DETERMINANTS OF CORD CARE PRACTICES AMONG CAREGIVERS OF BABIES 0-6 WEEKS ATTENDING CLINIC AT MOMBASA COUNTY REFERRAL HOSPITAL, KENYA.

PENINA MUIA MULWA

A THESIS SUBMITTED IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE AWARD OF MASTER OF SCIENCE DEGREE IN NURSING OF

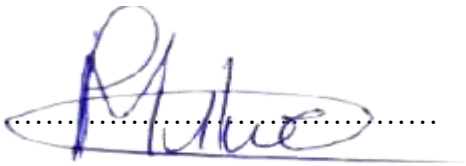
MOUNT KENYA UNIVERSITY

NOVEMBER 2023

DECLARATION AND APPROVAL

Declaration by the Student

I, Penina Muia Mulwa, hereby certify that this thesis is my original work and that it has not been submitted for a degree or prize at any other university.

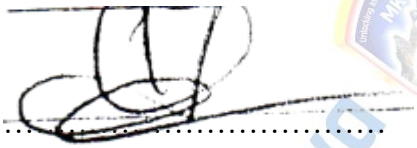
Signature……  …… Date……6/03/2023…….

PENINA MUIA MULWA

MSCN/2014/79794

Approval by the Supervisors

We affirm that the work presented in this thesis was completed under our supervision by the candidate.

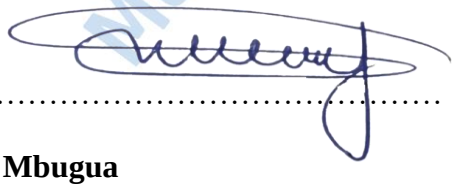
Signature……  …… Date……6/03/2023…….

Dr. Jane Karonjo

Dean School of Nursing

College of Health Sciences

Mount Kenya University

Signature……  …… Date……6/03/2023…….

Dr. Ruth Mbugua

Lecturer

School of Nursing

College of Health Sciences

Mount Kenya University

DEDICATION

This thesis is dedicated to my family for their perseverance and forbearing with me during the entire period.

ACKNOWLEDGEMENTS

First and foremost, I would like to thank GOD for granting me strength and grace that has made all this possible.

I am grateful to my supervisors, Dr. Jane Karonjo and Dr. Ruth Mbugua for their professional guidance and motivation. From the moment I produced the concept note until the project's completion, their attention to detail and prompt comments were crucial.

Special thanks to the team at Mombasa County Referral Hospital who supported me in facilitating data collection. To my research assistants, thank you for helping distribute survey questionnaires as well as offering key contacts of participants who took part in the study.

I wish to acknowledge the study participants, the Mother Child Health- Child Welfare Clinic head of department, the department and the Mombasa County Referral at large for their valuable contribution in helping me develop this thesis.

ABSTRACT

The majority of newborn fatalities, according to the Dessalegn, N., et al 2022 the WHO estimated 4 million annual deaths for neonates, taking place in underdeveloped nations. Within 1 week to 6 weeks post-delivery care of the umbilical cord stamp is crucial and should be kept clean and dry for proper healing. The aim of the study was to assess cord care practices among care givers of babies aged 0-6weeks attending maternal child health/family planning clinic services at the Mombasa County referral hospital. The study aimed at establishing if social demographic, social cultural and facility related factors were significantly affecting cord care among care givers of babies 0-6 weeks. The study adopted a descriptive cross-sectional study design. Systematic random sampling was employed to choose respondents with every eighth client consenting to the study being chosen. A total of 376 respondents were selected for the study. Both qualitative and quantitative data was used. Quantitative data was collected using a structured interviewer guided questionnaire. All ethical considerations were sought prior to data collection. Qualitative data was analyzed based on key themes of the study while quantitative data was analyzed using statistical package for social studies (SPSS) version 21. The results were presented using pie-charts, graphs and frequency tables. Inferential statistics were done using Chi square at 95% confidence interval and $p \leq 0.05$ considered significant to show variable associations. The results revealed 56.3% of respondents practiced appropriate cord care. The main method of cord was keeping it dry. The most common method of inappropriately managing the cord was application of breast milk. Majority of the babies cord stamps took 3-4 weeks before healing. Majority of socio-demographic factors were significantly associated with cord care practices with a p value < 0.05. Socio-cultural factors such as cord care influencer (p=0.001), mother staying away from the child's father (p=0.011), babies kept away from visitors till healing (p=0.002) and cord causing tension and anxiety (p=0.001) were significantly associated with cord care practices. Majority of health system factors such as ANC attendance (p=0.013), taught on cord care practice (p=0.001), items for cord care (p=0.004) and provision of adequate information (p=0.018) were significantly associated with cord care practices. The study concludes that the level of practicing appropriate cord care was above average. The socio-demographic, socio-cultural and facility related factors had impacted on the cord care practiced among caregivers in Mombasa County Referral Hospital. The findings of the study would be used to formulate policies to act as a guide for cord care practice in reducing neonatal sepsis related to cord infection.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF ABBREVIATIONS AND ACRONYMS

ANC	:	Antenatal care
MCRH	:	Mombasa County referral hospital
CWC	:	Child welfare clinic
CHVS	:	Community health Volunteers
KDHS	:	Kenya Demographic Health Survey
KHIS	:	Kenya Health Information System
MCH	:	Maternal Child Health
MDG	:	Millennium Development Goal
MOH	:	Ministry of health
MCH	:	Maternal child health.
MMR	:	Maternal Mortality Ratio
MNMM	:	Maternal Neonatal Morbidity and Mortality
MNCH	:	Maternal, Newborn, and Child healthcare
NMR	:	Neonatal Mortality Rates
RH	:	Reproductive Health.
FDA	:	Food and drug administration
SDG	:	Sustainable Development Goal
WHO	:	World health organization.
HEWs	:	Health extension workers

CHAPTER ONE

INTRODUCTION

This is about the study background of the study, problem statement, justification of the study, the study objectives, the study questions, and significance of the study and finally the Operational Definition of Key Terms

1.1 Background of the Study

Neonatal infections are thought to be the cause of approximately 1 million infant deaths yearly across the world, accounting for more than one-third of the entire burden of neonatal infections (WHO, 2020). Preterm delivery (28%), serious infections (26%), and suffocation (23%) are thought to be the three main primary causes of newborn fatalities on a global scale. Over the last ten years, that share increased from 37% to what it is now, and it is expected to continue to rise internationally. An estimated 4 million newborns die each year in the world, with 460 000 of those deaths attributed to serious bacterial illnesses, with cord infections leading the way (WHO, 2020). Omission of bathing neonates until the stamp has fallen has been seen among mothers delivered at home as a means for rising chances of cord infection (Hutchinson, P 2023) With these challenges unattended, 450 newborn children die hourly in the world from preventable causes. In the first four weeks of life, it's estimated that over a million African babies die with majority dying in the villages especially home deliveries that go unaccounted (Bassi, A. P et al 2020).

According to World Health Organization health care workers can help save over two thirds of newborns through existing maternal and newborn care modalities in which standardization of cord care should be given a priority to ensure neonatal infections related to the cord are curbed (WHO, 2017). It is s recommended that dry cord care should be done until the stamp falls a practice that is not embraced. According to

Kenya Demographic Health survey 2014, neonatal deaths account for 41% of all child deaths before the age of five (KDHS, 2014). After delivery, the newborn must make the expected transition to extra uterine life more so following the cutting of the umbilical cord. Aseptic technique must be employed in cutting the umbilical cord in order to help prevent invasive infection from gaining entry in to the neonate's blood stream. The umbilical cord is clamped (or tied tightly) in order to prevent bleeding through the umbilical blood vessels, Cutting and clamping of the cord ends the baby's dependence on the placenta for oxygen and nutrition. The umbilical stamp takes 1-3 weeks before falling down and healing. It's after twenty-four hours that new born infants begin to develop body protective flora (Acharya, 2020). Environmental sources around the baby like the mother's birth canal, care givers hands and maternal skin tend to harbor bacteria and may serve as sources of infection (Asiegbu, et al., 2019). Due to the patent vessels in the unhealed umbilical cord that allow for direct microbial contact, it serves as a significant entry point for both local and invasive infections.

Historically, different and varied practices related to umbilical cord care were employed including a variety of cleansing agents and techniques. In Africa, care of the cord after delivery has been influenced by traditional beliefs according to a study carried out in 23 African countries. Many substances were reportedly used as cord applications. A child's survival is most at risk during the first 28 days of life, when there are 18 fatalities per 1000 live births on average worldwide. Africans used a variety of lubricating agents, drying agents, and medicinal agents once there was suspicion of infection. A study done in Ethiopia found that whenever the cord stump was viewed to be too brittle, cracked or bleeding Africans would apply anything that would moisturize or soften the cord. Substances like cooking oil, motor oil, breast milk, Vaseline, cream from sour milk, charcoal, medicinal herbs and oil-based balm (Central

Statistical Agency Addis Ababa E. Ethiopian demographic and health survey, 2016). All infants born at home in unsafe environments which have high neonatal mortalities should have Chlorhexidine applied on the cord stamp to prevent omphalitis which has been seen to raise neonatal mortality to 30 per 1000 live births (WHO, 2020).

In Kenya the policy guidelines emphasize on dry cord care. A do-nothing strategy" to all newborns. Studies have shown inconsistency in the implementation of cord care within the country and in real practice every hospital adopts its own style of caring for the cord. There has been a rise on infections related to cord separation delay, the relationship between bacterial colonies in the umbilicus and incidence of infection has not been clear since originally the care for the umbilicus was geared towards control and prevention of infection (WHO, 2020). The length of cord separation has been seen to increase with use of antimicrobials like Isopropyl alcohol. Many facilities have been seen to continue the routine use of alcohol with an aim of promoting drying of the cord. Neonatal deaths related to infection Omphalitis (umbilical infection) continues to be a problem in developing countries. Home deliveries which mostly embrace the use of non-sterile procedures increase the risk of omphalitis in newborns. There are inadequate resources in the developing countries to adequately manage umbilical cord infections hence the high neonatal mortality rates. The first week of life is the riskiest week for newborns, with poor postnatal care programs where most mothers are seen to bring their newborns to the clinic after two weeks following delivery only for immunization. Cord care remains fundamental and it's therefore important for mothers to be well pre pared before birth on how to take care of the cord (Majumder et al 2018).

Triple dye, isopropyl alcohol (alcohol), povidone-iodine (Betadine), antibiotic ointments, soap and water, or no treatment at all are now suggested and used in the US but vary from hospital to hospital (WHO, 2020). Cord care has been controversial with

many communities doing it their own style and midwives all over the world have been advising mothers to either swab with antiseptics and maintain the cord dry without clear guidelines and policies on cord care. This study seeks to establish the determinants of cord care practices among the women with children up to six weeks at Mombasa County Referral Hospital.

1.2 Statement of the problem

The umbilicus can be a source of infection in the first few days of life depending on care practices to include how its cut and tied. (Bassi, A. P et al 2020). An estimated 4 million newborns die each year in the world, with 460 000 of those deaths attributed to serious bacterial illnesses, with cord infections leading the way (WHO, 2020). Claims that studies in several underdeveloped nations demonstrate the use of various substances to the cord, including cow dung, ash, dirt, saliva, rat feces, turmeric, oil, and butter, which are often used on the umbilical stamp wound to speed healing. The use of chlorhexidine was formally advised in a new umbilical cord care guidance published by the WHO. In many Sub-Saharan African nations, infections are a significant cause of neonatal mortality, accounting for almost half of all newborn deaths in high mortality regions. The umbilical cord stump is often contaminated and is the source of many of these diseases.

While "dry cord care" has been promoted as a technique to enhance umbilical cord cleanliness, this strategy hasn't always had the desired result. Mothers all over the world began utilizing different conventional and unconventional items, such as ash, dirt, feces, and edible oil, in the lack of a particularly advised product (WHO, 2019). Most of these practices are known to increase the risk for omphalitis, a severe cord infection which is associated with high neonatal mortality. In Kenya currently there are

no clear guidelines on cord care and it's done as per facility policies and protocols. According to KDHS 2014 estimated that 3000 neonatal deaths occur annually in the country, 14 neonates die daily of whom 30% are as a result of sepsis.

The Mombasa County Referral Hospital has been recording increasing numbers of neonates with neonatal sepsis with a greater percentage as a result of poor cord care as per reports on neonatal morbidity for 2016 with deaths rising from 15 neonates a month to above 35. Annually a total of 180 neonates admitted in the NBU suffered sepsis alongside other neonatal conditions with an estimated 800 neonatal deaths in a span of five years. The questions asked by majority of the women who visit the CWC clinic regarding the cord stamp and verbal reports given by the CHVS on how the communities around treats the cord stamp prompted the researcher to want to know how cord care is done by care givers of babies up to six weeks attended in coast general hospital CWC clinic. Certain procedures, such as clean cord care (cutting and tying the umbilical cord with a sterilized device and thread) and thermal care (drying and covering the infant after birth), have been identified as being crucial in reducing neonatal morbidity and death. (Bassi, A. P et al 2020). It is with this in mind that prompted the researcher to find out the determinants of cord care practices among caregivers given that the cord highly contributes to neonatal sepsis, a major cause of neonatal morbidity and mortality.

1.3 Justification of the Study

Sustainable development goal (SDG) 3 dictates that, every person needs good health and well-being. In an effort to ensure that all neonates survive the period after delivery, all care givers must adopt the right modalities of cord care to prevent them from neonatal infections. It is important to carry out this study on care givers of children

aged 0-6 weeks at the Mombasa County level 5 hospital following a great uncertainty on how cord should be taken care of until healing.

There hasn't been a clear guideline in the MOH on cord care and many researchers have published different modalities of cord care with the majority advising care givers to keep the cord dry for natural healing to take place. Traditional practices, myths and certain misconceptions regarding the cord have been pointed out by clients during service delivery which may positively and negatively impact on the care of the cord according to base line survey reports conducted by EU In April 2016. Many clients report certain practices that may serve as determinants of how the cord is taken care of affecting the neonate's wellbeing by promoting morbidity (Komakech, Et al 2020).

The study is in line with the Kenyan maternal health guideline adopted from the WHO guidelines 2018 which require all mothers/neonates to attend a postnatal clinic after delivery up to six weeks where issues of cord care are addressed. Kenyan Constitution gives right to health for all. That means mothers and neonates are not excluded. The study sought to find out the determinants of cord care practices in this community that may impact on cord healing given that Mombasa County hospital was recording high numbers of neonatal deaths of who's the biggest percentage was related to neonatal sepsis.

1.4 Objective of the Study

To assess the determinants of cord care practices among caregivers of babies 0-6weeks at the Mombasa County Referral Hospital.

1.5 Specific objectives

1. To determine the influence of socio-demographic factors on cord care practices among caregivers of babies aged 0-6 six weeks attending MCH/FP clinic at Mombasa County Referral Hospital.
2. To find out the socio-cultural factors influencing cord care practices among care givers of babies aged 0-6 six weeks attending MCH/FP clinic at Mombasa County Referral Hospital.
3. To identify the facility related factors influencing cord care practices among caregivers of babies aged 0-6 six weeks attending MCH/FP clinic at Mombasa County Referral Hospital.

