding the child. In the same study, some women (20.7%) reported to be using water only to wash hands. The main reason cited for not using soap was lack of soap at the sites for washing hands (Begum & Bhavani, 2016). Although more than 20% failed to use soap, 78.7% were aware of the importance of correct hand washing in disease prevention. In addition, 16.7% of the respondents reported not knowing importance of correct hand washing practice.

Bhandari and Paudyal (2016) explored the knowledge and practice of mothers on new-born care. The study showed that more than 95% of mothers do not wash hands before touching new-borns. However, 83% reported to wash hands before handling the cord stump. A significant number of mothers failed to wash hands after cleaning the baby's bottom after defecation. In the same study, majority of the mothers

(66.66%) keep their baby's genitalia clean all the times. They change and clean the baby with wet clothing. However, a significant number of mothers do not maintain correct eye and genitalia hygiene for their babies. Some unique practices were noted in the study (Abuidhali 2016) Jordanian women used salt water for bathing infant in the first week of life. The mothers also reported to be applying an antibiotic powder on the cord stump to facilitate drying and falling off. Salty bathing is detrimental to the baby's skin and causes drying.

In summary, neonatal morbidity and mortality continues to be a challenge for the healthcare system. Neonatal mortality rates have not changed much despite the practices. It is with this focus that many scholars seek to investigate how mothers' practice ENBC. In the above literature review, it is evident that there are significant gaps between what ENBC standards demand and what mothers actually practice. Maternal workload for mothers working outside the home and lack of social support systems affect mother's ability to take care of the neonate. Other factors noted in the review include, mothers' age, parity, and socioeconomic status, place of residence, level of education and knowledge on ENBC.

2.5 Maternal factors associated with essential newborn care

In Jordan, Altamimi, Al Nsour, Al dalaen and Almajali (2017) revealed that although women initiate early breastfeeding, majority cease exclusive breastfeeding prior to the child attaining 6 months. A significant proportion of the women (30%) attribute early cessation of breastfeeding to work. Kamath et al. (2016) conducted a study on mothers' perceptions and practices regarding breastfeeding and also noted extremely low levels of exclusive breastfeeding. Also, an Indian study by Mise et al. (2017) found that 36.6% of the infants were not exclusively breastfed. A significant number of mothers were able to initiate breastfeeding in the first hour of life. However, a number of unhealthy practices were seen to be adopted by a proportion of mother. Some decided to discard colostrum and adopted pre-lacteal feeding (Mise et al., 2017). Also, some respondents reported discontinuation of breastfeeding in cases of illness. 6% reported to have discontinued breastfeeding when their babies had fever or cold, 18% when babies experienced diarrhoea and 26% in cases of vomiting. In

the Mise et al. (2017) study, it was noted that there is a significant association between level of education and mother's perceived significance of breastfeeding. Additionally, mode of delivery significantly influenced initiation of breastfeeding.

Asemahagn (2016) carried out a study to assess the breastfeeding practices existing among mothers in an Ethiopian district. The study revealed a 99% initiation rate of breastfeeding with a 79% EBF rate in a span of 24 h prior to data collection time. Additionally, Vinay, Sandeep and Sridhar (2016) study showed that 15.84% received pre-lacteal feeds. In their study, 82 caesarean deliveries were included in the study. 35 (42.58 %) of the caesarean mothers feed their babies after 2 hours. Among mothers who had vaginal deliveries 41.07% were able to breastfeed their babies within half an hour. Majority of the mother cited separation from baby and fatigue as the main reason for delayed feeding in the Vinay et al. (2016) study. Evidently, all this study shows a laxity in timely initiation of breastfeeding, mixed feeding early in life and early cessation of breastfeeding. All these practices are contrary to the suggested essential new-born care practices.

2.6 Gaps

In conducting literature review the researcher noted that there are many studies in Kenya that have been conducted on new-born care practices. Majority of these studies focuses on knowledge and awareness of several aspects regarding new-born care. Consequently, among available studies, there exist inconsistencies in findings especially maternal factors associated with breastfeeding practices, thermal care and hygiene practices. This study explored breastfeeding practices, thermoregulation practices and hygiene practices. To provide a deeper insight into the practices, the researcher investigated how some specific maternal factors were associated the practice of ENBC.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Study Design

This was an analytical cross-sectional study design that utilized mixed methods. The study has included a test of hypothesis in identifying factors associated with essential new-born care practices. The researcher collected analyzed and interpreted quantitative and qualitative data in a single study to investigate new-born care practices. Johnson (2019) recommends mixed methods as a methodology in the health sciences to gain a more complete understanding of issues and hear the voices of participants. Triangulation is a research design that combines both qualitative and quantitative methods to gather data for an overall interpretation that looks at a variety of different factors (Hesse-Biber, 2010). According to Alavi et al. (2018), using a combination of qualitative and quantitative data can improve an evaluation by ensuring that the limitations of one type of data are balanced by the strengths of another. In this study, quantitative data was important in establishing the level of new-born care practices and its association with demographic and health seeking behaviours. Meanwhile qualitative research provided rich, detailed and emotionally driven, insights based on the personal views of the mothers on the study variables and provided possible reasons for the observed new-born care practices. Mixed methods were therefore best suited to assess essential new-born care practices among mothers with new-born babies attending Kenyatta National Hospital (KNH).

3.2 Study Site

The study was carried out in KNH, it was established in 1901 and has become the largest hospital in Kenya and East Africa. KNH is a teaching and referral hospital providing specialized medical care, training and research. KNH has 50 wards, 22 out-patient clinics, 24 theatre (16 specialized), paediatrics emergency unit and Accident & Emergency Department. Out of the total bed capacity of 1800, 209 beds are for the Private Wing (KNH, 2018). More than 500 babies are born at KNH every month. The New Born Unit caters for 100 babies a day. KNH New-born Unit also includes

the country's only Neonatal Intensive Care Unit in a public health institution. In the postnatal clinic, mothers are educated on breastfeeding, breast care, cord care, maternal and infant danger signs. The postnatal clinic is done once a week and sees an average of about 30 mothers per week. The paediatrics emergency unit is open daily and attends to about 70 clients per week. The participants from this study were recruited from the postnatal clinic and the pediatric emergency unit.

3.3 Study Population

The study population comprised of mothers with new-born babies attending the postnatal clinic and paediatrics emergency unit at KNH. The specific target population was breastfeeding mothers attending the postnatal clinic and pediatric emergency unit. The average monthly attendance in both units was about 400 mothers. The pediatric emergency unit attend to an average of 70 clients in a week, that is, an average of 280 clients a month. The postnatal clinic is scheduled once a week and sees an average of 30 clients every week, that is, about 120 clients in a month.

3.3.1 Inclusion Criteria

- Mothers with babies less than 28 days of age.
- Mothers with new-born babies attending postnatal clinic and pediatric emergency unit.
- Postpartum mothers with babies admitted at KNH through pediatric emergency unit.

3.3.2 Exclusion Criteria

- Mothers with new-born babies admitted due to birth related complications, congenital abnormalities and those who require intensive care.
- Mothers who could not breastfeed due to medical reasons.

3.4 Sample Size Determination

Slovin's Formula was used determine the sample size (Etikan & Bala, 2017).

$$n = N / (1 + N e^2)$$

Where: n= sample size, N= population, e =margin of error.

Therefore, in a population of 400 mothers attending the post-natal clinic and paediatrics emergency unit, the study used a sample of 200 mothers as shown in the formula below

$$n=400/ (1+400*0.05*0.05) =200$$

The study therefore used a sample of 200 mothers attending the Post-Natal Clinic and Paediatrics Emergency Unit in Kenyatta National Hospital.

3.5 Sampling Technique

Systematic random sampling was used to select eligible subjects. The sampling method is selected to ensure a randomly spread representative sample of the population. The study intended to collect data over 1 month collecting 200 questionnaires from the mothers in the postnatal clinic and the paediatrics emergency unit who meet the inclusion criteria. The number recruited in each unit was proportionate to the number of clients attended in a week. According to proportionate size, 140 (0.7x200) participants was from the pediatric emergency unit and 60 (0.3x200) from the postnatal clinic. The researchers selected the starting point randomly in the clinic register and then selected every n^{th} member in the register.

$$n^{\text{th}} = N/n \quad \text{That is, } 400/200 = 2.$$

Therefore, every 2nd mother was selected for the study. If a mother did not consent, the next mother was approached.

3.6 Data Collection Tools

The study used primary data through questionnaires, focus group discussion and observation.

3.6.1 Questionnaires

Data was collected using a semi-structured interviewer-administered questionnaire. The questionnaire had four parts A-D to collect data on socio-demographic characteristics of respondents, breastfeeding practices, thermoregulation practices and hygiene practices. The questionnaire had both closed and open-ended questions. The questionnaire is self-developed. The data collection tool was validated by a pre-test study.

3.6.2 Focused Group Discussion

A focused group discussion guide was used to give more insights on the quantitative data collected through the questionnaire. The focused group discussion guide is self-developed based on four major themes arising from the literature and focused on the research objectives. Only mothers who met the inclusion criteria and were participants in the pediatric emergency unit were included in the focused group. A total of four FGDs were conducted one for each of the 4 wards in the facility. Each focused group included ten mothers. Consent was availed for mothers in the focus group. The focused group discussion guide was used to direct the conversation. Audio recording was done and the data transcribed.

3.6.3 Observation

An observation check list was also adopted and was used to gather data on the actual ENBC practices by the mothers while in post-natal clinic and pediatric department. A total of 200 mothers were observed for breastfeeding, thermo-regulation and hygiene practices.

3.7 Pre-Testing of Data Collection Tool

3.7.1 Validity

Content validity was important in the establishment of accuracy and truthfulness of the research results. The validity of data was ensured by having trained research assistants administering the questionnaires to participants. The questionnaire was validated by a pre-test study at the postnatal clinic and paediatrics unit at Mbagathi level V hospital. The mothers at the postnatal clinic and paediatrics unit in the facility had similar characteristics to the population of focus in the main study. The researcher was able to adjust where needed to ensure the tool answers the study questions.

3.7.2 Reliability

To test the reliability of the instruments the researcher conducted a pre-test. The pre-test was conducted at Mbagathi level V hospital since it is close to the area of study and the target population is likely to have similar characteristics with the target population. The pre-test involved 20 respondents which is 10% of the main sample as recommended by Souza et al. (2017). The study tested the internal consistency of the instruments by computing Cronbach's alpha to determine the reliability of the instrument. Data was collected using the questionnaire and analysed for reliability using SPSS software version 25.0. A Cronbach's alpha of 0.8 and above was taken as acceptable reliability according to Cronbach (1957). In this study, a Cronbach's alpha coefficient of 0.83 was registered. Cronbach's alpha was used to determine the reliability of the instrument. Results in Table 4.1 show an average of 0.83. All the variables registered a Cronbach's alpha coefficient of above 0.7 which implies high reliability as recommended by Taber (2018).

Table 3.1: Reliability Results

Variable	Number of items	Cronbach's alpha
Socio-Demographic Characteristics	5	0.88
Maternal Health Seeking Behaviour	5	0.78
Breastfeeding Practices	11	0.8
Thermoregulation Practices	9	0.83
Hygiene Practices	12	0.85
Average		0.828

The data collection questionnaire was filled by a trained research assistant under the guidance and supervision of the principle investigator to obtain the demographic and clinical data. The research assistant recruited had a minimum of degree in nursing qualification. The research assistants were trained for two days to ensure that they are well conversant with the research tool and how to interact with respondents without causing any form of psychological harm. The first day of training was used to familiarize with the research tool. The second day of training focused on interacting with the respondents and tests the tool. The principle investigator (PI) led the data collection procedure and continuously supervising research assistants in ensuring that they collect quality data. The Principal Investigator recruited a qualified statistician who assessed, cleaned and analyzed the collected data.

3.8 Data Collection

On getting approval, the researcher visited the obstetrics and gynaecology and paediatrics department to inform them of the study. The researcher then moved to the specific study site to plan for data collection. Upon agreeing with the unit management, a day for commencing data collection was set. The researcher trained eight nurses not working in the specific study area to assist in data collection. For each data collection day, two researchers were assigned per data collection point based on their availability. The research assistants were nurses with at least a bachelor degree. The research assistants were trained by the researcher prior to

commencing data collection to ensure uniformity and correct interpretation of the research questions. They were trained on how to acquire informed consent, administer the questionnaire and probe for more information.

The study was conducted at the post-natal clinic and paediatric emergency unit as patients wait in line. Data collection was conducted in each clinic day for the post-natal clinic and every day in paediatrics emergency unit during the study period until the sample target for the unit was achieved. The researchers also made observation notes from all mothers interviewed in the postnatal clinic and paediatrics emergency unit. The researcher spent a day in the unit and made observations on essential newborn care practices by the mothers. The elements to be observed were outlined in the observation guide. To prevent researcher bias, trained research assistants also spent a day each in the unit and make observation notes for comparison.

The participants were not notified about the focus of the researcher during observation to prevent sudden change of behaviour. The researcher also held a focused group discussion with the mothers in the paediatric unit on essential newborn care practices. The focused group discussion included ten mothers who were previously interviewed in the paediatrics emergency unit. The focused group discussion guide was used to direct the conversation. Audio recording and taking of notes was done and the data transcribed.

3.9 Data Management and Analysis

3.9.1 Data entry and cleaning

After the data was collected using a structured questionnaire, it was correctly entered based on a pre-developed data tool using Epi data 3.2. Data entry was carried out by a data entry clerk. Each of the questionnaire was serialized to ensure that it is accurately entered and can be traced as well. Upon completion, the data was verified by a qualified Statistician to check for errors and any missing information. Corrections was done in relation to the original questionnaire to allow for easy analysis based on the identified objectives.

3.9.2 Data storage

Filled questionnaires were stored in a lockable cabinet only accessible to the Principal Investigator. Back up of soft data was stored in a flash disk and protected under passwords. The Data will be stored for a period of five years after which the hardcopy papers will be shredded into pieces, and the soft copy data will be stored in the repository.

3.9.3 Data analysis

Collected data was sorted, coded and entered into a computer using SPSS. Uni variate data analysis for the four study variables was conducted using descriptive statistics comprising frequencies and percentages. Analysis was conducted with the help of SPSS version 25.0.

Findings were presented using tables and figures. Chi-square was used to establish association between maternal factors and the practice of essential new-born care. Logistic regression analysis was performed to investigate the extent of association between maternal factors and ENBC practices. Odds ratio were calculated to inspect the strength of association. The qualitative data was transcribed to identify major themes. The themes formed the basis of comparison and analysis along with the descriptive statistics obtained from the quantitative data. Triangulation was done where qualitative and quantitative was integrated to make conclusive inferences regarding essential new-born care.

3.10 Ethical Considerations

The following ethical principles were upheld in the study; approval, voluntary participation, informed consent, beneficence, justice, anonymity and confidentiality. Approval for the study was sought from JKUAT, Letter of authorization, KNH/UON ethical committee (Ref: KNH-ERC/A/96) and NACOSTI (Ref No: 91938) (Appendix V). Participation in the study was voluntary and participants were required to sign a consent form. Names of participants were not taken to maintain anonymity. The participants were informed there was no benefit for participating in

the study. To ensure confidentiality, only the researcher and her supervisor had access to the data. In addition, the findings of the study were only used for academic purposes.

CHAPTER FOUR

RESULTS

4.1 Introduction

This chapter presents the findings of the study. It includes results on socio-demographic characteristics of respondents, maternal obstetric health behaviour, breastfeeding practices, thermoregulation practices and hygiene practices. A total of 200 respondents participated in the study.

Results in Table 4.1 show that 44.5% (n=89) of the respondents were aged between 18 and 25 years while 35.5% (n=71) were aged between 26 and 33 years. Majority 73.5% (n=147) were married. The results show that half 50% (n=100) of the respondents had secondary education as their highest level of education while 28% (n=56) had acquired college education. On occupation, 36% (n=72) were unemployed while 33.5% (n=67) were self-employed. Among those who were married, slightly less than half (43.5%, n=50) of their spouses were self-employed while 32% (n=33) were had a salaried job.

Table 4.1: Socio-Demographic Characteristics of Respondents

Demographic Characteristic	Category	Frequency	Percent
Age (years)	18-25	89	44.5
	26-33	71	35.5
	34-41	36	18
	42-49	4	2
Marital Status	Single	53	26.5
	Married	147	73.5
Level of education	None	2	1
	Primary	36	18
	Secondary	100	50
	College	56	28
	University	6	3
Occupation	Unemployed	72	36
	Casual	13	6.5
	Self-employed	67	33.5
	Salaried job	30	15
	Student	18	9
Spousal Occupation	Unemployed	8	6.1
	Casual	14	15.0
	Self-employed	50	43.5
	Salaried job	33	32.0
	Student	5	3.4

4.2 Maternal Health Seeking Behaviour

Results in Table 4.2 show that 48.5% (n=97) had 1 child, 26% (n=52) had 2 children while 14.5% (n=29) had 3 children. The vast majority 98.5% (n=197) delivered in a hospital. Majority 61.5% (n=123) of the respondents delivered through caesarean method. Slightly less than half 43.5% (n=87) made more than 4 visits to the antenatal clinic while 23.5% made 4 visits and 20.5% (n=41) made 3 ANC visits. Slightly

above half 55.5% (n=111) begun attending the antenatal clinic in their second trimester (4-6 months) while 36.5% (n=73) initiated ANC in their first trimester (1-3 months).

Table 4.2: Maternal Health seeking Behaviour

Behaviour	Response	Frequency	Percent
Number of children	1	97	48.5
	2	52	26.0
	3	29	14.5
	4	13	6.5
	5	3	1.5
	Over 5	6	3.0
Place of delivery	Hospital	197	98.5
	Home	3	1.5
Mode of delivery	Normal	73	36.5
	Assisted	4	2
	Caesarean	123	61.5
ANC attendance	1	9	4.5
	2	12	6.0
	3	41	20.5
	4	47	23.5
	More than 4	87	43.5
	Cannot remember	4	2.0
ANC initiation	1-3	73	36.5
	4-6	111	55.5
	7-9	16	8.0

4.3 Breastfeeding Practices

The first objective of the study sought to establish breastfeeding practices among mothers with new-born babies attending Kenyatta National Hospital. The results are presented in this section.

4.3.1 Questionnaire Results of Breastfeeding Practices

Results show that 31.5% (n=63) initiated breast-feeding between 1 and 3 hours after birth while 30.5% (n=61) initiated breast-feeding over 3 hours after birth. Majority 86.5% (n=173) breastfed on-demand. The vast majority 92.5% (n=185) did not discard the colostrum. Majority 68.5% (n=137) breastfed while lying. Majority 68% (n=136) indicated that they had received training on breastfeeding (Table 4.3).

Table 4.3: Breastfeeding Practices

Practice	Response	Frequency	Percent
Breastfeeding initiation	Immediately	26	13.0
	Within an hour	50	25.0
	1-3 hours	63	31.5
	Over 3 hours	61	30.5
Breastfeeding frequency	On-demand	173	86.5
	Thrice	7	3.5
	Four or more times	20	10
Discarded colostrum	Yes	15	7.5
	No	185	92.5
Breastfeeding position	Sitting	63	31.5
	Lying	137	68.5
Breastfeeding Training	Yes	136	68.0
	No	64	32.0

4.3.2 Observation Results on breastfeeding

Respondents in the study were also observed breastfeeding using an observation checklist. The full results of the observation are attached in Appendix VI while Table 4.4 presents a summary result from analysis of data collected in the observation

checklist. Slightly more than half (56.5%,n=113) scored highly on body positioning. Slightly above half 58.5% (n=117) also scored highly on emotional bonding. However, 51% (n=102), 56.5% (n=113) and 61.5% (n=123) scored low on the responses, anatomy and time spent suckling domains.

Table 4.4: Breastfeeding Observation Results

Domain	Good		Poor	
	n	%	n	%
Body Position	113	56.5	87	43.5
Responses	98	49	102	51
Emotional Bonding	117	58.5	83	41.5
Anatomy	87	43.5	113	56.5
Suckling	96	48	104	52
Time spent suckling	77	38.5	123	61.5

4.3.3 Breastfeeding FGD Results

In the focus group discussion, participants were asked to indicate some of the ways they provided care for new-borns in regards to breastfeeding. Emerging themes were included breastfeeding on demand, factors affecting breastfeeding practice and beliefs on breast feeding.