1.6 Research questions

1. What are the socio-demographic factors influencing cord care practices among caregivers of babies aged 0-6 six weeks attending MCH/FP clinic at Mombasa County Referral Hospital?
2. What are the socio-cultural factors influencing cord care practices among care givers of babies aged 0-6 six weeks attending MCH/FP clinic at Mombasa County Referral Hospital?
3. What are the facility related factors influencing cord care practices among caregivers of babies aged 0-6 six weeks attending MCH/FP clinic at Mombasa County Referral Hospital?

1.8 Hypothesis of the Study

Socio-demographic, socio-cultural and facility related factors are not significantly associated with cord care practices among care givers of babies 0-6 weeks attending MCH/FP clinic at Mombasa County Referral Hospital.

1.9 Assumptions of the study

Data collection was done at the facility and it was assumed that the respondents were able to give accurate information and responses. The target population was assumed to give variance in responses due to the cultural and religious diversity, however this variance wasn't observed during the study since all responses revolved around common practices. That religious believes may not affect openness of the respondents in answering cord care related questions. The study revealed that religion did not affect at all the willingness of respondents to speak about cord care. One limitation is that the findings of this study would not be generalized for the whole country given that the study area is unique in itself.

1.10 Operational definition of Key Terms

Neonatal mortality: During the first month of life, death occurs.

Omphalitis: Umbilical stump infection that is localized and accompanied by redness, swelling, warmth, discomfort, or purulence.

Participant/respondent: Depending on the context, may refer to either the mother or the neonate in the mother-neonate combination.

Umbilical cord hygiene: Air drying the chord, using methylated spirit/chlorhexidine to the base of the cord, and sponge washing the neonate until the cord heals are all things that may be done to make sure the cord is dry and free of redness, warmth, swelling, and pus.

Proper/improper cord care: Five indicators were used to determine whether or not a person's cord hygiene was adequate; scores at or above the median indicated adequate cord hygiene, while scores below the median indicated inadequate cord hygiene. These indicators included napkin folding technique, length of stay in the hospital, frequency of bathing, cleanliness of hands, and use of soap and lotion.

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

This chapter consists of different reviews based on the study objectives. The chapter is also consisted of the theoretical framework and conceptual framework. This chapter was organized into three sub-sections, namely; conceptualization, theoretical orientation and empirical review. The parameters were measured by this study were discussed under conceptualization and were summarized in a conceptual framework. The review enhanced an understanding of the previous contributions to the academic resource outsourcing problem. This section examined the body of literature that pointed to the answers to the problem of the study. It looked into the approaches or models of outsourcing practices and showed how they were applicable to the problem of the study.

2.1 Theoretical Framework

The theoretical framework used here was the health belief model (HBM). The model was at first conceived as a methodical framework through which to explain and foretell health-promoting actions. The enthusiasm with which people seek out and use health care was analyzed. They revised the model once again after sometime added general motivation towards health care with an aim of comparing the role of persons towards seeking healthy behaviors and behavior towards illness. These psychologists were interested in the behavior of individuals who were mostly unable to engage in practices of preventing illness across the world.

This model states that once an individual perceives a certain threat in health, three factors influence the course of action i.e., the values one holds regarding health, the

interest and concern on matters of health, the specific health beliefs that expose the threat directly, and the consequences believed to be associated with the particular threat. The threat which directs an individual towards action, if the benefits are more compared to the risks, then the recommended health action tends to be undertaken. Socio-Cultural factors such as house hold practices, myths and misconceptions and religious beliefs may have a significant influence on cord care practice and this model will suit this study. Socio demographic factors like low levels of education, low income contribute to quality of life of persons in what they value most and this may influence cord care.

The HBM explains and predicts preventive health behavior, sick role, illness and behavior change. This model suits the study on cord care which is focused on preventive care which may/may not be influenced by perception, knowledge and attitude. Cord care is a practice that's key in prevention of neonatal sepsis related to cord infections. It is essential that the stump of the umbilical cord be kept clean and dry until the wound has completely healed in order to reduce the risk of newborn sepsis that is associated with the umbilical cord. Cotton wool, clean towel, and a basin of sanitized water that has been cooled from boiling may be used to clean the cord. It is possible to disinfect the umbilical cord as soon as possible after delivery. The vessels in the umbilical cord may be successfully closed by employing the plastic cord clamps that are accessible in most places around the nation. Cutting the cord should include sterile and sharp instruments. In most cases the use of blunt instruments often results into infection which could possibly come as a result of trauma to the tissues of the umbilical cord triggering inflammation. A long stump may possibly increase chances of infections because it is harder to keep clean and dry (Asiegbu, U. V.2019)

The health belief model [HBM] served as the theoretical foundation for this investigation. In the words of (Asiegbu, U. V.2019), this is a psychological model that both predicts and explains the desire to pursue health. It focuses on the opinions and attitudes of individuals. Individuals' health-related behavior is predicted to be influenced by their perception of possible vulnerability, severity, benefits, and obstacles to taking preventive or curative action, according to this idea. In the model, it is hypothesized that individuals' health-seeking activity has an impact on how they perceive the dangers posed by a certain health concern. It is also impacted by the reward that is associated with taking action to mitigate the hazard. The HBM enables a more in-depth analysis and prediction of client behavior, as well as compliance with health-care regimens, than was previously possible.

According to (Limbu, Y. B.,2022), the HBM hypothesis was initially created in the 1950s by social psychologists Hoch Baum, Rosenstock, and Kegels. The theory was developed by Hoch Baum, Rosenstock, and Kegels. The idea of human behavior modeling (HBM) is based on six basic notions that aid in the prediction and explanation of human behavior. It consists of six ideas: vulnerability, severity, benefits, barriers, modifiable factors, and a call to action.

The recommended length of cord stamp following delivery is usually 2-3cm long to ease care. Cord infections and tetanus neonatorum can be prevented through proper clean cord care at birth and in the subsequent days following delivery. For the umbilical cord to remain uncontaminated by pathogens aseptic technique in its care must be employed. The outcome variables of interest to this study are the determinants of cord care practices inclined towards care giver related factors, social cultural related factors and facility related factors influencing cord care practice.

2.2 Empirical Literature

2.2.1 Introduction

The mortality rate for children under the age of five fell from 87 deaths per 1000 live births in 1990 to 51 deaths per 1000 live births in 2011. This is an improvement over the rate of 87 deaths per 1000 live births in 1990. The progress has been seen to be unsatisfying since all target indicators posing a global risk haven't been met. Bringing the worldwide under-5 mortality rate down to 29 per 1,000 live births requires an annual rate drop of 14.2% between 2011 and 2015, which is more than the 2.5% decline seen between 1990 and 2011. Most neonatal fatalities occur in underdeveloped nations, where an estimated 4 million infants each year lose their lives. Majority are due to infections with an estimate of 300 000 infants succumbing from tetanus every year while 460,000 neonates die from severe bacterial infections take a lead (WHO, 2020). The postnatal period, which includes the time immediately after delivery, is considered very important by the World Health Organization. About 2.8 million neonates died during their first month in life where a million died the first day after delivery in 2013. Four hundred and fifty (450) newborn children die hourly in the world from preventable causes (WHO, 2020). In the first four weeks of life, it's estimated that over a million African babies die with majority dying in the villages especially those of home deliveries that go unaccounted (Komakech, 2020). According to the report, health care workers can help save a good number newborns through existing maternal and newborn care modalities in which standardization of cord care should be given a priority to ensure neonatal infections related to the cord are curbed.

However, in South-East Asia and sub-Saharan Africa, only 67% and 48% of women, respectively, give birth with the aid of professional workers, raising the subject of newborn care and the prevention of sepsis. Data from the Demographic and Health

Surveys in 23 countries in sub-Saharan Africa show that only 13% of women who gave birth at home got postnatal care within 2 days after delivery, missing the opportunity to obtain expert guidance on cord care (Mohammad, 2021). In Kenya the policy guidelines emphasize on dry cord care, a do-nothing strategy to all newborns. Studies have shown inconsistency in the implementation of cord care within the country and in real practice every hospital adopts its own style of caring for the cord (Mohammad, 2021)

Immediate postpartum care practices and delivery under unhygienic conditions has been largely associated with infections among newborns and more so cord sepsis due to likely chances of cord contamination. At birth the change in pressure in fetal lungs which occurs as result of the baby breathing in atmospheric air leads to a disconnect in the fetal circulation in utero and the blood is redirected to the lungs for oxygenation. Newborns, according (Clark H, 2020), don't have time to grow their own protective flora until after the first twenty-four (24) hours of life. The umbilical stump is colonized by bacteria from the mother's birth canal, the natural flora of the mother's skin, and the hands of the caregivers who must cradle the newborn. The patent vessels of an unhealed umbilical cord allow bacteria to communicate directly, leading to both local and invasive infections. Signs of infection of the cord are: oozing yellowish or white pus, bleeding from the stump, reddening and swelling of the base, foul smelly discharge and any implication that the baby is in pain. All these signs may lead to omphalitis a severe infection of the cord which is very fatal.

2.2.2 Historical trends of cord care

Historically, inconsistent practices related to umbilical cord care have been applied throughout the world. African mothers too have had various applications to the cord in an attempt to quicken the healing. Today’s standards of umbilical cord care may be

linked to practices in the past and mostly in the developing countries like Kenya. Internationally, the World Health Organization has advocated since 1998 dry cord care and if possible, light covering with a clean cloth and cleaning with soap and water incase its soiled. American Academy of Pediatrics considers all antiseptic treatments to have the same impact and none is more powerful than the other while the Germany Association for neonatology recommends keeping the cord clean and dry. Continued alcohol use has received no support and there is no evidence supporting the change in the standards of care geared towards promotion of natural healing of the umbilical cord stump. Certain traditional elements on nursery routine were eliminated by these recommendations. The uses of protective gear during the care of infants like caps and musk, gowns. Hairnets, postponing the baby's first birth, and allowing students/parents in to the nursery to support in care was no longer employed (WHO,2020).

Many theories have been used in the past on the best practices for cord care in newborns. They included applying or rubbing alcohol whenever the nappy has been changed, use of iodine in cleaning the area or application of topical creams. This has been seen to reduce chances of infection among newborns alongside speeding up the drying process. In conclusive evidence, very little or none of these strategies has been seen to help achieve the objective of cord care or seen to reduce cord healing time (Acharya, 2020). Researchers in Haiti found that many Haitians were open to changing their conventional cord care methods in light of concerns that these methods might be hazardous to newborns. The results in this study depicted ability to be accepted in altering the traditional practices among care givers in Haiti. The health care professionals have considerably debated on most effective modalities of cord care that should be applied.

Initially, the care of the cord was based on bacterial colonization and infection concerns without a clear understanding of the relationship between the two. Antimicrobials like isopropyl (alcohol) have been largely used in the world but have only been proven to lengthen the falling off of the stamp (WHO, 2020). Indeed, alcohol is often routinely used as an antimicrobial agent by most healthcare workers in keeping the cord dry and quickening separation and healing of the umbilical stump. In the United States, different cord care regimens have been used despite many studies in the past ranging from use of isopropyl alcohol, povidone iodine, and antibiotic ointments. Despite all cord care regimens and options recommended there is variation in hospitals within the US on cord care practices with others giving no treatment at all. Increased colonization which comes as the neonate ages exposes newborn to Omphalitis severe cord infection, (Beal K, et al 2019). In Kenya today cord care is a full responsibility of the care giver and from the facilities, dry cord care is encouraged today with some facilities still practicing use of antimicrobials to swab the cord. Socio cultural and socio demographic factors like traditional beliefs myths and misconceptions, level of education and economic status have been seen to influence the practice on cord care in varied communities in the country. Despite many studies and investigations on modalities of cord care history contributes a lot to the twist on cord care practice depending on the situation being handled.

2.2.3 Cord care practices

The stump and base of the umbilical cord should not be red, moist, or have a purulence in order for it to be considered clean and sanitary (Kashyap, S., 2022). The presence of some late indications in the newborn, such as pus discharge, yellowing of the eyes or soles of the feet, and severe temperatures, may also be indicative of an unclean cord (Komakech, 2020). From the moment of birth and throughout the postnatal

environment, cleanliness of the cord may be maintained by aseptic cord handling and treatment (Kashyap, S., 2022)

For infants born at home or in high mortality areas, the World Health Organization (WHO,2020) advises the use of Chlorhexidine Digluconate 7.1% (delivering 4% chlorhexidine), whereas babies born in health care facilities or low mortality areas should have dry cord care. Additionally, the World Health Organization recommends delaying the first bath until after the first day, or at least six hours in culturally rigid environments (WHO, 2020). Topical antiseptics, such as chlorhexidine, are suggested for inclusion in Essential Newborn Care (ENC) recommendations for the prevention of newborn sepsis (Akter et al., 2019). Chlorhexidine has been shown to be protective in a community-based randomized study in Tanzania and in many systematic reviews (Imdad et al., 2019). When it comes to proper cord management, Kenya's statutory rules for perinatal care are vague at best.

The mother's understanding of proper cord hygiene has a direct impact on the care of the infant (Kashyap, S., 2022). 70% of postnatal moms in a rural community in India had insufficient information on how to care for the umbilical cord and practice poor physical cleanliness, while 63.3% of postnatal mothers had unsatisfactory practices (Missiriya, 2019). It was determined that this was due to time restrictions, the distance between the house and the site of care, and the absence of a caretaker. There have been reports of differences in understanding; nonetheless, in the modern community areas of Nigeria, women were aware of the significance of properly caring for their newborns' umbilical cords. These mothers took care of their newborns' umbilical cords properly. The majority of them used cord clamps, washed their hands with soap and water before handling the cord, cleaned the cord with methylated spirit three times a day, did not apply anything after cleaning the cord, and had a good technique that involved cleaning

the base of the cord before the stump of the cord (Afolaranmi et al., 2019). Within this particular section of West Africa, living in rural regions and having one's baby delivered in a health facility were shown to be important predictors of effective cord care. This is due to the fact that, in contrast to medical professionals, the attendants who help deliver babies at home are more likely to engage in sociocultural cord practices, such as cutting the cord with a blade or thread that has not been sterilized, as well as applying traditional substances, such as cow dung (Komakech, 2020).

Traditional birth attendants, community health professionals, and traditional healers were all questioned and acknowledged to using potentially dangerous traditional applications including crushed charcoal, burnt cotton/nutmeg, ash, leaf mixtures, palm oil, or animal dung for cultural or spiritual reasons. Nonetheless, these community members saw the need to implement novel cord care methods, such as topical chlorhexidine, in order to reduce the prevalence of neonatal sepsis, which was interpreted as pus on the cord, a delay in cord drying, a reluctance to feed, or a high body temperature (Komakech, H.,2020)

WHO was prompted to consider the revision of the global policy on cord care following the publications from Pakistan, Nepal and Bangladesh, on 4% chlorhexidine being effective as an umbilical cord wash to prevent cord infections (Beal K, et al 2019). Their study found in Nepal that use of 4% chlorhexidine compared to dry cord care led to prolonged healing period. A similar report emerged from a Zambian study which too compared use of chlorhexidine versus dry cord care till healing is achieved. It was also found out in a study in Haiti that neonates were vulnerable to cord infections and it was a serious threat to them. There remained a challenge of adopting new emerging cord care modalities since the historically approved methods acted as barrier. Use of some traditionally sourced herbs and mixtures like ashes, breast milk, and

pumpkin flower fluid, powder ground from local trees, human saliva, ghee and water used to wash adult female genitals was believed to promote healing. Some of these practices were found during a study on cord care in Haiti Cord care practices are variable and often culture related.