Breastfeeding on demand

Participants indicated that they breastfed on demand and that they would breast for at least 6 months. Some of the responses are captured below

*“I normally breastfeed whenever my baby whenever I can”*_{Fgd103}

*“I breastfeed the baby to put her to sleep”*_{Fgd407}

*“I will breastfeed the baby for at least 6 months”*_{Fgd101}

Factors affecting breastfeeding practice

Participants were also asked to indicate some of the factors that affect their breastfeeding practices. Participants identified that working, inadequate milk and reluctance of the baby to breastfeed were major factors affecting breastfeeding practice

“ Even though I try as much, whenever I go to work I am unable to breast since I cannot carry my child with me to work”_{Fgd307}

“Sometimes the baby cries a lot and does not want breastmilk which makes it difficult because I cannot force him, I have to wait till he calm down”_{Fgd204}

“The baby doesn't get satisfied by breastmilk alone”_{Fgd305}

The participants were also asked if they had any beliefs about breastfeeding. Most of the beliefs identified were based on culture and traditions.

*“I know that from the time the baby is born, breast milk is not enough and I must supplement with some warm salty water to prevent stomach upsets”
fgd302*

*“I have been told that babies from my community are being and they should be given extra food products even within the first six months”
fgd201*

4.3.4 Summary of Breastfeeding Practices

The researcher analysed the questionnaire and observation results to come up with an overall breastfeeding practices assessment. Respondents who scored highly in 3 or more of the 5 breastfeeding practices in Table 4.4 and those who scored highly in 4 or more of the 6 breastfeeding observational practices in Table 4.5 were categorised as having good breastfeeding practices. Results in Figure 4.1 showed that slightly above half 51.5% (n=103) of the respondents had good breastfeeding practises while 48.5% (n=97) had poor breastfeeding practices.

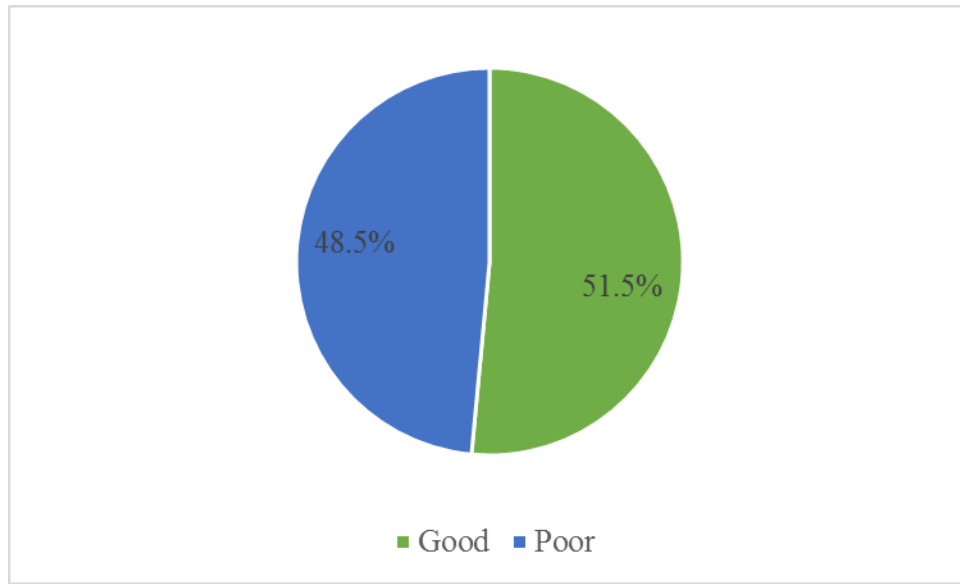


Figure 4.1: Summary of Breastfeeding Practices

4.3.5 Maternal Factors associated with Breastfeeding Practices

Chi-square tests were conducted to find out the association between the various maternal factors and breast-feeding practices in the study. Results in Table 4.6 show that maternal age ($p < 0.001$), education level ($p = 0.023$), parity ($p = 0.049$) and ANC initiation ($p = 0.031$) were significantly associated with breastfeeding practices. Results show that older mothers (above 30 years) were 3.3 times more likely to have good breastfeeding practices. Highly educated mothers (college and university) were 2.7 times more likely to have good breastfeeding practices. Mothers with low parity were 2.48 times more likely to have poor breastfeeding practices. Mother who initiated ANC early was 2.7 times more likely to have good breastfeeding practices as shown in Table 4.5.

Table 4.5: Maternal Factors associated with Breastfeeding Practices

Maternal factor	Categories	Breastfeeding practice		χ^2	df	p-value	COR (95%CI)
		Good	Poor				
Age	<30 years	85	75	16.401	1	<0.001*	Ref
	\geq 30 years	28	12				3.31(1.3,6.41)
Marital status	Married	72	75	1.411	1	0.235	0.68(0.31,3.41)
	Unmarried	31	22				Ref
Education	Tertiary	40	22	6.445	1	0.023*	2.74(1.62,5.66)
	Primary/secondary	75	63				Ref
Occupation	Employed	13	17	0.942	1	0.332	0.68(0.32,2.11)
	Unemployed	90	80				Ref
Spousal Occupation	Employed	19	14	0.584	1	0.445	0.85(0.33,3.11)
	Unemployed	84	83				Ref
Parity	Low	7	15	3.834	1	0.049*	2.48(1.51,6.25)
	High	96	82				Ref
Place of Delivery	Home	0	3	3.234	1	0.072	0.10(0.01,2.21)
	Hospital	103	94				Ref
Delivery Mode	Normal	34	39	1.116	1	0.291	0.70(0.21,1.65)
	Assisted	69	58				Ref
ANC attendance	\geq 4 visits	66	68	0.820	1	0.365	0.76(0.21,2.13)
	<4 visits	37	29				Ref
ANC initiation	Early	64	9	5.116	1	0.031*	2.73(1.52 - 7.81)
	Late	69	58				Ref

*Significant at 95% CI

4.4 Thermoregulation Practices

The second objective of the study sought to determine the practices for maintenance of optimal neonatal body temperature among mothers with new-born babies attending Kenyatta National Hospital. The results are presented in this section.

4.4.1 Questionnaire Results of Thermoregulation Practices

Table 4.6 presents the results of the analysis of data collected from the questionnaire. The vast majority 95% (n=190) kept their baby warm by using warm clothes while 54% kept the baby in a room with closed door and windows. Results in Table 4.5 show that the vast majority 89.5% (n=179) assessed their baby's temperature using their hand. Majority 80% (n=160) of the respondents indicated that they were not trained on thermoregulation.

Table 4.6: Thermoregulation Practices

Practice	Response	Frequency	Percent
Keeping baby warm (multiple responses)	Warm clothes	190	95.0
	Room with closed door and windows	108	54.0
	Warm environment with a heater	2	1.0
Assessment of baby's temperature	Hand	179	89.5
	Thermometer	21	10.5
Training on thermoregulation	Yes	40	20.0
	No	160	80.0

4.4.2 Thermoregulation FGD Results

In the focus group discussion, participants were asked to indicate some of the ways they kept the baby warm. The main theme emerging included heavy clothing, wrapping in shawls and use of a room heater.

Heavy clothing

Majority of the participants stated that they use heavy clothing in their efforts to keep their babies warm.

“The first thing I do is to ensure that my baby puts on clothing that preserve hit so that she does not get cold” fgd101

“I have always ensured that my baby dresses warm and this has been important in controlling the degree of visits to the hospital because of flu.” Fgd205

Wrapping baby in shawl

The findings from the study also established that some of the participants wrapped their babies in shawls to keep them warm.

“I also use a shawl to wrap my baby to ensure that she stay warm” fgd205

“I use a heavy shawl especially when it is cold to wrap my baby.” Fd304

Using room heaters

Some of the participants stated that they use room heaters to keep their babies warm and protect them from cold.

“I have a heater that I normally put when it is very cold to protect my baby.” Fgd401

“Sometimes it is so cold I am forced to use my room heater to protect my baby.” Fgd401

Factors affecting thermoregulation

When asked whether there were any factors affecting their thermoregulation practice, participants indicated that they did not have enough money to buy adequate clothes and shawls to keep the baby warm.

“I don’t have money to but some warm clothes and shawls that I’d like” Fgd106

“This house is quite cold” Fgd403

“Sometimes I have to travel with the baby when it’s cold” Fgd101

All participants indicated that they had no beliefs, taboos nor traditional practices related to thermoregulation.

4.4.3 Summary of Thermoregulation Practices

The researcher analysed the questionnaire and observation results to come up with an overall thermoregulation practices assessment. Respondents who scored highly in 2 of the 3 thermoregulation practices in Table 4.6 and those who scored highly in 4 of the 6 observation items in Table 4.7 were classified as having good thermoregulation practises. Results in Figure 4.2 showed that majority 66.5% (n=133) had good thermoregulation practices.

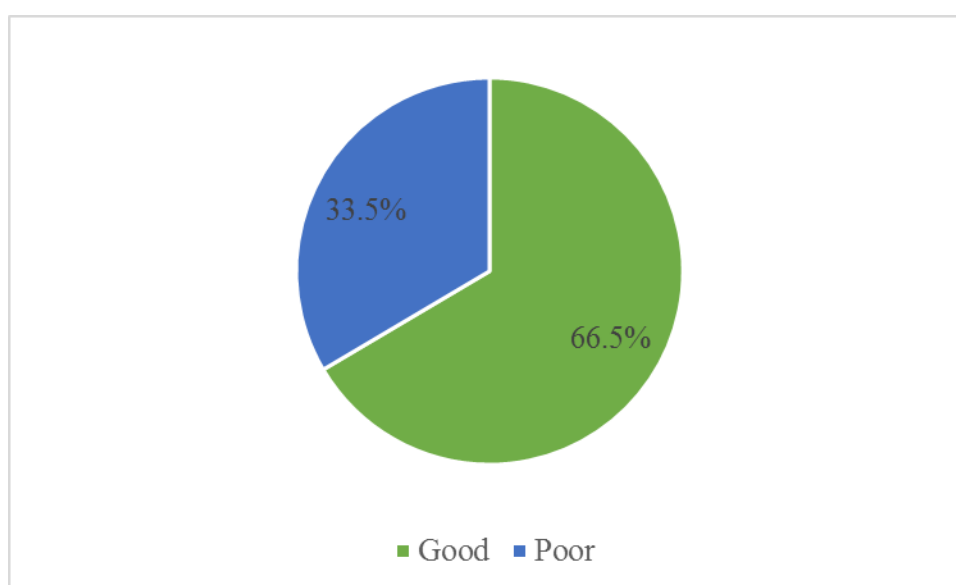


Figure 4.2: Summary of Thermoregulation Practices

4.4.4 Observation Results on thermoregulation

Table 4.7 presents results of the study from analysis of observation. Majority 83.5% (n=167) were observed to cover their baby with loose clothing and blanket. Majority 67% (n=134) of the respondents put a cap to cover the baby's head. Majority 86.5% (n=173) put socks to cover the baby's feet. Slightly above half 51% (n=102) covered their baby well during movement. However, slightly above half 56% (n=12) did not cover their baby well during diaper change. Slightly above half 57.5% (n=115) of the participants were observed checking to change wet diapers and clothing.