According to research conducted in Zambia in the year 2022, mothers applied a variety of chemicals to their children's skin and umbilical cords, with particular attention paid to premature newborns. The chemicals that were used to apply it ranged from petroleum jelly to store-bought infant lotion to cooking oil and even breast milk. Powders composed of roots, burned gourds, or ash were the substances that were applied to the umbilical cord the most often (KEA Semrau 2019). Determining when to apply any material and what substance to apply is highly important when formulating policy about cord care. According to most Africans, it is believed that the cord should not be left to become dry and that's why substances as earlier mentioned are usually applied to keep the cord moist. Following a study done in Zambia, participants reported that if the cord was not separating hastily, any drying agents could be used. In this study many respondents reported and showed awareness of signs of cord infection such as reddening, oozing pus, fever and lack of separation and wound healing as what would prompt them to seeking health care. According to the biomedical model, the use of potentially hazardous practices like the application of dung, dust, charcoal, wasp nest powder, and other items like these is regarded to increase the risk of infection. This is a particularly relevant topic when taking into consideration the fact that cord care antiseptics that are now being advertised may lengthen the time it takes for the cord to separate.

Prolonging of the healing of the cord according to many in study done in Zambia was largely contributed to by, a father's infidelity, a mother beginning chores, or even

pregnant or menstrual women visiting the baby before the cord drops. Culturally healing of the cord stamp depended highly on behaviors of the family members which was a myth and misconception. All these cultural believes cut across in Africa where many traditional practices are linked with healing of the cord stamp. Breast milk had multiple indications for cord applications and many believed it had a great contribution towards healing of the cord. In studies done in Kenya at the Pumwani maternity hospital, many respondents reported the use of breast milk to prevent cord infection. It was reported that breast milk is used for lubrication to soften the cord.

Sierra Leonean interviewees disclosed many instances of unhygienic cord care, including the application of pounded cassava to the umbilical cord, the failure of the vast majority to postpone washing, and the use of dirty equipment for the majority (63%) of cord-cutting procedures (Sharkey et al., 2019). It was also shown that TBAs in Uganda encouraged moms to use treatments that raised the risk of umbilical cord infection (Komakech, H.,2020). Hyperemic cord stumps were more common in-home deliveries and affected 45.1% of newborns with neonatal tetanus in Kilifi (Ibinda et al.,2019). The frequency of omphalitis was as high as 37.6% in Pumwani (range: 30.48-44.72%). Smelly discharge, redness, and swelling around the umbilicus are all signs of umbilical cord infection (omphalitis) ,(Eyeberu, A.,2022)

Several lubricating agents have been used in Kenya generally such as oil-based agents e.g., Vaseline and breast milk as a protective agent against infection. All these have been applied on the cord in Kenya traditionally to enhance healing and prevent infection. Other agents seen to be of help are drying agents as cow dung, dust, powder and charcoal which have been applied to hasten the dropping of the cord if it takes long to detach. Most of these agents are potentially harmful and could be a portal of introduction of pathogens in the neonates‟ body system. Best cord care techniques need

to be determined in order to decrease newborn death and morbidity, since cord infections should typically be avoidable.

2.2.4 Facility related factors

Despite dry cord care being inappropriate and unacceptable in certain populations, it is not practiced in all health care facilities as recommended by the World Health Organization. There is increased risk for cord infections once delivery occurs under unhygienic environment and unskilled birth attendance. Nurses and midwives advocate for skilled birth attendance where at times application of a topical antimicrobials is usually advocated. Globally alcohol swabs have been used in the past with uncertainties due to the irritant effects of alcohol. The WHO recommended use of topical application of chlorhexidine to the umbilical cord stump in the first week of life for neonates born at home in areas with high neonatal mortality rates. A report analyzing the use of chlorhexidine as a topical application to the umbilical cord for babies born under unhygienic environments has significantly helped in reducing omphalitis. Recommendations have been made in the past by pediatricians on cleaning the base of the cord stump by rubbing with alcohol (Kashyap, S., 2022).

Today majority of them now recommend nothing for the cord and promote natural healing since alcohol is believed to delay healing or cause skin irritation. Other methods in caring for the baby's cord include the use of Goldenseal Root and Echinacea. All care givers are called upon to consult pediatricians when their neonates develop any cord infections or complications. It is recommended that care givers should allow the cord to dry out and fall off naturally and all care givers are called upon to avoid picking and pulling the cord off. Postnatal care is not embraced in Africa as many women and their infants only seek this care six weeks after delivery as they go

for immunization a time when the cord is likely to be healed. One postnatal visit has been seen to be embraced by 90% of women in the developed countries.

Home deliveries have been reported among two thirds of all women delivering in the sub-Saharan Africa, with 13% of these women attending postnatal clinic in two days post-delivery where cord care can further be addressed (Kashyap, S., 2022). In our country midwife's advice mothers to let the cord are exposed to air most of the time to promote healing. Today Kenyan guidelines recommend dry cord care in line with WHO recommendations; the amount of time required for healing is often reduced. Socio-demographic factors affect cord care in our country since the majority of women of the lower class will wrap neonates with "*kangas*" until the stamp heals some of which are never enough are serving as channels of infection. During CWC clinic majority of clients especially those delivered at home have been seen to avoid bathing their infants until the stamp falls with likelihood of raising the chances of infection. (Singh Et al 2019).

The World Health Organization (WHO) presently advises that dry cord care be used in impoverished nations, and that a solution of soap and water be used to clean the chord if it is obviously filthy. However, it is also recognized that there may be benefits associated with the use of topical antiseptics, especially as an alternative in settings where potentially dangerous practices are prevalent. According to WHO (2020), findings from community-based research conducted in underdeveloped countries revealed that infection rates in the umbilical cord are high. Furthermore, it was recommended that cord antisepsis may minimize newborn sepsis and mortality. However, further prospective research based in communities is required in order to identify the association between the use of antimicrobials and the risk of umbilical cord infection and to drive the creation of better procedures for cord care. In the same vein,

it has not been determined whether or if the use of a simple soap and water solution, which can already be in the house or might be readily available in many rural areas, is effective.

Investigations must be of sufficient size to detect differences in infection rates between regimens recommended by health care workers. Data from some trials should be availed early enough before researchers draw conclusions from them especially those with scarce and under designed trials Particularly dry cord alone, which is the current trend in newborn care in rich nations as well as poor ones, has to be carefully assessed before it can be pushed any further as the optimum approach. (Saaka, Et al 2018). Education on health is an effective method for making behavioral changes that lead to healthier ways of living. This should extend to include moms who care for the umbilical cord stump of their newborns in a variety of ways, particularly after they have been discharged from the hospital. In light of this, it is important to assess the nature of the health education on cord care that women get (if any) at the different health facilities where they go for prenatal care (Acharya,2020). There is a shortage of health education on proper cord care in some of our health institutions, and even in the places where it is offered, the information may not be evidence based.

The rampant staff shortage in facilities has compromised the quality of care hence dilute health talks and sometimes none since the health care workers are highly overloaded. We need to provide the staff with the information they need in order to educate the patients. The misunderstanding that now exists for mothers when it comes to the proper care of their newborns' umbilical cords should be alleviated or eliminated entirely by the implementation of a standardized and uniform approach of cord care. The care given to an umbilical cord frequently reflects the views of the community or the health care provider. Currently there is no good documentation on omphalitis in

developing countries and estimates are given as between 2 and 77 per 1000 live births for all skilled deliveries while home deliveries, its estimated at 1-15% and mortality remains high. Health care providers in Kenya have been seen to have variance in cord care practices since some use methylated spirit, others use alcohol swabs and others povidone iodine depending on which hospital in the country and its policies though the clinical guidelines recommend dry cord care.

Messages discouraging application of substances on the cord should be put in to account the local perceptions in relation to substances used in moisturizing the cord and promoting its healing. Facilities need to be supported too with adequate skilled staff that can be able to offer quality of services required and give key interest to health messages passed to the mothers (According to international Journal for contemporary medical research July 2021 (Bilkissu ilah Garba.), Mothers were aware of the need of practicing proper hygiene while cutting the umbilical cord, but they lacked knowledge and experience in other elements of cord care, and they lacked the confidence to handle the cord. KAP was connected with young, low-income moms with a low level of education who had obtained their information from sources other than health providers. This led to poor KAP. A significant section of the workforce in the health care industry had inaccurate and out-of-date information. Based on the findings of the research, it was suggested that health education on cord care should be provided at all levels of interaction with mothers, and that all primary health providers should have their understanding of cord care brought up to date. Research was out at institutions in Nairobi, Kenya, that provide services to an urban slum region.

A cross-sectional study was done in Nigeria which explored cord care practices and factors associated with appropriate use of recommended care among recently delivered mothers. The study concluded that umbilical stump being an important portal of entry

for bacterial infections in the newborn, the quality of newborn care determined was associated with cord infections (Asiegbu, Et al 2019). Majority of the respondents were found to have used methylated spirit on the cord stamp before separation.

2.3 Conceptual Framework

Conceptual framework presents the association between the research variables and often provides this association in a diagram. This makes it easy for the research and other readers of the research to understand and see this existing relationship (Recker, J. C., 2021). Under this there are the variables with their indicators from which questions for questionnaires and interview schedule are formulated. The data collection and analysis will depend on these instruments.

The conceptual framework outlines the operational variables in the study and links the theoretical framework to the study's variables. The independent variables include: Social demographic factors, Social Cultural practices and health facility-related factors. The dependent variable is to explore the determinants of cord care practices among caregivers of babies' 0-6weeks at the Mombasa County Referral Hospital.

The following image represented the conceptual framework of the study.

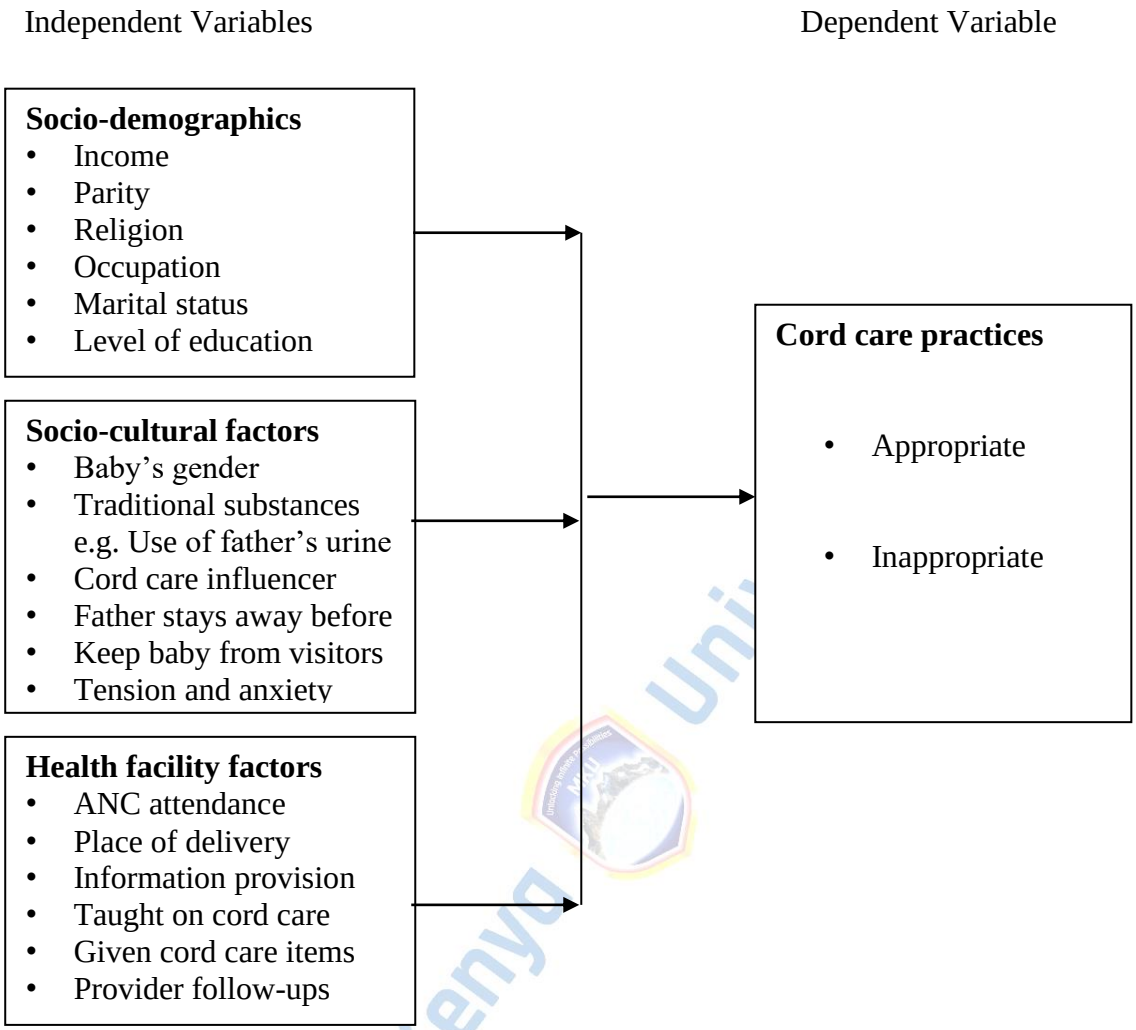


Figure 1: Conceptual Framework

2.4 Summary of Reviewed Literature

Reviewed literature will enlighten this study in the following ways. It will clarify the empirical foundation of the study. The literature review presented both independent and dependent variables of the title. It further looks at the empirical literature in terms of social demographic factors, Cultural practices and health facility-related factors as the objectives of the study. It will explain the theoretical framework of this study. It will describe the variables under investigation from research work done by other scholars. These empirical reviews will expose information gaps. Research findings generated from this investigation will bridge the identified knowledge gaps. Reviewed literature will point the study towards the most suitable research methodology to use.

CHAPTER THREE

RESEARCH DESIGN

3.0 Introduction

The current chapter consists of the introduction, research methodology, research design and the location of the study. Information on target population and sampling procedure is also stated, additionally, research instruments, piloting, data collection methods and data analysis are included.