Table 4.7: Observation Results on thermoregulation

Practice	Yes		No	
	n	%	n	%
Baby covered with loose clothing and blanket	167	83.5	33	16.5
Baby wearing cap to cover the head	134	67	66	33
Baby wearing socks to cover feet	173	86.5	27	13.5
Baby well covered during movement	102	51	98	49
Baby well covered during diaper changes	88	44	112	56
Mother checking to change wet diapers and clothing	115	57.5	85	42.5

4.4.5 Maternal Factors associated with Thermoregulation Practices

Chi-square tests were conducted to find out the association between the various maternal factors and thermoregulation practices in the study. The findings established that occupation ($p=0.038$) and parity ($p =0.027$) were significantly associated with thermoregulation practices. Mothers who were unemployed were 2.4 times more likely to have good thermoregulation practices while mothers with high parity were 2.37 times more likely to have good thermoregulation practices as shown in Table 4.8.

Table 4.8: Maternal Factors associated with Thermoregulation Practices

Maternal factor	Categories	Thermoregulation practices		χ^2	df	p-value	COR
		Good	Poor				
Age	<30 years	106	54	0.022	1	0.881	Ref
	\geq 30 years	27	13				0.95(0.21,2.11)
Marital status	Married	95	52	0.875	1	0.350	0.72(0.21,4.65)
	Unmarried	38	15				Ref
Education	Tertiary	37	25	1.877	1	0.171	0.65(0.23,3.41)
	Primary/secondary	96	42				Ref
Occupation	Employed	15	15	4.313	1	0.038*	2.44(1.25, 6.71)
	Unemployed	118	52				Ref
Spousal Occupation	Employed	21	12	0.145	1	0.703	0.86(0.34,2.11)
Occupation	Unemployed	112	55				Ref
Parity	Low	10	12	4.915	1	0.027*	2.37(1.81,8.41)
	High	123	55				Ref
Place of Delivery	Home	1	2	1.504	1	0.220	0.25(0.12,0.83)
	Hospital	132	65				Ref
Delivery Mode	Normal	45	28	1.217	1	0.270	0.71(0.31,2.31)
	Assisted	88	39				Ref
ANC attendance	\geq 4 visits	85	49	1.715	1	0.190	0.65(0.31,3.16)
	<4 visits	48	18				Ref
ANC initiation	Early	45	28	1.217	1	0.270	0.71(0.42,2.11)
	Late	88	39				Ref

*Significant at 95% CI

4.5 Hygiene Practices

The third objective of the study sought to examine hygiene practices among mothers with new-born babies attending Kenyatta National Hospital. The results are presented in this section.

4.5.1 Questionnaire Results of Hygiene Practices

Results in Table 4.9 present the results from analysis of questionnaire data. Majority 66% (n=132) of the respondents indicated that they did not clean the baby's cord. The vast majority 91.5% (n=183) of respondents gave their baby the first bath after 24 hours of birth. Majority 89.5% (n=179) of the respondents bathed their baby by wiping with a warm cloth. Majority 86% (n=172) cleaned their baby's eyes using a soft cloth. However, majority 64.5% (n=129) indicated that they were not trained on hygiene practices. Other hygiene practices by the respondents included changing baby with clean clothes (71.5%), hand washing (78.5%) as well as keeping environment clean (51%).

Table 4.9: Hygiene Practices

Practice	Response	Frequency	Percent
Cord cleaning	With water	23	11.5
	With spirit	26	13.0
	Medication	19	9.5
	Does not clean	132	66.0
First bath after birth	Immediately	2	1.0
	Within 24 hours	15	7.5
	After 24 hours	183	91.5
Bathing baby	Wiping with a warm cloth	179	89.5
	Dipping in water	21	10.5
Cleaning eyes	Cleaning with a soft cloth	172	86.0
	Application of breast milk	15	7.5
	Application of tetracycline	13	6.5
Training on hygiene practices	Yes	71	35.5
	No	129	64.5
Other hygiene practices	Using Cleaning clothes	143	71.5
	Washing hands	157	78.5
	Keeping environment clean	102	51

4.5.2 Observation Results on hygiene

Results in Table 4.10 present the results from analysis of observation checklist data. Majority 82.5% (n=165) of the respondents were observed to keep the baby's surrounding clean. Soiled diapers and clothing were changed by majority 71.5% (n=143) of the respondents. Slightly above half 56.5% (n=113) were not wearing clean and dry clothes. Similarly, 54% (n=108) did not wash their hands after diaper change. Slightly above half 51% (n=102) did not wash their hands before feeding the baby. In addition, 68% (n=136) did not clean their breasts before breastfeeding the baby.

Table 4.10: Observation Results on hygiene

Practice	Yes		No	
	n	%	n	%
Baby surrounding kept clean	165	82.5	35	17.5
Soiled diapers and clothing changed	143	71.5	57	28.5
Mother wearing clean and dry clothes	87	43.5	113	56.5
Mother washes hands after diaper change	92	46	108	54
Mother washes hands before feeding the baby	98	49	102	51
Mother cleans breasts before breastfeeding the baby	64	32	136	68

4.5.3 Hygiene FGD Results

In the focus group discussion, participants were asked to indicate some of the ways they ensured cord care, eye care and general hygiene. The main emerging theme is that cleaning the baby with a wet towel and washing their hands were the main hygiene practices.

Cleaning the baby with a wet towel

Participants indicated that they changed baby's clothes with clean ones, they conducted regular diaper change and they washed hand after cleaning the baby.

"I change the baby's clothes at least three times a day" Fgd207

"I keep checking if the baby's diaper is full" Fgd401

"I wipe the baby's cord stump with a warm wet towel" Fgd403

"I wash the baby's face when she wakes up" Fgd302

Washing hands

Majority of the participants also that they washed their hands before handling the baby and used a warm wet cloth to clean the baby respectively.

"I always wash my hands before handling the baby" Fgd101

"I make sure the house help washes her hands before changing the diapers" Fgd306

All respondents indicated that there were no beliefs, taboos nor traditional practices related to hygiene.

4.5.4 Summary of Hygiene Practices

The researcher analysed the questionnaire and observation results to come up with an overall hygiene practices assessment. Respondents who scored highly in 4 of the 6 hygiene practices in table 4.9 and those who scored highly in 4 of the 6 hygiene observation items in table 4.10 were classified as having good hygiene practices. Results in Figure 4.3 showed that majority 56.5% (n=113) had poor hygiene practices.

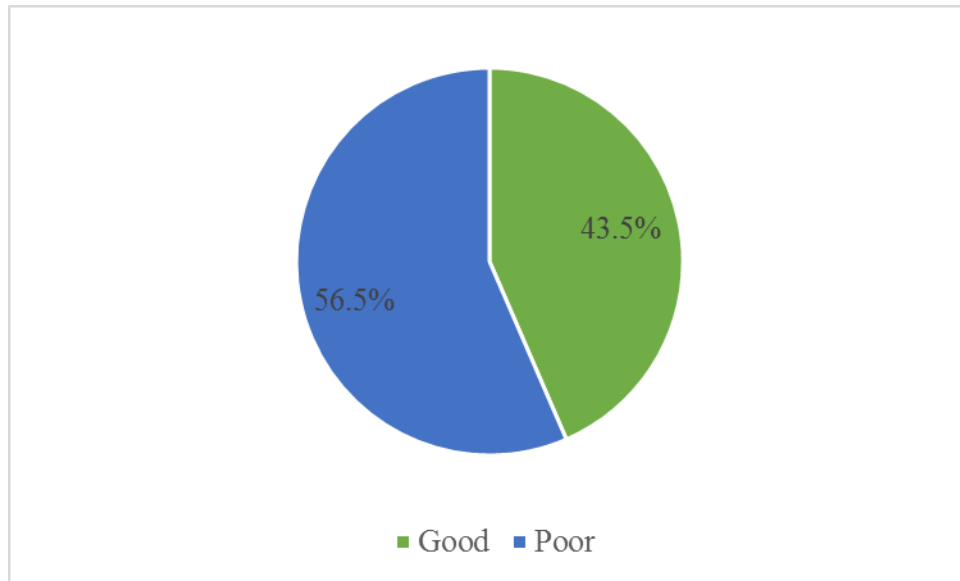


Figure 4.3: Summary of Hygiene Practices

4.5.5 Maternal Factors associated with Hygiene Practices

Chi-square tests were conducted to find out the association between the various maternal factors and hygiene practices in the study. Results in Table 4.11 showed that age ($p=0.035$), parity ($p=0.041$) and ANC attendance ($p=0.033$) were significantly associated with hygiene practices. Older mothers (≥ 30 years) were 2.9 times more likely to have good hygiene practices. Mothers who had low parity were 2.87 times more likely to have good new-born care practices. Those who had ≥ 4 ANC visits were 3.81 times more likely to have good new-born care practices.