3.1 Research Methodology

In this study, I employed a mixed methodological approach, which combines quantitative and qualitative research techniques to provide detailed information that was then analyzed to better comprehend the participants' underlying motivations, worldviews, and sources of creativity. Further, it drove further into the research subject, offering insights that may be used to identify patterns of thinking and opinion (Van Looy, A. (2021) As a result of the complementary nature of the quantitative and qualitative approaches, this technique was favored when insufficient evidence was a concern. There was a correlation between the amount of evidence and the quality of the results, therefore the integration of quantitative and qualitative methods led to better and more reliable findings (Schreiber & Asner-Self, 2019)

3.2 Study design

A descriptive cross-sectional study was adopted which aimed at establishing the determinants of cord care. This kind of study is carried out over a short period and at one point in time. The design is used in estimating the preferred outcome of a given population and is usually for planning purpose. It does provide an overview the

outcome along with the characteristics linked with it, at a specific point in time hence suitable for this research on cord care. The study applied quantitative methods of data collection to establish determinants of cord care among care givers of babies 0-6 weeks at the Mombasa County referral hospital MCH/FP clinic.

3.3 Location of the study area

The researcher undertook the study at Mombasa County referral hospital. Mombasa County covers 229.7 km^2 a population of 1,225,629. Mvita Sub County covers an area of 14.80 squares in km with a total population of 143,128and a population density of 11,422 persons per squares km. The population women of child bearing age are 34, 494. Mombasa county referral hospital is a level 5 hospital which receives clients from the whole of coast province. There are several health facilities offering maternal child health services with most of them referring all complicated cases to coast general hospital. The hospital being in Mvita serves the whole of coast Province as the only referral hospital. Based on reports on neonatal morbidity for 2016 Mombasa County referral hospital recorded rising deaths of neonates from 15 neonates a month to above 35.

This hospital, formerly known as the Native Civil Hospital and located in the Makadara neighborhood of Mombasa Island, was established in 1908. It has outpatient department starting with accident and emergency, casualty, MCH, OPD Clinics, inpatient wards of 672 bed capacity. Ten general wards, three maternity wards and one amenity. Open and laparoscopic general and gynecological surgery; cardiothoracic and neurological surgery; maxillofacial, pediatric, and endoscopic surgical procedures; endoscopy. The coast hospice provides a T.B clinic, a comprehensive diabetes center, funeral and cremation services, and palliative care for the terminally sick. Mombasa

county hospital MCH provides, immunization services, family planning services, early childhood diagnosis of H.I.V AIDS, PMTCT services, Postnatal care, growth monitoring and nutrition services. Approximately 3200 clients are seen monthly according to facility monthly reports.

3.4 Target population

According to (Riley, R. D., 2022), target population is the universe of units from which a sample is to be selected.). On the other, (Kourlaba, G., 2021) defined target population element as the individual participant or object on which the measurement is taken. The target population was caring givers of babies 0-6 weeks attending services at the Mombasa County level 5 hospitals at MCH/FP clinic. The clinic serves an estimated 37,440 caregivers in a year with a monthly attendance of about 3120 care givers.

3.5 Study population

The study population in this research included all caregivers of babies 0-6 weeks, attending MCH/FP clinic at the Mombasa County referral.

3.5.1 Inclusion criteria

The study included all care givers of babies aged 0-6 weeks attending maternal child welfare clinic at Mombasa County referral hospital. All care givers consenting to the study.

3.5.2 Exclusion criteria

Care givers with very sick babies were excluded. Unwell caregivers not in a position to give information regarding cord care.

Care givers who had not attained the age limit for consent were also excluded.

3.6 Study variables

3.6.1 Independent variables

The first independent variable was socio- demographic factors such as occupation, income, age, parity, gender, religion. The second independent variable was social cultural factors which included traditional beliefs and practices, myths and misconceptions, e.g use of father's urine, religious beliefs, father staying away and keeping the baby from the visitors until the cord stamp falls etc. Finally, the last independent variable was facility related factors such as attendance of ANC, taught on cord care, provision of information, follow-ups among others. All the dependent variables were measured using a checklist.

3.6.2 Dependent variable

The dependent variable for this study was cord care practices among caregivers of babies 0-6 weeks. They were categorized as appropriate or inappropriate depending on how the caregivers treated their babies' cords till the stamps fell.

3.7 Sampling procedure

Purposive sampling was used to choose study area. A systematic random sampling technique was used to sample caretakers of babies 0-6 weeks attending Mombasa County referral hospital MCH/FP clinic. Systematic random sampling technique was applied to get the participants at a predetermined interval of 8. The 8th client was

arrived at after sample size determination which was 376 from a total population served of 3120.To get the interval, the number of clients attended at the MCH clinic at the coast general hospital for three consecutive months was ascertained for this will include all clients coming for BCG, Birth polio, and first pentavalent, pneumococcal and first polio. Projection of these numbers will help determine which client is to be interviewed. The first participant was randomly selected using a Yes/No riffles. The total population of the babies served at the clinic aged 0-6 weeks per month was 3120, which was divided with the sample size 376 to get 8. An interval of 8 was employed in sampling respondents. The researcher assisted by research assistants visited the department of CPGH and collected data from sampled participants and later compiled it for results on findings.

3.8 Sample size determination

Fischer et al (1998) was used to determine the sample of respondents when the Sample size is more than 10,000

$$n=\frac{Z^2Pq}{d^2}$$

$$n=\frac{1.96^2x0.5x0.5}{0.05^2}$$

$$=384.1$$

At referral hospital, the sample size was;

nf = n/1+(n/N)

nf =desired sample size,

n= desired sample size when the population is more than 10,000

z= standard normal deviate at 95% CI (1.96)

p=proportion of respondents assumed to practice appropriate cord care practices (50%; 0.5)

q=proportion of respondents assumed to practice inappropriate cord care practices (1-p=0.5)

d=standard error at 95% CI (0.005)

N = estimate of the population size and first immunization doses i.e., MCH BCG and 1st Pentavalent 9360 in three months (OCT-DEC 2016). In average, 3120 are number of babies 0-6 weeks seen at referral hospital

MCH/FP clinic per month.

$$nf = \frac{384.1}{1+ (384.1/3120)} = 342$$

To cater for attrition rate, 10% of the respondents will be added to make the sample size=376.

3.9 Data collection tools and methods

Data was collected using a structured interviewer administered questionnaire which was developed by the investigator putting in to consideration the literature review on cord care practices. The questionnaire had four sections as guided by the study objectives including: socio-demographics, socio-cultural and facility related factors as well as cord care practices.

3.10 Piloting, Validity and Reliability of Research Instruments

3.10.1 Piloting of the Research Instruments

Piloting of the research tools was essential for designing and authenticating the instruments for enormous study and concludes if the anticipated results were inevitable. The data collections tools were at Port Reitz Sub-County. About 38 (10%) of the

respondents were interviewed. According to (Teresi, J. A., 2022), piloting research tools helped to check clarity, readability, as well as do away with misunderstandings and ambiguities. It also helped the researcher to point out any omitted, irrelevant and redundant items in the research tool. Piloting of research instruments was necessary for designing and validating research instruments for large study and determined if the desired outcomes were possible. Any gaps identified, anomaly or ambiguity was appropriately adjusted to ensure accuracy in the final questionnaire. The consistency of the participants in responding to questions from the instruments determined the quality and any necessary adjustments were done. Based on the three objectives responses from the 38 respondents showed that social demographic factors significantly affected cord care practice mainly based on age of care giver and place of residence with a p value 0.001. Both social cultural and facility related factors too had a significant influence on cord care practice with varied p-values for all the variables. Generally, both had p values of 0.001 & 0.005 respectively showing a great significant influence on cord care practice. This was part of validity of the research instruments.

3.10.2 Validity of the Research Instruments

It is said that validity is about the extent to which instruments quantify what they were intended to quantify. Each time, the results should be showing consistency. This can validate the tools for any study Hafizhah, D., & Istyadji, M. (2022). The researcher tapped the validity and experience of professionals and professors to evaluate the instruments and provide constructive criticism. Simply said, the researcher solicited the help of professionals and professors to review the instruments and provide comments to assure their validity and accuracy. An appropriate selection and training of research assistants was carried out to ensure consistency during data collection. A standardized way of carrying out interviews to respondents was adopted and a common style of

recording responses during the pretesting exercises. A daily review of all questionnaires was done to ensure that they are correctly filled. Any questions considered inappropriate during pretest was reviewed to ensure that the information needed is captured. The key researcher was verifying the completeness of the questionnaires daily.

3.10.3 Reliability of the Research Instruments

Research instruments were piloted in advance, and adjustments were made based on results. The same people were tested again, with a two-week interval in between. The consistency between the two exams was evaluated using Cronbach's alpha. A correlation of .700 was reached and judged the instruments' reliability as meaningfully suitable. Reliability is essentially the effectiveness of any data gathering tool or instrument. Reliability demonstrates that whatever it is measuring, it is doing so consistently. To ensure reliability of the questionnaire, the researcher avoided ambiguity in words, used correct and appropriate words and spellings so as to facilitate understanding and avoid embarrassing statements that could have had negative influence on reliability of the questionnaire. The researcher also avoided complicated instructions and terms that might have confused the respondents. Before distributing the questionnaires to the participants, the researcher submitted them to the supervisor for editing, evaluation and approval.

3.10.4 Establishing Dependability of Research Instruments

The level of trustworthiness of the interview schedules was achieved by the researcher through making an in-depth interview with the principals, BoM chairpersons and the education officers. This established a high degree of dependability in the non-numerical data tools (Janssen, L., Schouten, A. P. (2022). The researcher also interviewed a

sample of principals, BoMs and education officers to deduce the dependability of the interview schedules. The sampled participants were not part of the final study sample.

3.10.5 Establishing Credibility of Research Instruments

Credibility is the value of being believable or reliable. It is the quality or power of inspiring belief. Consequently, credible sources should be reliable to give evidence that can be believed to be true. It is a judgment that the readers make about how believable the writer is according to (Janssen, L., 2022). It is important since participants frequently decide to answer to a convincing message centered not on the content but on their perception of the communicator.

3.11 Data management

3.11.1 Data cleaning and storage

Every day data collected was reviewed by the researcher to ensure that all questionnaires are completely and accurately filled. She ensured that all questions are correctly answered, and then the data was systematically arranged according to the sections of the questionnaire to aid analysis. Research assistants were required to sign a confidentiality consent form before being allowed to take part in the research. Breach of the research rules set on data management was punishable by discontinuation and immediate replacement. The research assistants were required to collect information from primary respondents who are directly involved in the care of these babies. It was Storage was under lock and key accessible only to the researcher.

3.11.2 Data analysis and presentation

Data collected was analyzed using SPSS version 21.0. Inferential statistics was calculated using chi-square at 95% CI and p value less or equal to 0.005 was deemed to

be significant. The results were presented through graphs, percentages, charts and frequency tables.

3.12 Ethical consideration

Research ethics act as a guide to the behavior of the researcher when doing a study. They help him or her conduct the study in acceptable manner taking into consideration the rights of the participants. The researcher focused on some ethical issues which were considered before, during, and after the data collection. The following ethical guidelines were observed by the researcher and included access to research sites, informed consent, confidentiality and privacy; anonymity, mien and decorum, storage of data and plagiarism as explained underneath.

The study was submitted to and approved by the Mount Kenya University Research and Ethics Review committee for compliance with ethical standards. The research was authorized by the National Commission on Science, Technology, and Innovation (NACOSTI). Before beginning data collecting, the researcher went above and above to get approval from the Mombasa County Referral hospital study committee.

During the study, an informed consent was sought from study participants. The participant was assured of confidentiality and anonymity throughout out the study period. The respondents were requested to sign a consent form or thumb print to show agreement to participate in the study. The questions were asked by the researcher and research assistant and filled in the presence of the respondents. The participants gave information voluntarily. Informed consent is derived from the participant right to freedom and making their own decisions. This means that consent allows the participant to make their own decision and puts some part of responsibility on the respondent should there be a problem or challenge that arises during the study (Louis *et al*, 2018). Informed consent ensures that participants are well aware of the risks that

come about due to being part of the study and the consequences involved. In this study, the researcher ensured the participants who accept to be part of the study were aware of the research goals. The participants also had a right to choose to be part of the study or to decline.

Respect for privacy is at the heart of the conduct of ethical research with human participants Janssen, L., (2022). In this study, the researcher ensured privacy of the participants by securing data in the computer with a password to ensure that other people could access it without the researcher's consent. The researcher additionally grouped the respondents' responses so that each individual participant's score could not be identified in the grouped data. An assurance was given to the participants that any data they provided would not be given out or shared with any other person, but rather it would be used purely for research purpose. Confidentiality ensures that the only time the source of the collected data is revealed to someone is when the researcher obtains the consent of the participant.

Anonymity refers to the process of protecting the identity of specific individuals. In any research, the participants have the right to remain secret. The researcher made sure that the questionnaires and interview guides were not containing names of the participants so as to ensure complete and total secrecy. Consequently, the researcher also promised the interviewees' privacy since a participant who consent to a face-to-face interview cannot hide their identity since their faces were visible but the information was treated confidentially.

The researcher definitely presented himself in attractive appearance and up to the standard behavior before, during and after interacting with the participants in the institutions where the study was be carried out and throughout the study process.

The information gathered from the participants was stored in extreme confidentiality to avoid leakage to illegal people. It was preserved in both hard and soft copies. The investigator did not disclose any gathered material to anyone for any reason. Questionnaires, interview schedules, and CDs were preserved under lock and key throughout the data analysis process and after.

To ensure clean work free from plagiarism, the researcher uploaded his work into TURNITIN software. Before each game, this was done. There was never a spike in the percentage index of more than 15%. All citations were included. If the number was more than 15%, the thesis paper was returned to the editing software for further revisions.

CHAPTER FOUR

RESEARCH FINDINGS AND DISCUSSIONS

4.1 Introduction

In this chapter, data is presented based on the specific objectives of the study starting from the overall questionnaire response rate, followed by the biographic characteristics of the respondents i.e., age in years, marital status, religion, highest level of education attained, occupation, average monthly family income, the number of children and the relationship with the child. This chapter further explains the relationship between the results and the literature review of the independent variables. The chapter also presents results on socio democratic factors, cord care practices, socio-cultural and facility related factors.

4.1 Questionnaire response rate

In this study, 376 questionnaires were administered to sampled caregivers of babies aged 0-6 weeks attending MCH/FP clinic at Mombasa County Referral Hospital. They were required to fill in their responses regarding cord care practices. After completion of data collection, 349 duly filled questionnaires were returned and considered for analysis. This accounted for a 92.8% response rate, surpassing the minimum required sample. As stated by (Kabacoff, R. 2022) data analysis may be performed if at least 50% of the completed questionnaires are accessible, therefore this is very encouraging. This questionnaire response rate choice was made in accordance with the findings of Babbie (2007), who concluded that a fifty percent return rate was sufficient for any data analysis, but that a return rate of seventy percent or more was considered extremely excellent. Because of this, the researcher determined that this was an exceptional return rate that was sufficient to proceed with the investigation.

Data analysis and presentation of findings is aligned to the objectives of the study in the following sub-sections.

4.2 Socio-demographic characteristics of the respondents

The researcher sought to find out the distribution of socio-demographic characteristics of respondents. The results revealed that 156 (44.7%) of respondents were aged 28-37 years followed by 97 (27.8%) of them who were aged 18-27 years. Majority 236 (67.6%) of the respondents were married followed by 76 (21.8%) who were single. Regarding respondents' religion, more than half 201 (57.6%) were Muslims followed by 126 (36.1%) of them who were Christians. Concerning highest level of education attained results showed that 134 (38.4%) had attained secondary level followed by 104 (29.8%) who had attained primary level.