Table 4.11: Maternal Factors associated with Hygiene Practices

Maternal factor	Categories	Hygiene practices		χ^2	df	p	COR(95%CI)
		Good	Poor				
Age	<30 years	102	54	9.860	1	Ref	
	\geq 30 years	20	20				
Marital status	Married	60	87	1.626	1	0.202	0.66(0.21,2.51)
	Unmarried	27	26				
Education	Tertiary	63	75	0.839	1	0.360	0.75(0.31,3.11)
	Primary/secondary	24	38				
Occupation	Employed	15	15	0.607	1	0.436	0.87(0.42,3.41)
	Unemployed	72	98				
Spousal Occupation	Employed	12	21	0.819	1	0.365	0.70(0.23,2.10)
	Unemployed	75	92				
Parity	Low	15	7	6.425	1	0.041*	2.87(1.02,4.51)
	High	76	102				
Place of Delivery	Home	2	1	0.665	1	0.415	0.59(0.61,2.01)
	Hospital	85	112				
Delivery Mode	Normal	29	44	0.666	1	0.414	0.87(0.22,2.12)
	Assisted	58	69				
ANC attendance	\geq 4 visits	84	50	7.483	1	0.033*	3.81(1.21,7.43)
	<4 visits	31	35				
ANC initiation	Early	29	44	0.66	1	0.624	0.66(0.21,2.22)
	Late	58	69				

4.6 Maternal Factors and the New-born Care Practices

The fourth objective of the study sought to examine the association between maternal factors and the practice of new-born care among mothers with new born babies in Kenyatta National Hospital.

4.6.1 Summary of New-born Care Practices

Scores of breastfeeding practices, thermoregulation practices and hygiene practices were summed up to have one final score of new-born care practices. Results in Figure 4.4 show that 59% (n=118) of the respondents in the study had poor new-born care practices.

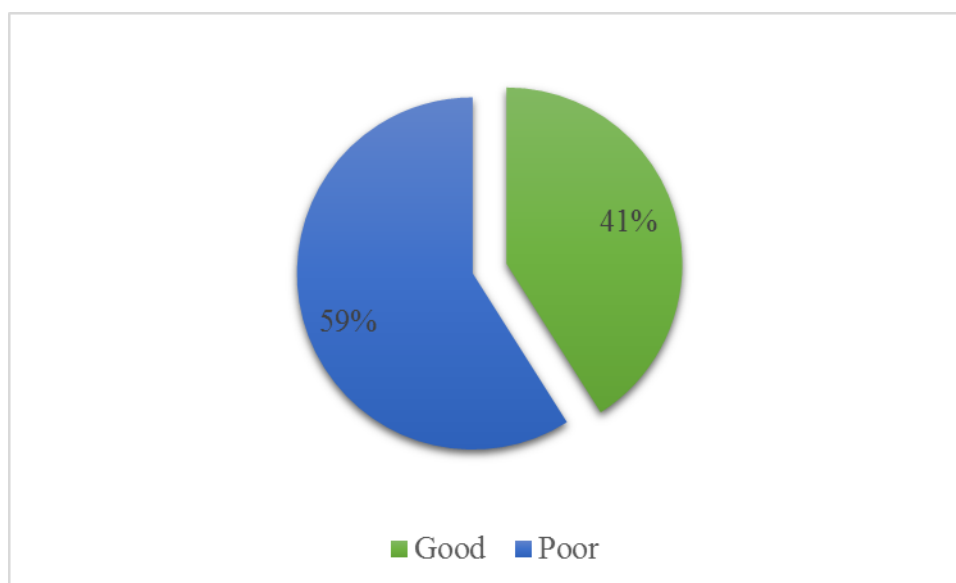


Figure 4.4: Summary of New-born Care Practices

4.6.2 Association between Maternal Factors and the New-born Care Practices

Chi-square tests were conducted to find out the association between the various maternal factors and new-born practices in the study. Age ($p < 0.001$), education ($p < 0.001$), parity ($p = 0.031$), ANC attendance and ANC initiation ($p = 0.021$) were all significantly associated with newborn care practice. As shown in Table 4.12, mothers aged ≥ 30 years were 2.8 times more likely to have good newborn care practices. Respondents who had tertiary level education were 3.3 times more likely to have good new-born care practices. Those who had low parity were 2 times more likely to have good newborn care practice. Mothers who had ≥ 4 ANC visits were 3.3 times

more likely to have good practice while also those who had early ANC initiation were 2.3 times more likely to have good new-born practices.

Table 4.12: Association between Maternal Factors and the New-born Care Practices

Maternal factor	Categories	New-born care		χ^2	df	p	COR
		Good	Poor				
Age	<30 years	130	30				Ref
	\geq 30 years	18	22	6.841	1	0.001*	2.84(1.11,5.32)
Marital status	Married	31	166	0.118	1	0.731	0.97(0.23,2.16)
	Unmarried	10	43				Ref
Education	Tertiary	50	12	7.908	1	<0.001*	3.30(1.25,10.41)
	Primary/secondary	29	109				Ref
Occupation	Employed	17	13	1.114	1	0.606	0.81(0.32,1.41)
	Unemployed	89	81				Ref
Spousal Occupation	Employed	17	16	0.340	1	0.560	0.94(0.21,2.03)
	Unemployed	92	75				Ref
Parity	Low	36	142	3.890	1	0.031*	2.43(1.31,5.22)
	High	17	5				Ref
Place of Delivery	Home	1	2	0.811	1	0.641	0.56(0.21,1.52)
	Hospital	100	97				Ref
Delivery Mode	Normal	40	33	0.548	1	0.459	0.95(0.12,2.05)
	Assisted	57	70				Ref
ANC attendance	\geq 4 visits	106	28	4.901	1	<0.001*	3.34(2.31,7.82)
	<4 visits	13	53				Ref
ANC initiation	Early	56	17	3.803	1	0.021*	2.29(1.03,5.23)
	Late	24	103				Ref

4.6.3 Regression Analysis

Variables that were significant in the chi-square test were used for regression analysis. This included age, education, parity, ANC attendance and ANC initiation.

Results in Table 4.13 show that age, parity and ANC attendance were significant factors influencing essential new-born care practices. Mothers who were aged ≥ 30 years were 2.5 times more likely to have good essential new-born care practices. Those who had low parity were 3.9 times more likely to have good essential new-born care practices. Mothers who had ≥ 4 visits were 2 times more likely to have good essential new-born care practices.

Table 4.13: Regression Analysis

Maternal factor	Categories	AOR	P-value
Age	<30 years	Ref	
	≥ 30 years	2.52(1.41,8.71)	0.005*
Education	Tertiary	0.55(0.21,2.16)	0.361
	Primary/secondary	Ref	
Parity	Low	3.87(1.31,10.51)	0.010*
	High	Ref	
ANC attendance	≥ 4 visits	2.01(1.01,6.43)	0.033*
	<4 visits	Ref	
ANC initiation	Early	0.32(0.11,1.22)	0.324
	Late	Ref	

CHAPTER FIVE

DISCUSSION, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter presents the discussion of findings of the study. The researchers' conclusions are also presented. In addition, recommendations for policy, practice and future studies are also highlighted.

5.2 Discussion

5.2.1 Breastfeeding Practices among Mothers with New-Born Babies

The first objective of the study sought to establish breastfeeding practices among mothers with new-born babies attending Kenyatta National Hospital. The study found that slightly above half 51.5% (n=103) of the respondents had good breastfeeding practise while 48.5% (n=97) had poor breastfeeding practices. Majority of respondents scored well on body positioning and emotional bonding. However, many respondents scored poorly on the responses, anatomy and time spent suckling domains. Majority of respondents intended to breastfeed for 6 months. Majority indicated that they lacked time to breastfeed while indicated that they had inadequate breast milk. This result agrees with Cheedarla et al. (2019) findings of where mothers practicing correct positioning during breastfeeding were 63%. This finding agrees with Al-Mutairi et al. (2017) that the most common reason for discontinuation breastfeeding was breast milk insufficiency. These findings are in however disagreement with Altamimi et al. (2017) who revealed that although women initiate early breastfeeding, majority cease exclusive breastfeeding prior to the child attaining 6 months. The finding is also in disagreement with findings of Vinay et al. (2016) study which showed a laxity in timely initiation of breastfeeding, mixed feeding early in life and early cessation of breastfeeding. The level of breastfeeding practices in this study is therefore higher than that reported in previous studies. This can be attributed to the nature of the study area, Kenyatta National Hospital which is located in Nairobi, a highly urbanised area where residents have access to

information on among other things breastfeeding. In addition, the facility is well staffed with professionals who are able to train and inform mothers on breastfeeding practices. Moreover, the vast majority of respondents in this study were highly educated having acquired at least secondary education which is sufficient for them to know about breastfeeding and or understand health messages related to breastfeeding.

Results showed that education ($p=0.023$), parity ($p=0.049$) and initiation of antenatal care ($p=0.031$) were significant. Highly educated mothers (college and university) were 2.7 times more likely to have good breastfeeding practices. This is similar to findings of Madeghe et al. (2016) Mise et al. (2017) and Talbert et al. (2018) who also found significant relationships between level of education and breastfeeding practices. This could be attributed to the fact that highly educated mothers are exposed to more sources of information. In addition, highly educated mothers are better placed to understand messages on breastfeeding than their undereducated. Mothers with low parity were 2.48 times more likely to have poor breastfeeding practices. Differences in breastfeeding initiation have been observed by parity in past studies with multiparous mothers more likely to initiate breastfeeding. For instance, Alzaheb (2017) and Al-Mutairi et al. (2017) also found parity to be significant. Previous studies have reported that multiparous mothers with prior breastfeeding experience have a longer breastfeeding duration compared with primiparous mothers. The researcher also associates the significance of parity in this study to past experience. This study also showed that mothers who initiated ANC early were 2.7 times more likely to have good breastfeeding practices. This result is similar to findings of Alzaheb (2017) and Talbert et al. (2018) whereby antenatal care utilisation was significant. The researcher attributes the significance of antenatal care to the health promotion messages that are imparted during visits in the antenatal care clinic. Mothers who make at least four visits are therefore more exposed to these messages and as such stand a better chance of implementing them thereby achieving good breastfeeding practices.