On occupational status, results depicted that 149 (42.7%) of the respondents were self-employed followed by 112 (32.1%) of them who were not employed. Regarding the monthly family income of the respondents, results revealed that slightly above a third 119 (34.1%) earned between Kshs 10,001-20,000 followed by 83 (23.8%) who earned Kshs 10,000 and below. Further results showed that more than a third 124 (35.5%) of the respondents had two children followed by 91 (26.1%) pf the respondents who had 3 children. Finally, on relationship to the child, results revealed that most 334 (95.7%) of the respondents were mothers while the rest 15 (4.3%) were guardians. The results are as presented in table 1.

Table 1: Distribution of socio-demographic characteristics among respondents

Variable	Respondent response	Frequency (N)	Percentage (%)
Age in years	18-27	97	27.8
	28-37	156	44.7
	38-47	67	19.2
	≥ 48	29	8.3
Marital status	Single	76	21.8
	Married	236	67.6
	Divorced/widowed/separated	37	10.6
Religion	Muslim	201	57.6
	Christian	126	36.1
	Others	22	6.3
Highest level of education attained	No formal education	44	12.6
	Primary	104	29.8
	Secondary	134	38.4
	Tertiary	67	19.2
Occupation	Not employed	112	32.1
	Self-employed	149	42.7
	Employed	88	25.2
Average monthly family income in KShs	≤ 10,000	83	23.8
	10,001-20,000	119	34.1
	20,001-30,000	51	14.6
	30,001-40,000	59	16.9
	> 40,000	37	10.6
The number of children	One	82	23.5
	Two	124	35.5
	Three	91	26.1
	≥ Four	52	14.9
Relationship to the child	Parent (mother)	334	95.7
	Guardian	15	4.3

(N=349)

Source: Field Data (2022)

4.2.1 Influence of socio-demographic factors on cord care practice

The researcher sought to determine the influence of socio-demographic factors on cord care practices among the respondents. Results showed that 79 (40.1%) of the respondents who were aged between 18-27 years practiced appropriate cord care. There was a significant statistical association between age of the respondents and cord care practice (p=0.001). On marital status, results showed that majority 153 (77.7%) of the married respondents had practiced appropriate cord care. Marital status was significantly associated with the cord care practice (p=0.004).

Most 92 (60.5%) of the respondents who were Muslims had practiced inappropriate cord care. There was no significant statistical association between religion of the respondents and cord care practice (p=0.501). Concerning highest level of education attained, results showed that slightly more than half 99 (50.3%) of the respondents who had attained secondary level of education had practiced appropriate cord care. There was a statistically significant association between highest level of education attained and cord care practice (p=0.007).

Regarding occupational status, 68 (44.7%) of the respondents who were self-employed had practiced inappropriate cord care. However, occupational status of the respondents was not significantly associated with cord care practice (p=0.079). Less than half 62 (40.8%) of the respondents who earned between Kshs. 10,001-20,000 had practiced inappropriate cord care. There was no significant statistical association between average monthly family income and cord care practice (p=0.061).

Regarding number of children, results showed that 69 (45.4%) of the respondents who had three children had practiced inappropriate cord care. Statistically, number of children was association with cord care practice among the respondents (p=0.013). Further results revealed that majority 191 (97.0%) of the respondents who were

mothers had practiced appropriate cord care. However, there was no significant statistical association between relationship to the child and cord care practice (p=0.804). The results are as presented in table 2 below.

Table 2: Association between socio-demographic factors and cord care practices

Independent variable	Respondent response	Cord care practices		Statistical significance
		Appropriate (N=197)	Inappropriate (N=152)	
Age in years	18-27	79(40.1%)	18(11.8%)	χ^2=16.678
	28-37	81(41.1%)	75(49.3%)	df=3
	38-47	27(13.7%)	40(26.3%)	p=0.001
	≥ 48	10(5.1%)	19(12.5%)	
Marital status	Single	29(14.7%)	47(30.9%)	χ^2=10.485
	Married	153(77.7%)	83(54.6%)	df =2
	Divorced/separated or widowed	15(7.6%)	22(14.5%)	p=0.004
Religion	Muslim	109(55.3%)	92(60.5%)	χ^2=2
	Christian	77(39.1%)	49(32.2%)	df=1.382
	Others	11(5.6%)	11(7.2%)	p=0.501
Highest level of education attained	No formal education	17(8.6%)	27(17.8%)	χ^2=12.018
	Primary	35(17.8%)	69(45.4%)	df=3
	Secondary	99(50.3%)	35(23.0%)	p=0.007
	Tertiary	46(23.4%)	21(13.8%)	
Occupation	Not employed	79(40.1%)	33(21.7%)	χ^2=2.396
	Self-employed	81(41.1%)	68(44.7%)	df=2
	Employed	37(18.8%)	51(33.6%)	p=0.079
Average monthly family income in KShs	≤ 10,000	49(24.9%)	34(22.4%)	χ^2=4.588
	10,001-20,000	57(28.9%)	62(40.8%)	df=4
	20,001-30,000	38(19.3%)	13(8.6%)	p=0.061
	30,001-40,000	34(17.3%)	25(16.4%)	
	> 40,000	19(9.6%)	18(11.8%)	
The number of children	One	63(32.0%)	19(12.5%)	χ^2=23.699
	Two	87(44.2%)	37(24.3%)	df=3
	Three	22(11.2%)	69(45.4%)	p=0.013
	≥ Four	25(12.7%)	27(17.8%)	
Relationship to the child	Parent (mother)	191(97.0%)	143(94.1%)	χ^2=0.062
	Guardian	6(3.0%)	9(5.9%)	df=1 p=0.804

(N=349)

Source: Field Data (2022)

4.2.2 Cord care practices

The study sought to establish the cord care practices among the respondents. Results showed that more than half 197 (56.4%) of the respondents had practiced appropriate cord care while the rest 152 (43.6%) of them had practiced inappropriate cord care. The results are as shown in figure 2.

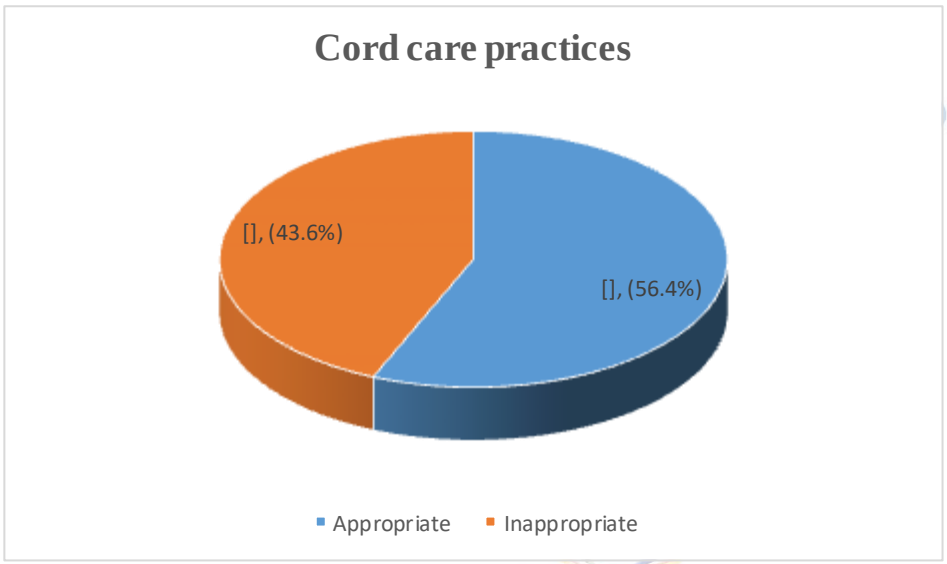


Figure 2: Cord care practices among respondents

4.2.3 Appropriate cord care practices

The study further sought to determine the main cord care practice among those who had practiced it appropriately. Results showed that slightly below half 94 (47.7%) kept it dry, 62 (31.5%) swabbed with spirit and the rest 41 (20.8%) used Chlorhexidine cream. The results are as shown in figure 3 below.

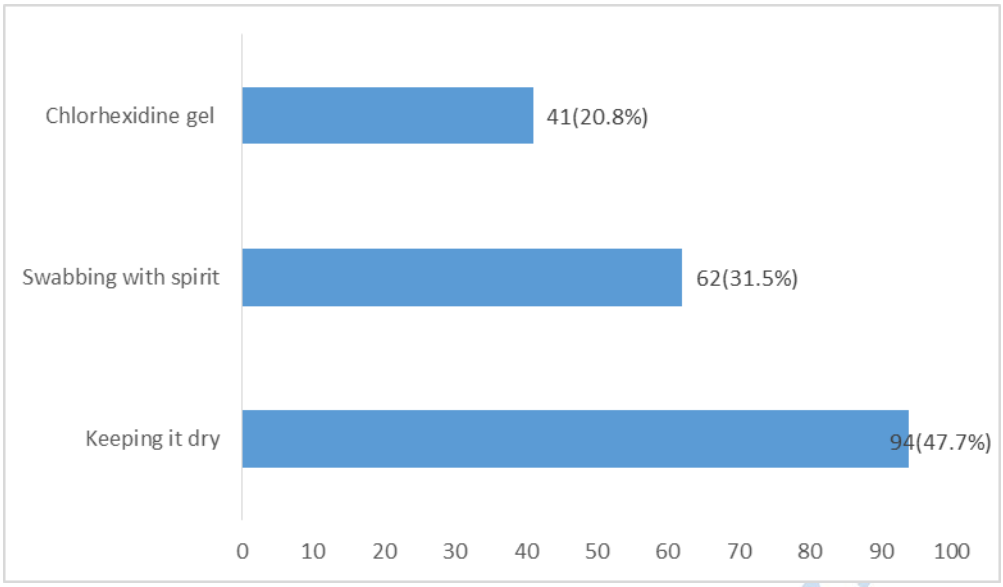


Figure 3: Appropriate cord practices among respondents

4.2.4 Inappropriate cord care practices

Results revealed that among those who had practiced inappropriate cord care, 37(24.3%) applied breast milk followed by 27 (17.8%) who used herbal substances. Results are presented in table 3.

Table 3: Inappropriate cord care practices among respondents

Variable	Respondent response	Frequency (N)	Percentage (%)
Inappropriate cord care practices	Applying breast milk	37	24.3
	Adding black soil	12	7.9
	Washing with warm salty water	25	16.4
	Applying soot	17	11.2
	Applying saliva	23	15.1
	Applying coconut oil	11	7.2
	Herbal substances	27	17.8

(N=152)

Source: Field Data (2022)

4.2.5 Time taken for the cord to heal

The study sought to find out the time the cord took to heal, results showed that majority 261 (74.8%) of the respondents reported that it took between 3 and 4 weeks, 58 (16.6%) took more than 4 weeks and 30 (8.6%) took between 1 and 2 weeks. The results are as shown in figure 4.

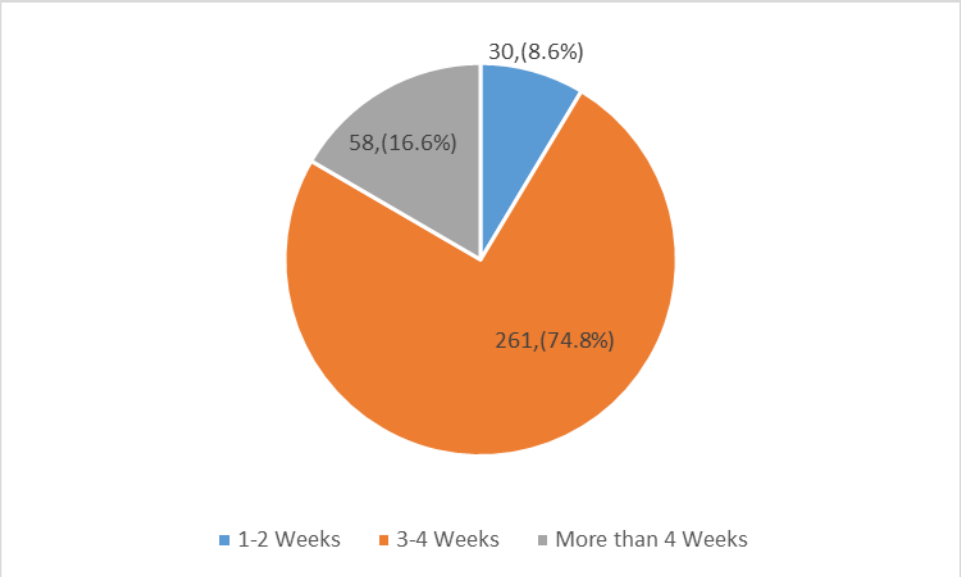


Figure 4: Length of time taken for the cord to heal among babies aged 0-6 weeks

4.2.6 Treatment options available when the cord becomes infected

Results on what should be done in case the cord gets infected, results showed that 216 (61.9%) of respondents reported that they would seek medical care services, 111 (31.8%) would seek services traditional healers and 22 (6.3%) would do nothing. Results were as presented in figure 5.

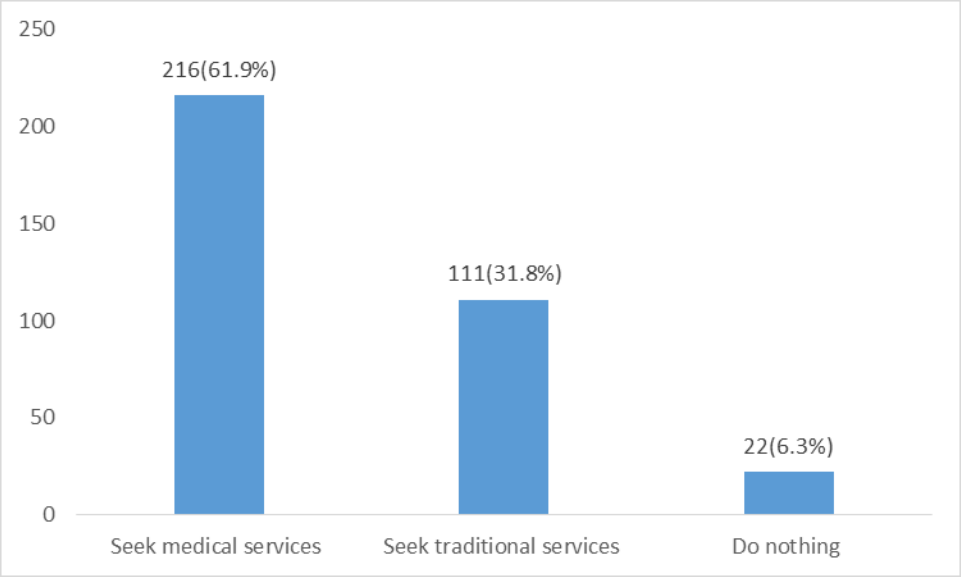


Figure 5: Treatment options available when the cord becomes infected

4.3 Socio-cultural factors

4.3.1 Distribution of socio-cultural factors

The study sought to show distribution of results on socio-cultural factors among the respondents. Results showed that in the community, the respondents' cord care given by mother after delivery was influenced by 96 (27.5%) health care providers followed by 90 (25.8%) by mothers themselves. Majority 238 (68.2%) of the respondents revealed that there were some differences given to cord care depending on the baby's sex while the rest 111 (31.8%) reported no differences.