5.2.2 Thermoregulation Practices among Mothers with New-born Babies

The second objective of the study sought to determine thermoregulation practices among mothers with new-born babies attending Kenyatta National Hospital. Results showed that majority (66.5%) had good thermoregulation practices. The vast majority kept their baby warm by using warm clothes. However, majority of the respondents indicated that they were not trained on thermoregulation. When asked whether there were any factors affecting their thermoregulation practice, majority indicated that they did not have enough money to buy adequate clothes and shawls to keep the baby warm. This result is similar to that of Berhea et al. (2018) which found that about 80% of respondents were aware that wrapping in a warm dry cloth is essential in protecting the baby from cold. The finding is similar to that of Semanew et al. (2019) where 80.8% of mothers reported to have wrapped the baby with warm clothes immediately after birth. The result is also similar to findings of Mesekaa et al. (2017) where there modes of thermoregulation identified by the mothers were the use of warm clothing and rooming-in. The high level of thermoregulation practices in this study can be attributed to the simplicity of methods and techniques of keeping a bay warm. Practices such as birth room warming, drying and covering with warm clothing, delayed bathing, and immediate initiation of exclusive breastfeeding are not complex to understand and do not cost a lot of resources and therefore mothers are able to implement them. In addition, thermoregulation practices are not affected by beliefs and negative attitudes such as those seen in pregnancy, labour, delivery, hygiene and breastfeeding.

Results show that occupation ($p=0.038$) and parity ($p=0.027$) were significant to thermoregulation. Mesekaa et al. (2017), Berhea et al. (2018) and Semanew et al. (2019) also found an association between occupation and thermoregulation practices. This association may be due to lack of employment acting as a barrier because are not able to live in a good house or are not able to buy clothes. The study showed that mothers with high parity were 2.37 times more likely to have good thermoregulation practices. The association between parity and thermoregulation practices was also discovered by Amolo et al. (2017), Panda et al. (2017) and Berhan and Gulema, (2018). This association could be due to parity. In addition, mothers with high parity

are likely to have more children and therefore have more clothes and tools from past pregnancies to keep the new baby warm.

5.2.3 Hygiene Practices among Mothers With New-born Babies

The third objective sought to find out hygiene practices among mothers with newborn babies attending Kenyatta National Hospital. Results showed that majority (56.5%) had poor hygiene practices. Majority of the respondents indicated that they did not clean the baby's cord. The vast majority of respondents gave their baby the first bath after 24 hours of birth. Slightly above half were not wearing clean and dry clothes. Similarly, majority did not wash their hands after diaper change. This finding lends support to findings of Begum and Bhavani (2016), Bhandari and Paudyal (2016) and Majumder et al. (2018) who also found poor hygiene practices. This finding that mothers had poor hygiene practices can be attributed to inadequate sensitisation by healthcare workers as majority of the respondents indicated that they were not trained on hygiene issues. Another reason for this finding could be the fact that a significant number of respondents who attend Kenyatta National Hospital come from slum areas which have poor sanitation facilities and water supply which could therefore impact hygiene practices.

Age ($p=0.035$), parity ($p=0.041$) and ANC attendance ($p=0.033$) were found to have significant association with hygiene practices. Young mothers (<33 years), mothers with low parity and others with a high ANC attendance were 2.9, 2.9 and 3.8 times more likely to have good hygiene practices. Bhandari and Paudyal (2016) also found that young mothers had good hygiene practices. This may be attributed to the fact that young mothers are highly likely to be new mothers and are keen to follow healthcare worker instructions as opposed to older mothers who mostly rely on their experience. The association between low parity is also associated to this fact. The result that antenatal care utilisation was associated with better hygiene practices is similar to results in Abuidhail (2016) and Dehury et al. (2018) studies and may be attributed to teachings that pregnant women are given in antenatal care clinic. Pregnant women who attend more visits therefore get more information and are more likely to implement good hygiene practices.

5.2.4 Association between Maternal Factors and the Practice of New-born Care among Mothers With New-Born Babies

The fourth objective sought to examine the association between maternal factors and the practice of new-born care among mothers with new-born babies in Kenyatta National Hospital. The study found that 59% of the respondents in the study had poor new-born care practices. The rate of good essential new-born care practices in this study (41%) is higher than that found in Saaka et al. (2018) (15%), Mersha et al. (2018) (38.4%) and Weldeargeawi et al. (2020) (40.7%). However, the rate of good essential new-born care practices in this study (41%) is lower than that found in studies by Esan et al. (2020) (62.9%) and Misgna et al. (2016) (92.9%). The level of new-born care practices maybe associated to the fact that this study was facility based whereas most the other studies were community based.

Chi-square tests showed that age ($p < 0.001$), education ($p < 0.001$), parity ($p = 0.031$), ANC attendance and ANC initiation ($p = 0.021$) were all significant. Age ($p = 0.043$), parity ($p < 0.001$) and ANC attendance ($p < 0.001$) remained significant in the regression analysis. Results showed that younger respondents, low parity and high ANC attendance were associated with better new-born care practices. ANC attendance was the most important factor among them. This finding is in agreement with Chipojola et al. (2020) who found that the odds of good new-born care practices such as breastfeeding were higher among women with frequent antenatal care visits and multiparous mothers. Similarly, frequent antenatal care visits and hospital delivery were positive determinants for exclusive breastfeeding. Mersha et al. (2018) also found that mothers who had sought antenatal care were 3.13 times and who had attending pregnant mothers meeting were 2.90 times more likely to practice good essential new-born care. This finding is however in disagreement with findings of Gul et al. (2014) that having a delivery at home was a risk factor for poor cord care and discarding colostrum. It is also in disagreement with findings of Saaka et al. (2018) that compared to women who delivered at home, women who delivered their index baby in a health facility were 5.6 times more likely of having safe cord care for their babies. The finding that ANC utilisation was the most important of the maternal factors in this study could be attributed to the health education offered to mothers

attending antenatal care. This is more so for pregnant women who initiate antenatal care early (first trimester) and make at least four visits. Health efforts are made by the health-care providers especially nurses, medical officers and nutritionists to ensure that there is adequate health awareness among pregnant women. However, there is need to enhance sensitisation of mothers on hygiene practices as shown in this study.

5.3 Conclusion

Mothers with new-born babies attending Kenyatta National Hospital had fairly good breastfeeding practices. Although breastfeeding initiation was poor, majority of the women breastfed on demand and had good body positioning and emotional bonding during breastfeeding.

Thermoregulation practices among mothers with new-born babies attending Kenyatta National Hospital were good. Mothers used warm clothes and ensured that the baby was in a room with closed door and windows to ensure that the baby is kept warm.

There was poor hygiene practices among mothers with new-born babies attending Kenyatta National Hospital. This relates to poor cord cleaning, delayed first bath after birth and how babies are bathed.

Overall, the study found that more than half of the respondents in the study had poor new-born care practices. Chi-square tests showed that age, education, parity, ANC attendance and ANC initiation were all significant.

5.4 Recommendations

Health education given to mothers in antenatal care should emphasise that mother's initiate breastfeeding immediately after birth. In addition, mothers should be trained on best practices of expressing milk and how to store it so that the baby is fed even when mothers are at work.

Mothers should be sensitised on covering their baby well during movement and checking of wet diapers and clothing to ensure that the baby is kept warm at all times.

Trainings provided in the antenatal care clinic should highly focus on sensitising mothers on cleanliness. Emphasis should be placed on cord cleaning, first bath after birth, handwashing and mothers' hygiene.

5.5 Suggestions for Further Study

The study found that majority of mothers had not been trained well on essential new born components. Therefore a study into training practices of nurses on ENC should be conducted. A similar study should also be conducted in county referral hospitals.

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APPENDICES

Appendix I: Consent Form

Topic: Assessment of essential new-born care practices among mothers attending Kenyatta national hospital.

Introduction: My name is Jemimah Wanjiru. I am currently pursuing a Master of Nursing degree course at Jomo Kenyatta University of Agriculture and Technology. As part of this course, I am required to undertake a research project to assess essential new-born care practices among mothers attending Kenyatta National Hospital. Your participation will involve you allowing me to access your/your next of kin personal information like age, marital status and the level of knowledge on the essential new-born care practices.

Study procedures: I am going to use a questionnaire to ask you questions on breastfeeding practices, thermoregulation practices and hygiene practices of the mother who has a new-born less than 29 days of life. If you do not understand anything, please ask me to clarify. I will use English and Kiswahili depending on which language you will be comfortable with. The interview will take approximately 10 minutes.

Broad objective: the aim of the study is to assess essential new-born care practices among mother attending Kenyatta national hospital

Voluntariness of participation: your participation in this study is a voluntary basis and should you wish to withdraw from the study at any point then you will be at liberty to do so.

Please note that there are no correct or incorrect answers.

Confidentiality: Your/your kin participation in the study will be kept in confidence and your/your kin actual name will not be used in the study. Confidentiality of the information obtained from you/your kin record will be protected through such processes as using codes, numbers for concealed identity and limiting the number of people with access to information. All survey responses will be kept strictly confidential and all data from this survey will be reported only in the aggregate.

Benefit: The benefit to you being involved in the study will not be direct. The indirect benefit include improving on the practices of the essential new-born care

Risks: There are no risks from you getting involved in this study. The study findings will not be used for any monetary gains.

Right to withdraw: Should you decide to withdraw from the study at any point, you will not be subjected to any discriminatory treatment. Should you require any further information or clarification then the main researcher may be contacted using the contacts on the consent certificate /form

- I confirm that I have been given a copy/ read to the letter of introduction and fully understood the information it contained.
- I understood the explanation of the survey provided to me. I have had the opportunity to ask any questions and they have been answered to my satisfaction.
- I understand that my participation in this survey is voluntary. I will not be paid for my involvement.
- I am free to withdraw from the project at any time, voluntarily without reason.

- I have been assured that all data provided will be treated in strict confidence, and that my name will be anonymised.
- I understand that this research has been approved by the relevant authorities.
- I therefore chose to participate in this survey.

Sign:

Jemimah Wangari Wanjiru

Telephone:0722979857

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VIAMBATANISHO

Kiambatisho I: Fomu ya Idhini

Mpendwa mhojiwa,

Utafiti kuhusu: Tathmini ya desturi muhimu aliyezaliwa huduma miongoni ya mama akihudhuria hospitali ya Taifa ya Kenyatta.

Utangulizi;Jina langu ni Jemimah Wanjiru. Mwanafunzi wa somo la uuguzi kiwango cha shahada ya uzamili katika chuo kikuu cha Kilimo na Teknolojia cha Jomo Kenyatta. Kama sehemu maalum ya kozi hii, yanipasa kufanya mradi wa utafiti ili kuhitimu. Kwa hivyo, ningependa kuomba ushirikiano wako katika utafiti huu. Ikiwa utaitikia mwito wa kushiriki ,nitakuuliza maswali kadhaa kuhusu malezi na utunzaji wa watoto wadogo waliozaliwa.

Taratibu za kujifunza: Kupitia dodoso hii, nitakuuliza maswali juu ya desturi ya unyonyeshaji, desturi ya kuthibiti joto na shughuli za usafi kwa mtoto wako akiwa hajapitisha masiku 29 tangu kualiwa.Ikiwa kuna jambo hujaelewa, tafadhali niulize nikufafanulie aidi wakati wowote wa mahojiano. Nitatumia lugha ya Kiingereza na Kiswahili kulingana na lugha ambayo utakuwa na starehe. Mahojiano hayatachukua zaidi ya dakika kumi.

Lengo pana:Lengo la utafiti ni kutathmini Tabia au desturi muhimu za utunzaji watoto waliozaliwa miongoni mwa akina mama wanaohudhuria hospitali ya kitaifa ya Kenyatta.

Ushiriki:Tafadhali, kumbuka yakwamba hakuna jibu sahihi wala jibu lisilo sahihi. Pia, ningependa ufahamu ya kuwa kushiriki kwako katika zoezi hili ni kwa hiari na hivo basi waweza jiondoa katika zoezi hili wakati wowote bila kutoa sababu mwafaka.

.Usiri:Majibu yote ya mahojiano haya yatawekwa kwa usiri wa hali ya juu kabisa na data kuripotwa kwa agizaUsiri wa habari zilizopatikana kutoka kwako zitalindwa kupitia michakato kama kutumia misimbo, namba kwa siri utambulisho na kupunguza idadi ya watu na upatikanaji wa taarifa. Majibu yote ya utafiti yatawekwa siri madhubuti na data zote kutoka utafiti huu yataripotwa katika jumla tu.

Faida:Faida kwako kuhusika katika utafiti itakuwa moja kwa moja. Faida ya moja kwa moja ni pamoja na kuboresha juu ya desturi ya utunzaji wa mtoto mzawa wa muhimu

Hatari:Hakunahatari yoyote kwako na kwa mtoto kushiriki katika utafiti huu. Matokeo ya kujifunza haitatumiwa kwa ajili ya mafanikio yoyote ya kifedha.

Iwapo unahitaji habari zaidi au ufafanuzi wowote baadaye, mtafiti anaweza kupatikana kutumia njia a mawasiliano zilizo mwisho wa fomu hii.

- Nathibitisha yakwamba nimepokea na kusoma nakala pamoja na barua ya utangulizi na kuelewa kwa undani habari zoye zilizomo.

- Nafahamu maelezo ya utafiti niliopewa kushiriki, Nimepewa nafasi ya kuuliza maswali yote na kupata majibu ya kuridhisha.
- Naelewa ya kwamba kushiriki kwangu katika utafiti huu ni kwa hiari wala sitapokea malipo yoyote katika zoezi hili.
- Nina uhuru wa kujiondoa katika zoezi hili wakati wowote kwa hiari bila kutoa sababu zozote mwafaka.
- Nimehakikishiwa yakwamba data zote zitawekwa na kuhifadhiwa kwa usiri wa hali ya juu na pia jina langu litabanwa
- Nafahamu ya kuwa utafiti huu umeidhinishwana mamlaka husika.
- Kwa hivyo, nakubali kushiriki katika utafiti huu.

Kwa hivyo niliamua kushiriki katika utafiti huu.

Sahihi.....

Jemimah Wangari Wanjiru

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Wasimamizi

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Appendix II: Questionnaire

Section A: Socio-Demographic Characteristics of Respondents

1. How old are you?

.....

2. What is your marital status?

- Single
- Married
- Divorced/separated
- Widowed

3. What is your highest level of education?

- None
- Primary
- Secondary
- College
- University

4. What is your religion?

- Christian
- Muslim
- Hindu
- Others

5. What is your occupation?

- Unemployed
- Casual job
- Self-employed
- Salaried job
- Student

6. What is your husband/partners occupation? (Skip if respondent did not indicate married)

- Unemployed
- Casual job

- Self-employed
- Salaried job
- Student

Section B: Health Behaviour

7. How many children do you have?

8. Place of delivery?

- Hospital
- Home
- In transit

9. What was the mode of delivery for your baby?

- Normal Vaginal Delivery
- Assisted Vaginal Delivery
- Caesarean Section

10. How many time did you attend the Antenatal care clinic?

- 1
- 2
- 3
- 4
- More than 4
- Cannot remember

11. At how many months pregnant did you begin antenatal care clinic?

Section C: Breastfeeding Practices

12. After how long after birth did you initiate breastfeeding?

- Immediately
- Within an hour
- 1-3 hours
- Over 3 hours

13. How often do you breastfeed your baby in a day?

- On-demand
- Once
- Twice
- Thrice
- Four or more times

14. Did you discard the colostrum?

- Yes
- No

15. In what position do you frequently breastfed your baby?

- Sitting
- Lying

16. Did you receive any training from healthcare workers on ways to breastfeed?

- Yes
- No

Section D: Thermoregulation Practices

17. How do you keep your baby warm?

- Warm clothes
- Room with closed door and windows
- Warm environment with a heater

18. How do you assess the temperature of the baby?

- Hand
- Thermometer

19. Were you trained by healthcare workers on thermoregulation practice

- Yes
- No

Section D: Hygiene Practices

20. How do you keep the cord clean?

- Cleaning with water
- Cleaning with spirit
- Application of medication
- Do not clean

21. After how long after birth did you bathe the baby?

- Immediately
- Within 24 hrs
- After 24 hrs

22. How do you bathe the baby?

- Wiping a warm cloth
- Dipping in water

23. How do you keep the new-born's eyes clean?

- Cleaning with a soft cloth
- Application of breast milk
- Application of tetracycline

24. Did the Healthcare officers train you on hygiene practices

Yes

No

25. What else do you do to ensure that the baby's environment is clean?

.....

...

Kiambatisho II: Dodoso

Sehemu ya A: Tabia za kijamii za mhojiwa

1. Una umri wa miaka mingapi?

.....

2. Je hali yako ya ndoa ni ipi?

- Pekeyangu
- Nimeolewa
- Talaka
- Kutengana
- Mjane

3. Kiwango chako cha juu cha masomo?

- Sijasoma
- Shule ya Msingi
- Shule ya upili
- Chuo
- Chuo kikuu

4. Dini yako ni ipi?

- Mkristu
- Mwislamu
- Kihindi
- Nyingine

5. Kazi yako ni gani?

- Sijaajiriwa

- Kai ya vibarua
- Mtu anayejiajiri
- Kazi ya kulipwa
- Mwanafunzi

6. Je! Kazi ya mumeo /mwenzi wako ni nini? (Ruka ikiwa mhojiwa hakuonyesha kuolewa)

- Hajaajiriwa
- Kai ya vibarua
- Mtu anayejiajiri
- Kazi ya kulipwa
- Mwanafunzi

7. Je, una watoto wangapi?

Sehemu B: Tabia ya Afya

8. Mahali pa kuzalia?

- Hospitali
- Nyumbani
- Njiani

9. Ulijifungua mtoto wakokwa njia gani?

- Kawaida kupitia njia ya uzazi
- Kupitia njia za msaada kwa njia ya uzazi
- Kujifungua kwa caesarean

10. Je! Umehudhuria kliniki ya utunzaji wa ujauzito mara ngapi?

- 1
- 2

- 3
- 4
- Zaidi ya mara 4
- Hauwezi kukumbuka

11. Ulianza kliniki ya utunzaji wa ujauzito mimba ikiwa na mda gani?

Sehemu ya C: Desturi za kunyonyesha

12. Baada kujifungua, ulianza kumnyonyesha motto baada ya muda upi?

- Papo hapo
- Ndani ya lisaa moja
- Baada ya saa 1-3
- Baada ya zaidi ya masaa 3

13. Wewe hunyonyesha mtoto mara ngapi kwa siku?

- Pale tuu mtoto anapohitaji kunyonya
- Mara moja
- Mara mbili
- Mara tatu
- Mara nne na zaidi

14. Je, ulitupa/ kumwaga maziwa ya kwanza (“*Colostrum*”)?

- Ndio
- La

15. Jew ewe humnyonyesha mwanao katika msimamo upi?

- Ukiwa umeketi
- Ukiwa umelala

Sehemu ya D: Tabia za kuthibiti joto mwilini

16. Je, wewe huhakikisha mtoto anabaki joto kiviipi?

.....

...

.....

...

.....

...

17. Huwa unatathmini kiwango cha joto mwilini mwa mwanao kiviipi?

.....

...

.....

...

.....

...

Sehemu ya D: Tabia za Usafi

18. Je wewe huakikisha usafi wa kitovu cha mtoto kwa njia gani?

.....

...

19. Ulimwosha mtoto baada ya muda gani baada ya kijifungua?

.....

...

20. Wewe humwosha mtoto kwa njia gani?

.....

...

.....

...

21. Je wewe hudumisha usafi wa macho ya mtoto kwa njia gani?

.....

...

.....

...

22. Ni nini kingine, unafanya ili kuhakikisha kwamba mazingira ya mtoto ni safi?

.....

...

.....

...

.....

...