On whether the respondents believed that applying the father's urine fastened cord care healing, 149 (42.1%) did not agree followed by 112 (32.1%) who agreed that indeed it fastened. Slightly more than half 177 (50.7%) of the respondents felt that the mother should stay away from the child's father until the cord healed followed by 97 (27.8%) who could not tell whether they should stay away or not. More than half 187 (53.6%) of the respondents revealed that the baby should be kept away from visitors until the cord

completely healed while the rest 162 (46.4%) did not see any need of the baby staying away.

Further results showed that more than half 193 (55.3%) of the respondents felt that the cord as a delicate part on the baby and when still there it did not cause tension and anxiety followed by 156 (44.7%) of those who believed that it caused tension and anxiety when still there. The results were as reported in table 4 below.

Table 4: Distribution of socio-cultural factors among respondents

Variable	Respondent response	Frequency (N)	Percentage (%)
In your community, who influences the cord care given by the mother after delivery	Healthcare provider	96	27.5
	Mother-in-law	67	19.2
	Self	90	25.8
	TBA	59	16.9
	Other members	37	10.6
There is a difference in the cord care given depending on the baby's sex	Yes	238	68.2
	No	111	31.8
I believe that applying the urine of the child's father fastens the cord healing	Yes	112	32.1
	No	149	42.7
	Cannot tell	88	25.2
The mother should stay away from the child's father until the cord heals	Yes	177	50.7
	No	75	21.5
	Cannot tell	97	27.8
The baby should be kept away from visitors until the cord completely heals	Yes	187	53.6
	No	162	46.4
The cord is a delicate part on a baby and when still there, it causes tension and anxiety	Yes	156	44.7
	No	193	55.3

(N=349)

Source: Field Data (2022)

4.3.2 Influence of socio-cultural factors on cord care practices

The study sought to determine the influence of socio-cultural factors on cord care practice among the respondents. The results showed that 72 (36.5%) of the respondents whose cord care given by the mother was influenced by health care provider had practiced appropriate cord care. There was a significant statistical association between who influenced the cord care given by the mother after delivery and the cord care practice (p=.001). Most 113 (74.3%) of the respondents who felt that there was a difference in the cord care given based on the baby's sex had practiced inappropriate cord care. There was no significant statistical association between differences in cord care given based on the baby's sex and cord care practice (p=0.2151).

More than half 103 (52.3%) of the respondents who revealed that applying father's urine could not fasten cord healing had practiced appropriate cord care. Statistically, applying urine of the baby's father to fasten cord healing was not significantly associated with cord care practices (p=0.151). Regarding whether mother staying away from the child's father until cord healed, results showed that majority 119 (60.4%) of those who felt they should stay away had practiced appropriate cord care. There was a significant statistical association between whether the child should stay away or not from the child's father until cord heals and cord care practice (p=0.011).

More than half 105(53.3%) of the respondents who felt that the baby should be kept away from the visitors until the cord completely healed had practiced appropriate cord care. There was a significant statistical association between whether or not to keep the child away from visitors until the cord completely healed and cord care practice (p=0.002). Concerning the cord being a delicate organ and when still there, caused tension and anxiety, results showed that majority 125 (63.5%) of those who agreed had practiced appropriate cord care. Further results revealed that there was an association

between cord as a delicate organ causing tension and anxiety when still there and cord care practice (p=0.001). Results are as presented in table 5 below.

Table 5: Association between socio-cultural factors and cord care practices among respondents

Independent variable	Respondent response	Cord care practices		Statistical significance
		Appropriate (N=197)	Inappropriate (N=152)	
In your community, who influences the cord care given by the mother after delivery	Health provider	72(36.5%)	24(15.8%)	χ^2=20.841 df=4 p=0.001
	Mother-in-law	42(21.3%)	25(16.4%)	
	Self	46(23.4%)	44(28.9%)	
	TBA	23(11.7%)	36(23.7%)	
	Other members	14(7.1%)	23(15.1%)	
There is a difference in the cord care given based on the baby's sex	Yes	125(63.5%)	113(74.3%)	χ^2=1.535 df=1 p=0.215
	No	72(36.5%)	39(25.7%)	
Applying urine of the baby's father fastens cord healing	Yes	49(24.9%)	63(41.4%)	χ^2=3.780 df=2 p=0.151
	No	103(52.3%)	46(30.3%)	
	Cannot tell	45(22.8%)	43(28.3%)	
The mother should stay away from the child's father until the cord heals	Yes	119(60.4%)	56(36.8%)	χ^2=9.082 df=2 p=0.011
	No	35(17.8%)	42(27.7%)	
	Cannot tell	43(21.8%)	54(35.5%)	
The baby should be kept away from visitors until the cord completely heals	Yes	105(53.3%)	83(54.6%)	χ^2=9.929 df=1 p=0.002
	No	92(46.7%)	69(45.4%)	
The cord is a delicate organ and when still there, causes tension and anxiety	Yes	125(63.5%)	31(20.4%)	χ^2=16.919 df=1 p=0.001
	No	72(36.5%)	121(79.6%)	

(N=349)

Source: Field Data (2022)

4.4 Facility related factors

4.4.1 Responses on facility related factors

The study findings sough to show the distribution of facility related factors among the respondents. Results showed that majority 238 (71.3%) of the respondents had attended antenatal care (ANC) while the rest 96 (28.7%) had not attended. More than half 126 (52.9%) of the respondents who had attended ANC were taught on cord care practice while the rest 112 (47.1%) reported to have not been taught on the same. Most 233 (69.8%) of the respondents who were mothers to the child had delivered at the health facility followed by 79 (23.7%) who had delivered at home. More than half 130 (55.8%) of the respondents who had delivered at the facility had not been given any items for cord care while the rest 103 (44.2%) had been given.

Regarding the items received, majority 62 (60.2%) of them had been given alcohol swabs while the rest 41 (39.8%) received Chlorhexidine gel. Most 215 (64.4%) of the respondents had been provided with adequate information on cord care while the rest 119 (35.6%) had not been provide with adequate information. Concerning follow up on cord care practice before 6 weeks, results showed that 208 (59.6%) of respondents were not followed up while the rest 141 (40.4%) were followed up. The results are as presented in table 6.

Table 6: Distribution of facility related factors among respondents

Independent variable	Respondent response	Frequency (N)	Percentage (%)
Attendance of ANC if a mother	Yes	238	71.3
	No	96	28.7
	Total (N)	**334**	**100.0**
Taught on cord care practices if attended ANC	Yes	126	52.9
	No	112	47.1
	Total (N)	**238**	**100.0**
Place of delivery if a mother	Health facility	233	69.8
	Home	79	23.7
	On the way	22	6.6
	Total (N)	**334**	**100.0**
Given items for cord care by the hospital after delivery	Yes	103	44.2
	No	130	55.8
	Total (N)	**233**	**100.0**
Items given for cord care	Chlorhexidine gel	41	39.8
	Spirit/alcohol swab	62	60.2
	Total (N)	**103**	**100.0**
Provision of adequate information on cord care if a mother	Yes	215	64.4
	No	119	35.6
	Total (N)	**334**	**100.0**
Follow-up on cord care practice before 6 weeks	Yes	141	40.4
	No	208	59.6
	Total (N)	**349**	**100.0**

(N=349)

Source: Field Data (2022)

4.4.2 Facility related factors associated with cord care practices

The study sought to determine the influence of facility related factors on cord care practice. Results revealed that majority 143 (75.7%) of the respondents who had attended ANC had practiced appropriate cord care. There was a significant statistical

association between ANC attendance and cord care practice p=0.013. Most 84(63.2%) of the respondents who were taught on cord care practice when they attended ANC practiced appropriate cord care. Statistically, being taught on cord care practice during ANC attendance influenced cord care practice (p=0.001).

Majority 114 (78.6%) of those respondents who delivered at the health facility had practiced inappropriate cord care. There was no statistically significant association between place of delivery and cord care practice (p=0.055). More than half 77 (56.6%) of the respondents who had not been given any item for cord care from the hospital after delivery had practiced appropriate cord care. However, there was a significant statistical association between being given items for cord care from the hospital after delivery and cord care practice (p=0.004). Results showed that most 43 (60.6%) of the respondents who received spirit/alcohol swab had practiced appropriate cord care. Statistically, there was no association between items received for cord care and cord care practice among the respondents (p=0.583).

Majority 131 (69.3%) of those mothers who felt that they were provided with adequate information on cord care had practiced appropriate cord care. Provision of adequate information on cord care if a mother was significantly associated with cord care practice (p=0.018). Further results showed that 121 (61.4%) of the respondents who did not get any follow-up on cord care practice before six weeks had practiced appropriate cord care. However, there was no significant statistical association between being followed up on cord care practice before six weeks and cord care practice (p=0.103). The results are as presented in table 7 below.

Table 7: Facility related factors associated with cord care practices among respondents

Independent variable	Respondent response	Cord care practices		Statistical significance
		Appropriate	**Inappropriate**	
Attendance of ANC if a mother	Yes	143(75.7%)	95(65.5%)	χ^2=9.167
	No	46(24.3%)	50(34.5%)	df=1
	Total	**N=189**	**N=145**	p=0.013
Taught on cord care practices if attended ANC	Yes	84(63.2%)	42(40.0%)	χ^2=12.305
	No	49(36.8%)	63(60.0%)	df=1
	Total	**N=133**	**N=105**	p=0.001
Place of delivery if a mother	Health facility	119(63.0%)	114(78.6%)	χ^2=3.695
	Home	56(29.6%)	23(15.9%)	df=1
	On the way	14(7.4%)	8(5.5%)	p=0.055
	Total	**N=189**	**N=145**	
Given items for cord care by the hospital after delivery	Yes	59(43.4%)	44(45.4%)	χ^2=8.477
	No	77(56.6%)	53(54.6%)	df=1
	Total	**N=136**	**N=97**	p=0.004
Items given for cord care	Chlorhexidine gel	28(39.4%)	13(40.6%)	χ^2=0.301
				df=1
	Spirit/alcohol swab	43(60.6%)	19(59.4%)	p=0.583
	Total	**N=71**	**N=32**	
Provision of adequate information on cord care if a mother	Yes	131(69.3%)	84(57.9%)	χ^2=8.037
	No	58(30.7%)	61(42.1%)	df=2
	Total (N)	**N=189**	**N=145**	p=0.018
Follow-up on cord care practice before 6 weeks	Yes	76(38.6%)	65(42.8%)	χ^2=2.658
	No	121(61.4%)	87(57.2%)	df=1
	Total (N)	**N=197**	**N=152**	p=0.103

(N=349)

Source: Field Data (2022)

4.5 Discussions of Findings

4.5.1 Socio-demographic factors

The study sought to determine socio-demographic factors influencing cord care practices among respondents. The results revealed about a half of the care givers were aged 28-37 years. This is a prime age for women to get children and would be probably in stable relationships and marriages. These results were contrary to a study conducted in Morogoro Municipality in Tanzania on knowledge and practices on cord care among postnatal mothers attending public health facilities which showed that majority were aged 20-29 years (Ndomondo et al., 2022). This finding was also inconsistent with another study done in Nigeria on awareness and practices on cord care showed that majority of respondents were aged 25-29 years (Bassi et al., 2020).

The results further reported a significant statistical association between age and cord care practices. Those who were of younger ages were more likely to practice appropriate cord care. According to Ndomondo and colleagues noted that age was not significantly associated with cord care practices (Ndomondo et al., 2022). Similar results were reported by a study from Ghana which showed that age was a significant factor influencing cord care practices among mothers (Owusu, L. B., 2023).

Majority of the respondents were married. This is because almost all respondents were within the reproductive age group thus sexually active and settled in marriages or stable relationships. The results concur with a study done in eastern Ethiopia on determinants of safe cord care practices which reported that most of the respondents were married (Eyeberu et al., 2022). In another study done among mothers in a rural community of Sokoto State in Nigeria on cord care practices, it was noted that majority of them were married (Owusu, L. B.,2023) Marital status of the respondents was significantly associated with cord care practices. This could be due to receiving support from their

respective spouses resulting to appropriate cord practices. This finding agrees with a study from Nepal on maternal and neonatal healthcare which showed that being married was linked to good cord care practice (Acharya & Paudel, 2020). Findings from a Ghanaian research revealed that marital status did not affect cord care practices among postnatal attendees in selected health facilities (Ayete-Nyampong & Udofia, 2020).

Regarding respondents' religion, more than average of them were Muslims. This is because most of the inhabitants of Mombasa in general practice Islam with Muslim being the most dominant religion. The results were contrary to a study which was conducted on umbilical cord practices in south Asia where Hinduism was the common religion (Mallick et al., 2019). A study conducted in south east Nigeria revealed that Christianity was the main religion practiced (Asiegbu et al., 2019). There was no significant statistical association between religion of the respondents and cord care practice. This is may be religion does not teach about cord care as the matter is left to healthcare providers and older women in society. This agrees with Mallick et al (2019) who found out that religion did not affect cord practices. The results were inconsistent with findings on essential neonatal practices in refugee settlements in West Nile, Uganda, showed that Protestants were 2 times more likely to practice safe cord care compared to other religions (Komakech et al., 2020).

Concerning highest level of education attained, the results showed that more than a third of the respondents had finalized their secondary school education. This is contrary to a study done in a study conducted in Morogoro Municipality in Tanzania on knowledge and practices on cord care among postnatal mothers attending public health facilities which showed that majority of them attained a primary level of education (Ndomondo et al., 2022). In another study conducted in Nigeria among women of

reproductive age showed that majority of the respondents had primary or below levels of education (Bassi et al., 2020). There was a statistically significant association between level of education attained and cord care practice. In fact, practice of appropriate cord care increased with increase in highest educational level attained. This is because education empowers women with information on maternal and child health thus significantly affecting cord care practices. This finding is consistent with a study from Nepal on maternal and neonatal healthcare which revealed that the level of education attained was significantly associated with cord care practices (Acharya & Paudel, 2020). In Uganda, education was a significant factor that influenced practice of essential cord care among refugees (Komakech et al., 2020).

On occupational status, the results depicted that less than half of the respondents were self-employed. This is supported by the fact that the study was done during a time when people lost their jobs due to the effect of COVID-19 coupled with hard economic times when employment opportunities have become scarce forcing most of them to resort to looking for alternative ways of survival. Findings from a study conducted on neonatal care practice revealed that agriculture was the major occupation among most of the respondents (Singh et al., 2019). Contrary research findings were reported by a study on essential neonatal care practice in Chencha District of southern Ethiopia which depicted that majority of the interviewees were housewives (Komakech et al., 2020). However, occupational status of the respondents was not significantly associated with cord care practice. This is probably because caregivers of babies may not incur any cost to ensure their cords are managed appropriately. The findings were inconsistent with a study done on umbilical cord practice among mothers of neonates in Nigeria where it was noted that occupation was significantly associated with appropriate cord care practices (Mohammad et al., 2021).