Appendix III Observation Guide

BREASTFEED OBSERVATION FORM

Date: _____

Mother's initials: _____ Baby's initials: _____ Age of baby: _____

[Signs in brackets refer only to newborn, not to older babies]

Signs that breastfeeding is going well

Signs of possible difficulty

BODY POSITION

Mother relaxed and comfortable

Baby's body close, facing breast

Baby's head and body straight

Baby's chin touching breast

[Baby's bottom supported]

supported]

Shoulders tense, leans over baby

Baby's body away from mother's

Baby's neck twisted

Baby's chin not touching breast

[Only shoulder or head

RESPONSES

Baby reaches for breast if hungry

[Baby roots for breast]

Baby explores breast with tongue

Baby calm and alert at breast

Baby stays attached to breast

Signs of milk ejection,

[leaking, afterpains]

No response to breast

[No rooting observed]

Baby not interested in breast

Baby restless or crying

Baby slips off breast

No signs of milk ejection

EMOTIONAL BONDING

Secure, confident hold

Face-to-face attention from mother

Much touching by mother

poking baby

Nervous or limp hold

No mother/baby eye contact

Little touching or Shaking or

ANATOMY

Breast looks round during feed

Nipples stand out, protractile

Skin appears healthy

Breast looks stretched or pulled

Breasts engorged

Nipples flat or inverted

Fissures or redness of skin

Breast looks stretched or pulled

SUCKLING

Mouth wide open
forward

Lower lip turned outwards

Tongue cupped around breast

Cheeks round

More areola above baby's mouth

Slow deep sucks, bursts with pauses

Can see or hear swallowing

Mouth not wide open, points

Lower lip turned in

Baby's tongue not seen

Cheeks tense or pulled in

More areola below baby's mouth

Rapid sucks only

Can hear smacking or clicking

TIME SPENT SUCKLING

Baby releases breast

Mother takes baby off breast

Baby suckled for ___ minutes

Adapted from; "B-R-E-A-S-T-Feeding Observation Form" by H C Armstrong,
Training Guide in Lactation Management, New York, IBFAN and UNICEF 1992.

THERMOREGULATION OBSERVATION GUIDE

Indicate yes or no for the following items;

1. Baby covered with loose clothing and blanket?
2. Baby wearing cap to cover the head?
3. Baby wearing socks to cover feet?
4. Baby well covered during movement?
5. Baby well covered during diaper changes?
6. Mother checking to change wet diapers and clothing?

HYGIENE OBSERVATION GUIDE

Indicate Yes or No for the following Items

1. Baby surrounding kept clean?
2. Soiled diapers and clothing changed?
3. Mother wearing clean and dry clothes?
4. Mother washes hands after diaper change?
5. Mother washes hands before feeding the baby?
6. Mother cleans breasts before breastfeeding the baby?

Appendix IV: Focused Group Discussion Guide

FGD Guide

Purpose: To explore the essential new-born care practices among mothers attending Kenyatta national hospital focus on breastfeeding practices, thermoregulation practices and hygiene practices.

Date:..... Starting time..... Ending time.....

Name of the hospital:

Name of the facilitator:

Name of the note taker:

Number of participants in the group

Introduction:

Hallo my name isis working withto explore the essential new-born care practices among mothers attending Kenyatta national hospital. We are interested in getting your views and experiences on essential newborn care components which are thermoregulation, breastfeeding practices and hygiene practices.

We will not take more than one hour. Note that there is right or wrong answer, your answers and ideas to us are important. You are free to join the group discussion and feel free to answer any question and ask any question. The responses are confidential and anonymous.

Guidance to the questions

1. What are some of the ways you provide care for new-borns in the following aspects?
 - a) Breastfeeding?
 - b) Keeping the baby warm?
 - c) Cord care?
 - d) Eye care?
 - e) General hygiene?
2. What factors affect you practice on the following area?
 - a) Breastfeeding?
 - b) Keeping the baby warm?
 - c) General hygiene
3. What are some of the beliefs in your community regarding?
 - a) Breastfeeding?
 - b) Keeping the baby warm?
 - c) Cord care?
 - d) Eye care?
 - e) General hygiene?
4. Are there any traditional practices pertaining to the care of a new-born in your community?
5. What is considered as taboo in regards to new-born care in your community?
6. What are some of the challenges you face while caring for your new-born?

Appendix V: Letters of Authorisation



**JOMO KENYATTA UNIVERSITY
OF
AGRICULTURE AND TECHNOLOGY
SCHOOL OF NURSING**

DEPARTMENT OF NURSING EDUCATION, LEADERSHIP, MANAGEMENT & RESEARCH
TEL: 067- 58-70000/5 Extn. 24064 FAX: 067-52030 Email :nursingeducation@jkuat.ac.ke

REF : HSN311-3266/2017

DATE : 14TH MARCH, 2020

TO WHOM IT MAY CONCERN

RE : JEMIMAH WANGARI WANJIRU – HSN311-3266/2017

This is to confirm that the above named is a bonafide student of Jomo Kenyatta University of Agriculture and Technology pursuing Masters in Nursing.

She has successfully defended her proposal titled “Assessment of essential new-born care practices among postnatal mothers attending Kenyatta National Hospital” and is to proceed for approval to an Institutional Ethical Review Committee and NACOSTI.

We therefore kindly request you to grant her the permit.

Yours faithfully,




DR. SHERRY OLUCHINA
COD, NURSING EDUCATION, LEADERSHIP MANAGEMENT & RESEARCH



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Twitter: @UONKNH_ERC https://twitter.com/UONKNH_ERC



KENYATTA NATIONAL HOSPITAL
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Telegrams: MEDSUP, Nairobi

Ref: KNH-ERC/A/96

Jemimah Wangari Wanjiru
Reg. No.HSN311-3266/ 2017
School of Nursing
College of Health Sciences (CoHES)
J.K.U.A.T

Dear Jemimah

RESEARCH PROPOSAL –ASSESSMENT OF ESSENTIAL NEW-BORN CARE PRACTICES AMONG POSTNATAL MOTHERS ATTENDING KENYATTA NATIONAL HOSPITAL (P1017/12/2019)

This is to inform you that the KNH- UoN Ethics & Research Committee (KNH- UoN ERC) has reviewed and **approved** your above research proposal. The approval period is 9th March 2020 – 8th March 2021.

This approval is subject to compliance with the following requirements:

- Only approved documents (informed consents, study instruments, advertising materials etc) will be used.
- All changes (amendments, deviations, violations etc.) are submitted for review and approval by KNH-UoN ERC before implementation.
- Death and life threatening problems and serious adverse events (SAEs) or unexpected adverse events whether related or unrelated to the study must be reported to the KNH-UoN ERC within 72 hours of notification.
- Any changes, anticipated or otherwise that may increase the risks or affect safety or welfare of study participants and others or affect the integrity of the research must be reported to KNH- UoN ERC within 72 hours.
- Clearance for export of biological specimens must be obtained from KNH- UoN ERC for each batch of shipment.
- Submission of a request for renewal of approval at least 60 days prior to expiry of the approval period. (*Attach a comprehensive progress report to support the renewal*).
- Submission of an *executive summary* report within 90 days upon completion of the study. This information will form part of the data base that will be consulted in future when processing related research studies so as to minimize chances of study duplication and/ or plagiarism.

For more details consult the KNH- UoN ERC website <http://www.erc.uonbi.ac.ke>

9th March 2020



Protect to discover

Yours sincerely,



PROF. M. L. CHINDIA
SECRETARY, KNH-UoN ERC

c.c. The Principal, College of Health Sciences, UoN
The Director, CS, KNH
The Chairperson, KNH- UoN ERC
The Assistant Director, Health Information, KNH
Supervisors: Dr. Drusilla Makworo, School of Nursing (J.K.U.A.T), Dr. Simba, School of Nursing (J.K.U.A.T)

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REPUBLIC OF KENYA



NATIONAL COMMISSION FOR
SCIENCE, TECHNOLOGY & INNOVATION

Ref No: 919398

Date of Issue: 27/May/2021

RESEARCH LICENSE



This is to Certify that Ms.. JEMIMAH WANGARI WANJIRU of Jomo Kenyatta University of Agriculture and Technology, has been licensed to conduct research in Nairobi on the topic: ASSESSMENT OF ESSENTIAL NEWBORN CARE PRACTICES AMONG POST NATAL MOTHERS ATTENDING KENYATTA NATIONAL HOSPITAL for the period ending : 27/May/2022.

License No: NACOSTI/P/21/10687

919398

Applicant Identification Number

Director General
NATIONAL COMMISSION FOR
SCIENCE, TECHNOLOGY &
INNOVATION

Verification QR Code



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Appendix VI: Analysis Output

Signs that breastfeeding is going well	n	%	Signs of possible difficulty	n	%
BODY POSITION					
Mother relaxed and comfortable	168	84	Shoulders tense, leans over baby	32	16
Baby's body close, facing breast	138	69	Baby's body away from mother's	62	31
Baby's head and body straight	102	51	Baby's neck twisted	98	49
Baby's chin touching breast	67	33.5	Baby's chin not touching breast	133	66.5
Baby's bottom supported	98	49	Only shoulder or head supported	102	51
RESPONSES					
Baby reaches for breast if hungry	98	49	No response to breast	102	51
Baby roots for breast	79	39.5	No rooting observed	121	60.5
Baby explores breast with tongue	111	55.5	Baby not interested in breast	89	44.5
Baby calm and alert at breast	144	72	Baby restless or crying	56	28
Baby stays attached to breast	187	93.5	Baby slips off breast	13	6.5
Signs of milk ejection	166	83	No signs of milk ejection	34	17
EMOTIONAL BONDING					
Secure, confident hold	138	69	Nervous or limp hold	62	31
Face-to-face attention from mother	177	88.5	No mother/baby eye contact	23	11.5
Much	173	86.5	Little touching	27	13.5

touching by mother				orShaking or poking baby		
ANATOMY						
Breasts soft after feed	177	88.5		Breasts engorged	23	11.5
Nipples stand out, protractile	184	92		Nipples flat or inverted	16	8
Skin appears healthy	188	94		Fissures or redness of skin	12	6
Breast looks round during feed	169	84.5		Breast looks stretched or pulled	31	15.5
SUCKLING						
Mouth wide open	150	75		Mouth not wide open, points forward	50	25
Lower lip turned outwards	113	56.5		Lower lip turned in	87	43.5
Tongue cupped around breast	112	56		Baby's tongue not seen	88	44
Cheeks round	169	84.5		Cheeks tense or pulled in	31	15.5
More areola above baby's mouth	142	71		More areola below baby's mouth	58	29
Slow deep sucks, bursts with pauses	187	93.5		Rapid sucks only	13	6.5
Can see or hear swallowing	169	84.5		Can hear smacking or clicking	31	15.5
TIME SPENT SUCKLING						
Baby releases breast	67	33.5		Mother takes baby off breast	133	66.5
<15mns	68	34				
16-30mns	63	31.5				
31-45mins	47	23.5				
>45mins	22	11				