The results revealed that slightly above a third of caregivers earned between Kenya shillings 10,001-20,000. This means that most of them were low-income earners given that most of them were self-employed probably earning meagre income. The results were similar to a study done in Bangladesh among postnatal mothers which showed that majority of them had an average monthly family income of less than 5,000 Indian rupees (Majumder et al., 2018). There was a no significant statistical association between average monthly family income and cord care practice among respondents. This may be because there are no costs associated with appropriate cord care practices as the items for cord care are given free of charge from facilities or simply be kept dry. The results were contrary to a systematic review in lower income countries where it was noted that income influenced cord care practices among mothers (Bazzano et al., 2019).

Further results showed that more than a third of the respondents had two children. This may be explained by the fact that the study was done in an urban setting where the living standards are high. Therefore, family tends to give birth to children whom they can cater for with their meager incomes. The results differed with a study conducted by Bassi et al (2020) in Nigeria who reported that majority of the women of reproductive age had four or more children. According to another study conducted in Chencha District in Southern Ethiopia, it was revealed that majority of the mothers had between 2-4 children (Bassi et al (2020). Statistically, the number of children was associated with cord care practice among caregivers as most of those who had three children had practiced inappropriate cord care. This is probably because those with more children believe that they have experience in childcare and sometimes they may use crude materials they used in their previous children. The results were similar to a study done

by Kipkoech (2021), which revealed that number of children of the mothers influenced cord care practice given.

On relationship to the child, the results revealed that almost all respondents were mothers to the babies 0-6 weeks. This is because they are the main sources of care given to babies at this critical period to create better bonding to their young ones as well as taking them to clinics. Further results showed that majority of those who were mothers had practiced appropriate cord care. However, there was no significant statistical association between relationship to the child and cord care practice. This is probably because almost all respondents were mothers thus insignificant in influencing cord care given to their young ones.

The study sought to establish cord care practices among caregivers in Mombasa County Referral Hospital. The results showed slightly more than average (56.3%) of the care givers had practiced appropriate cord care. However, a significant number of caregivers inappropriately practice cord care. Poor cord care practices may cause infections such as sepsis amounting to significant health effects among neonates. The results were contrary to study findings from Ghana which showed 36.8% of mothers had practiced safe cord care (Bassi et al (2020).). In another study done among mothers in a rural community of Sokoto State in Nigeria on cord care practices, it was noted that only 40.7% of mothers practiced appropriate cord care (Kipkoech (2021),). Research findings from Chencha District of southern Ethiopia on essential neonatal care practice reported that 52.9% of interviewees practiced safe cord care (Bassi et al 2020). The slightly higher rates of appropriate cord care practices is as a result of the current study is because it was done in a hospital setting compared to other studies which have been carried out in rural areas.

The further probed to know the main appropriate cord care practice among caregivers. The results indicated that slightly less than half kept the cord it dry until it completely healed. This means that they did not mostly prefer use of Chlorhexidine or swabbing it alcohol/spirit given to them at the facility. Among those who had practiced inappropriate cord care, 37(24.3%) applied breast milk followed by 27 (17.8%) who used herbal substances. The study further sought to determine the main cord care practice among those who had practiced it appropriately. Results showed that slightly below half 94 (47.7%) kept it dry, 62 (31.5%) swabbed with spirit and the rest 41 (20.8%) used Chlorhexidine cream. The study further sought to determine the main cord care practice among those who had practiced it appropriately. Results showed that slightly below half 94 (47.7%) kept it dry, 62 (31.5%) swabbed with spirit and the rest 41 (20.8%) used Chlorhexidine cream.

4.5.2 Socio-cultural factors

The researcher sought to find out the social cultural determinants for cord care in Mombasa County referral hospital. The results revealed that 36.5% of respondents who interacted with health care professionals and were educated on cord care practiced appropriate cord care while 15% of them failed to comply with health workers instructions for appropriate cord care practices. This study is contrary to another study done in Benin which showed that only 5.8% of all the mothers who practiced appropriate or inappropriate care were influenced by Mother in-laws. (Jan 2020, OJOG). 23.4% of the mothers had liberty to decide and had appropriate cord care practice while 28.95 of those who decided on their own practiced inappropriately. The study shows that 23.7% were influenced by traditional birth attendants and they practiced inappropriate cord care. Only 11.7% of those influenced by Traditional birth attendants practiced appropriate cord care. The study concurs with a study done in

Nepal where traditional birth attendants used the good luck coin to cut the cord and this mostly was found to be unhygienic and most mothers who were attended by TBAs practiced inappropriate cord care (WHO 2020). This basically could be associated with traditional practices being given considerations and more value to conventional methods of care. The study also showed that other family members had 7.1% influence towards appropriate cord care and a 15.1% influence towards inappropriate cord care practice. The study further revealed that the gender of the baby largely determines the kind of cord care to be practiced 63% of the respondents practicing appropriate cord care based on Gender while 36.5% of those who practiced appropriate cord care never cared about baby's gender.74.3% of those who baby's sex determined how they offer care had inappropriate practice while 25.7% practiced inappropriately and gender of the baby never determined their choice of cord care practice. Cultural or traditional conventions, as well as gender concerns, may play a role in shaping mothers' perspectives about their daughters. This trend might indicate that the opposite sex receives more favorable treatment and higher-standard umbilical cord care. A smaller percentage was found to believe that applying the fathers Urine hastens the healing of the cord while the majority of the respondents found that irrelevant. Of those who disagreed with the use of the father's urine, 52.3% practiced appropriate cord care while 30.3 % practiced inappropriate cord care. Urea, which is abundant in urine, acts as a natural exfoliator by loosening and peeling off the skin's outermost layer. As stated by Dr. Gohara (2019),

Majority of the respondents agreed with the idea that the mothers should stay away from the fathers after delivery to hasten healing of the cord with 119 of the respondents who agreed practicing appropriate cord care while 56 of those who agreed practiced inappropriate cord care. This concurs with a study done in Uganda, where new borns

were perceived to be vulnerable to the environment and needed seclusion together with the mother though this practice may be changing. According (Bassi, 2020) the father and the mother need to support each other in taking care of the new born baby. This study agreed with the finding of the study that the newborn baby should be kept away from visitors to prevent communicable diseases and lessen chances of infection due to transmission of normal flora from healthy people to the vulnerable baby. A greater percentage of the respondents agreed to this practice and saw it as a beneficial practice. A few of the respondents never saw the significance of the cord stamp being given such a great care to ensure quick healing while a greater number of 63.5% practiced appropriate cord care practice. The cord remains delicate in neonatal care because infection of the area around the umbilical cord stump is the main concern.

4.5.3 Facility Related Factors

The Study showed that 238 respondents were the mothers and had attended ANC clinic and 52.9% of them received health education on cord care. The results revealed that 36.5% of respondents who interacted with health care professionals and were educated on cord care practiced appropriate cord care while 15% of them failed to comply with health Worker's instructions for appropriate cord care practices. Of the total respondents 28.7% never attended ANC clinic and among them 34.5% practiced inappropriate cord care. 63% of the interviewed mothers who delivered in a health facility practiced appropriate cord care while 29.65 of those who delivered at home practiced appropriate cord care. Current WHO recommendations for developing countries have prioritized hygienic cord care which involves use of sterile instruments to cut the cord and appropriate cord care hygiene. (WHO, 2020). Clean and dry cord care is recommended for newborns delivered in health facilities which did not concur with the study findings of this research. Despite the recommendations a majority of

mothers still used inappropriate methods of care. This is higher compared to a study done in Ethiopia which showed that only a very smaller percentage of mothers who attended ANC and delivered in hospital practiced inappropriate cord care. From the study 69.3% of the mothers who were able to give correct information on cord care practiced appropriate cord care. A greater percentage of mothers who couldn't give cord care information correctly practiced inappropriate cord care. This shows that there is a knowledge gap on cord care practices which was a common finding in a study done in Nairobi Kenya which showed that a greater percentage of women understood cord care practices with variation between the educated and non-educated, the young versus the experienced. The study further showed that 61.4.% of the women were not followed up on cord care before six weeks and neither did they seek medical attention with 57.2% of the practicing inappropriate cord care. If you give birth at home in an area with a high rate of neonatal death, the World Health Organization advises you to keep the umbilical cord dry and clean during the first week.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter covers the summary of findings, conclusions and recommendations. The chapter's organization is informed by the objectives of this study. It includes socio-demographic factors, socio-cultural and facility related factors associated with cord care practices among caregivers of babies aged 0-6 weeks in Mombasa County Referral Hospital.

5.2 Summary of Findings

5.2.1 Socio-demographic factors

The study sought to determine socio-demographic factors influencing cord care practices among respondents. The results revealed about a half of the care givers were aged 28-37 years. This is a prime age for women to get children and would be probably in stable relationships and marriages.

The results further reported a significant statistical association between age and cord care practices. Those who were of younger ages were more likely to practice appropriate cord care. This may be explained by the fact that they may be new in motherhood thus keener with their babies compared to their older counterparts who are more experienced in motherhood.

Majority of the respondents were married. This is because almost all respondents were within the reproductive age group thus sexually active and settled in marriages or stable relationships.

5.2.2 Socio-cultural factors

The researcher sought to find out the social cultural determinants for cord care in Mombasa County referral hospital. The results revealed that 36.5% of respondents who interacted with health care professionals and were educated on cord care practiced appropriate cord care while 15% of them failed to comply with health workers instructions for appropriate cord care practices. Major reasons for such a difference could be previous experience of cord care while they cared for other babies and peer influence that may have discredited what the health workers health educated them. A greater percentage of those who followed Mother In-laws directives on cord care practiced appropriate cord care while only 15% of the respondents advised by mother in-laws practiced inappropriate cord care.

5.2.3 Facility Related Factors

The Study showed that 238 respondents were the mothers and had attended ANC clinic and 52.9% of them received health education on cord care. The results revealed that 36.5% of respondents who interacted with health care professionals and were educated on cord care practiced appropriate cord care while 15% of them failed to comply with health workers instructions for appropriate cord care practices. Of the total respondents 28.7% never attended ANC clinic and among them 34.5% practiced inappropriate cord care. 63% of the interviewed mothers who delivered in a health facility practiced appropriate cord care while 29.65 of those who delivered at home practiced appropriate cord care. Despite delivering in the health facility, ¾ of the mothers practiced inappropriate cord care practice the reason for elaborate health education on cord care and at community level because same case applies to all mothers who had home deliveries. Among all those who delivered in the hospital only 43.4% who received

items for cord care from the facility.56.6% never received any items and among them all 54.6% practiced inappropriate cord care.

5.3 Conclusion

The study concluded that social demographic factors were associated with both appropriate and inappropriate cord care practices. There was a significant statistical association between age of the respondents and cord care practice (p=0.001). Age was one of the social demographic factors influencing significantly practice on cord care where a significant number of the respondents were aged between 26-35 years were shown to practice appropriate cord care practice. Marital status was significantly associated with the cord care practice (p=0.004). There was no significant statistical association between religion of the respondents and cord care practice (p=0.501.

There was no significant statistical association between differences in cord care given based on the baby's sex and cord care practice (p=0.2151). Despite respondents showing different marriage status they used appropriate cord care practice which included a variety of cleansing agents and techniques. Many substances were reportedly used as cord applications. Christianity, Muslim and Hinduism were the three main forms of faith in coast province and they were in positive support of the appropriate cord care practice. There was a statistically significant association between highest level of education attained and cord care practice (p=0.007).

Generally, religion had no significant influence on cord care practice. The findings concluded that most of the respondents were in all the three economic classes which included low, medium and high. There was no significant statistical association between average monthly family income and cord care practice (p=0.061).

The study concluded social cultural was associated with in appropriate cord care practice. Some applied traditional methods which were based on use of substances including applying of breast milk, Fathers urine, coconut oil, baby powder, firewood ash, keeping it dry, use off soap and water. Statistically, applying urine of the baby's father to fasten cord healing was not significantly associated with cord care practices (p=0.151). Other traditional practices which included the father staying away from the mother and the baby till the cord heal. Keeping visitors away contributed positively towards appropriate cord care practice There was a significant statistical association between whether the child should stay away or not from the child's father until cord heals and cord care practice (p=0.011).

There was a significant statistical association between whether or not to keep the child away from visitors until the cord completely healed and cord care practice (p=0.002). When social cultural methods were not effective the mothers were forced to seek appropriate medical intervention in the hospitals where nurses and doctors make intervention by providing antibiotics to manage the condition. The mother-in-law does also play a key role in management of the grandchild cord where they provide guidance to the daughter in-law. Depending with the community traditions on health vary from one community with another. There was a significant statistical association between who influenced the cord care given by the mother after delivery and the cord care practice (p=.001). The findings concluded that most of the respondents who gave birth in the hospital or who had skilled birth practiced appropriate cord care. However, there was no significant statistical association between relationship to the child and cord care practice (p=0.804). This was boosted by the health education given in the health facilities. Most Respondents who were mothers and with previous experience practiced appropriate cord care despite the place of delivery. This showed the significant role

played by the health facilities in advocating for appropriate cord care practice. Further results revealed that there was an association between cord as a delicate organ causing tension and anxiety among care givers who practiced cord care. (p=0.001).

After delivery all the respondents were taught appropriate cord care practices despite some sticking to the traditional practices. Some of the activities taught were, applying surgical spirit, Chlorhexidine and also keeping the cord dry. Majority of the mothers were able to follow appropriate advice given by the nurses at the hospital. The respondents felt they were given adequate information on the cord care.

The study concluded that respondents would take some actions if they found the cord was infected. This included taking the child to the hospital, inform their parents, friends and taking the child to old women. Finally, most of the respondents feared that sticking to conventional methods of care like application of Chlorhexidine prolonged the healing period because it kept the cord wet and most of them avoided its use despite nurses insisting. There was a significant statistical association between ANC attendance and cord care practice p=0.013. Statistically, being taught on cord care practice during ANC attendance influenced cord care practice (p=0.00. There was no statistically significant association between place of delivery and cord care practice (p=0.055)

I reject the null hypothesis and conclude that social demographic, socio-cultural and facility related factors significantly influence cord care practice among care givers of babies 0-6 weeks.

5.4 Recommendations

The study recommends that young mothers should me mentored well from the hospital and the older mothers so as to provide appropriate cord care. Despite respondent showing different marriage status they used varied practices and therefore, the study

recommends need for a universal standardized policy in all health facilities to avoid disparities in care. The findings recommend that respondents should continue attending ANC during pregnancy in hospital of their choice to get more information on how to take care of the cord appropriately. The study also recommends use of health workers such as nurses and midwives to educate individuals, families and communities on the appropriate cord care practices.

Lastly community education to enlighten all players in care giving of neonates either through community barazas to sensitize the members on dangers associated with some of the cultural believes and practices regarding cord care as well as inform on the recommended ways of cord care by the ministry of health.

5.5 Recommendations for Further Research

This study focused on determinants of cord care practices among caregivers of babies' 0-6weeks at the Mombasa County Referral Hospital. There is need to research on limitations facing cord care practices among caregivers. Therefore, the study needs to be expanded to other regions in the country so as to have more elaborated information on different communities practice cord care for a universal intervention in order to help prevent neonatal morbidity and mortality related to cord related sepsis.

REFERENCES

Acharya, S. R., & Poudel, S. (2020). A research from Nepal looked at variables related to maternal and neonatal health care practices. *Int J Health Sci Res, 10(2), 186-192.*

Asiegbu, U. V., Ezeanosike, O. B., & Onyire, B. N. (2019). The Factors That Influence How Mothers in Abakaliki, Ebonyi State, South East Nigeria, Treat Their Baby's Umbilical Cords. *Open Journal of Preventive Medicine, 9(05), 43.*

Ayete-Nyampong, J., & Udofia, E. A. (2020). *Evaluation of Acquaintance with and Performance in Neonate Care Skills* in La Dade Kotopon Municipality, Ghana. *Plos one, 15(8), e0237820.*

Bassi, A. P., Bulus, F. K., Dalyop, F. K., ... & Habila, L. (2020). *Women of Childbearing Age in a Chosen Village in Jos South LGA, Plateau State, Nigeria, and Their Knowledge and Usage of Chlorhexidine for Neonatal Cord Care*. Journal of Epidemiological Society of Nigeria, *3(1), 53-61.*

Bazzano, A. N., Eragoda, S., Kaji, A., & Horlick, R. (2019). A review of qualitative research on parents' and families' perceptions on providing infant care at home in low-resource settings. *BMJ open, 9(4), e025471.*

Eyeberu, A., Birhanu, A., Alemu, A., & Dessie, Y. (2022). Postpartum Women's Practices and Attitudes Towards Safe Cord Care and Skin-to-Skin Contact at Public Hospitals in Eastern Ethiopia. *Frontiers in Pediatrics, 10.*

Getaneh/ FB, Sebsbie G, Adimasu M, (2022). *Neonatal asphyxia: survival and risk factors among infants hospitalized to the newborn critical care units in Addis Ababa, Ethiopia's state hospitals*, 2021: a retrospective follow-up study. *BMC Pediatric*.; 22(1):262. Published 2022 May 10. Doi:10.1186/s12887-022

.

Hafizhah, D., & Istyadji, M. (2022). The Validity and Practicalily of Prezi Learning Media on the *Role of Soil and Soil Organisms for Life Sustainability for Junior High School* Students. *Jurnal Penelitian Pendidikan IPA*, *8*(2), 481-488.

Journal of Biosciences and Medicines, (2016, January), 4, 27-36 Published Online in Scires. http://www.scirp.org/journal/jbm.http://dx.doi.org/10.4236/jbm.2.\

Janssen, L., Schouten, A. P., & Croes, E. A. (2022). Influencer advertising on Instagram: product-influencer fit and number of followers affect advertising outcomes and influencer evaluations via credibility and identification. *International journal of advertising*, *41*(1), 101-127.

Kaoje, A. U., Okafoagu, N. C., Raji, M. O., Raji, Y. H., Nasir, M. A., Bello, M., & Ango, U. M. (2018). Home delivery, umbilical cord care practices and postnatal care utilization among mothers in a rural community of Sokoto State. *Journal of Community Medicine and Primary Health Care, 30(2), 36-46.*

Karumbi J., M. M. (2013). *Topical umbilical cord care for prevention of infection and neonatal Mortality*, 32: 78-83.

Kinanu L. (2013). *Assessment of determinants of umbilical cord infection among newborns.* Nairobi: Pumwani maternity hospital.

Kipkoech, M. J. (2021). *Newborn cord care practices and knowledge among postnatal mothers at Moi Teaching and Referral Hospital, Eldoret, Kenya* (Doctoral dissertation, Moi University).

Komakech, H., Lubogo, D., Nabiwemba, E., & Orach, C. G. (2020). *Essential newborn care practices and determinants amongst mothers of infants aged 0—6 months in refugee settlements,* Adjumani district, west Nile, Uganda. *Plos one, 15(4), e0231970.*

Kabacoff, R. (2022). *R in action: data analysis and graphics with R and Tidyverse*. Simon and Schuster

Limbu, Y. B., Gautam, R. K., & Pham, L. (2022). The health belief model applied to COVID-19 vaccine hesitancy: A systematic review. *Vaccines*, *10*(6), 973..

Majumder, S., Najnin, Z., Ahmed, S., & Bhuiyan, S. U. (2018). Knowledge and attitude of essential newborn care among postnatal mothers in Bangladesh. *Journal of Health Research, 32(6), 440-448.*

Mallick, L., Yourkavitch, J., & Allen, C. (2019). Trends, determinants, and newborn mortality related to thermal care and umbilical cord care practices in South Asia. *BMC pediatrics, 19(1), 1-16.*

Mersha, A., Assefa, N., Teji, K., Shibiru, S., Darghawth, R., & Bante, A. (2018). Essential newborn care practice and its predictors among mother who delivered within the past six months in Chencha District, Southern Ethiopia, 2017. *PloS one, 13(12), e0208984.*

Mohammad, A. U., Omeneke, I. K., Kehinde, I. P., Omoshalewa, U. M., Fatima, J. B., & Ilah10, G. B. (2021). *Determinants of Umbilical Cord Care Practices among Mothers of Neonates Admitted into Special Care Baby Unit of Usmanu Dan Fodiyo University Teaching Hospital.* Sokoto, Nigeria.

Ndomondo, M., Outwater, A., & Mdegela, S. (2022). *Assessment of knowledge and practices on cord Care among postnatal mothers' attending public health facilities* in Morogoro municipality. Tanzania *Journal of Health Research, 23(1), 1-10.*

Owusu, L. B., Zakaria, A. F. S., Agyapong, S., Akokre, R., & Adebanji, A. O. (2023). Care of the newborn's umbilical cord: The perspectives of mothers in a developing country. *Journal of Neonatal Nursing*.

Saaka, M., Ali, F., & Vuu, F. (2018). Prevalence and determinants of essential newborn care practices in the Lawra District of Ghana. *BMC pediatrics, 18(1), 1-12.* Sazawal S, Dhingra U,Ali SM et al, *Efficacy of Chlorhexidine application to umbilical cord for the first 7 days of life on neonatal mortality and Omphalitis in Pemba, Tanzania: a community-based randomized controlled trial*. LancetGlobHealth2016. Published online Sept 29.http://dx.doi.org/10.1016/S2214-109X(16)30223-6

Sanitation, M.O (2009). National guidelines on Essential Newborn care. *Clinical guidelines 1 & 11.* Nairobi, Kenya: Ministry of health Kenya.

Sazawal S, Dhingra U, Ali SM et al, Efficacy of Chlorhexidine application to umbilical cord for the first 7 days of life on neonatal mortality and Omphalitis in Pemba, Tanzania: a community-based randomized controlled trial. LancetGlobHealth2016. Published online Sept 29.http://dx.doi.org/10.1016/S2214-109X(16)30223-6

Singh, D. R., Harvey, C. M., Bohara, P., Nath, D., Singh, S., Szabo, S., & Karki, K. (2019). Factors associated with newborn care knowledge and practices in the upper Himalayas. *PloSone, 14(9), e0222582.*

Soofi S., C. S. (2012). *Topical application of Chlorhexidine to neonatal umbilical cords for prevention of omphalitis and neonatal mortality.* Rural Pakistan: *Lancet, 379: 1029-1036.*

Dessalegn, N., Dagnaw, Y., Seid, K., & Wolde, A. (2022). Umbilical cord care practices and associated factor among mothers of neonates visiting mizan-tepi university teaching hospital southwest Ethiopia 2021. *Pediatric Health, Medicine and Therapeutics*, 227-234.

Recker, J. C., Lukyanenko, R., Jabbari Sabegh, M., Samuel, B., & Castellanos, A. (2021). From representation to mediation: a new agenda for conceptual modeling research in a digital world. *MIS Quarterly: Management Information Systems*, *45*(1), 269-300.

Hutchinson, P., Aisiri, A., Anaba, U., Omoluabi, E., Akinyemi, A., Ozoadibe, U. C., & Abegunde, D. (2023). Behavioral sentinel surveillance survey in Nigeria: Endline technical report.

Van Looy, A. (2021). A quantitative and qualitative study of the link between business process management and digital innovation. *Information & Management*, *58*(2), 103413.

Riley, R. D., Collins, G. S., Ensor, J., Archer, L., Booth, S., Mozumder, S. I., ... & Snell, K. I. (2022). Minimum sample size calculations for external validation of a clinical prediction model with a time-to-event outcome. *Statistics in medicine*, *41*(7), 1280-1295.

Kourlaba, G., Kourkouni, E., Maistreli, S., Tsopela, C. G., Molocha, N. M., Triantafyllou, C., ... & Zaoutis, T. E. (2021). Willingness of Greek general population to get a COVID-19 vaccine. *Global health research and policy*, *6*(1), 1-10.

Kashyap, S., Spielman, A. F., Ramnarayan, N., Sahana, S. D., Pant, R., Kaur, B., ... & Murthy, S. (2022). Impact of family-centred postnatal training on maternal and neonatal health and care practices in district hospitals in two states in India: a pre–post study. *BMJ Open Quality*, *11*(Suppl 1), e001462.

APPENDICES

Appendix I: Consent Form

English Version

This is a study seeking to find out the determinants of cord care practices among care givers of babies 0-6 weeks attending MCH/FP clinic at the Mombasa County referral hospital. The care givers are very key since they are directly involved in the care of the neonates. There are no risks whatsoever associated with the participation in this study. Taking part in the study will be an added advantage to the care giver for she will have participated in an important exercise whose findings will be used to influence positively modalities of cord care in the facility. One has a right to opt out from the study at will at any stage of data collection. Your full participation will be highly appreciated. I……accept to take part in this study and will give information to the best of my knowledge.

Swahili Version

Utafiti huu unaangalia mbinu zinazotumika na walezi wa watoto wachanga kati ya siku ya kuzaliwa na wiki sita kutunza kitovu hadi wakati pahali pale panapona kabisa. Wanaohusika na kuwatunza watoto wachanga wanapozaliwa wana umuhimu mkubwa sana katika kutunza kitovu. Hakuna madhara yoyote kwa yeyote Yule atakayeshiriki kwenye utafiti huu nani vyema kushiriki kwani matokeo yake yatahusishwa na hospitali kuimarisha mbinu za kuwaelimisha walezi wa hawa watoto jinsi ya kutunza kitovu. Yeyote anayeshiriki anaweza kuamua kutoshiriki wakati wowote ule kulingana na mapenzi yake. Hongera sana na nafuraia kabisa kushiriki kwako. Mimi ……. Nakubali kuhusika kwa huu utafiti na nitapeana habari kadri ya uwezo na kuelewa kwangu.

Signature of the respondent

……

Signature of the research assistant

…….

Appendix II: Client questionnaire

Instructions

a) The information is purely meant for the study purpose.

b) Privacy of the information will be ensured.

c) No names should be written on the questionnaire.

Section A: Demographic data

1. Age of correspondent in years.

   [1] 18- 27 [2] 28-37

   [3] 38-47 [4] 48 and above

2. Marital status

   [1] Single [2] Married

   [3] Divorced/separated/widowed

3. Religion

   [1] Muslim [2] Christians

   [3] Others, please specify……

4. Level of education

   [1] No formal education [2] Primary

   [3] Secondary [4] Tertiary

5. Occupation

   [1] Not employed [2] Self-employed

   [3] Employed

6. What is your monthly income in Kshs?

   [1] Less than 10,000 [2] 10,001-20,000

   [3] 20,001-30,000

   [4] 30,001-40,000 [5] More than 40,000

7. Number of children you have ever had.

   [1] One [2] Two [3] Three

   [4] Four and above

8. What is your relationship to the child?

   [1] Parent [2] Guardian

Section B: Cord care practices

9. How did you take care of the cord to ensure that it heals?

   [1] Appropriate [2] Inappropriate

10. If appropriate, which was the main method used?

    [1] Keeping it dry

    [2] Swabbing with spirit

    [3] Chlorhexidine cream

11. If inappropriate, which main method was used?

    [1] Applying breast milk

    [2] Adding black soil to the cord

    [3] Washing with boiled salty water

    [4] Applying soot

    [5] Applying saliva

    [6] Applying coconut oil

    [7] Using herbal substances

    [8] Any other method, please specify……

12. How long did the cord take to fall?

    [1] 1-2 weeks [2] 3-4 weeks

    [3] More than 4 weeks

13. What would you do if your child's cord gets infected?

    [1] Seek medical care services

    [2] Seek traditional care services

    [3] Do nothing

Section C: Socio-cultural factors

14. In your community, who influenced the cord care given by the mother to the child after delivery?

    [1] Healthcare provider [2] Mother-in-law

    [3] Myself [4] Traditional Birth Attendants

    [5] Others, please specify…….

15. In your community, is there a difference in the cord care given depending on the sex of the baby?

    [1] Yes [2] No

16. In your community, do you believe that use of a child's father's urine in cord care fastens its healing?

[1] Yes [2] No

17. I believe that the mother should stay away from the father's child till the cord heals?

    [1] Yes [2] No [3] Cannot tell

18. I believe the baby should be kept away from visitors until the cord completely heals?

    [1] Yes [2] No

19. I believe the cord is a delicate part of a child's body and when it is still there, it causes tension and anxiety.

    [1] Yes [2] No

Section D: Facility related factors

20. If a mother, were you attending ANC before delivery?

    [1] Yes [2] No

21. If yes, were you taught on cord care practices?

    [1] Yes [2] No

22. If a mother, where did you deliver?

    [1] Health facility [2] Home

    [3] On the way

23. If you delivered in the health facility, were you given anything from the hospital after discharge to apply on the child's cord until it falls?

    [1] Yes [2] No

24. If yes in 23 above, which items wer0 e you given?

    [1] Chlorhexidine cream

    [2] Spirit swab

25. Do you feel you were given adequate information on cord care practices by the healthcare providers?

    [1] Yes [2] No

26. During PNC visits, before six weeks, was there a follow-up on cord care practices from healthcare providers?

[1] Yes [2] No

Thank you for participating!!!!!

Appendix III: Letter from ERC

Mount Kenya University

FEBRUARY 20, 2018

Ref. No. MKU/ERC/0581

CERTIFICATE OF ETHICAL CLEARANCE

This is to certify that the proposal titled **"DETERMINANTS OF CORD CARE PRACTICES AMONG CARE GIVERS OF BABIES AGED 0 – 6 WEEKS ATTENDING MATERNAL CHILD HEALTH CLINIC AT THE MOMBASA COUNTY REFERRAL HOSPITAL"**, whose Principal Investigator is Ms Penina Muia Mulwa (MScN/2014/79794) has been reviewed by Mount Kenya University Ethics Review Committee (ERC), and found to adequately address all ethical concerns.

Mr Francis W. Makokha
Secretary, Mount Kenya University ERC

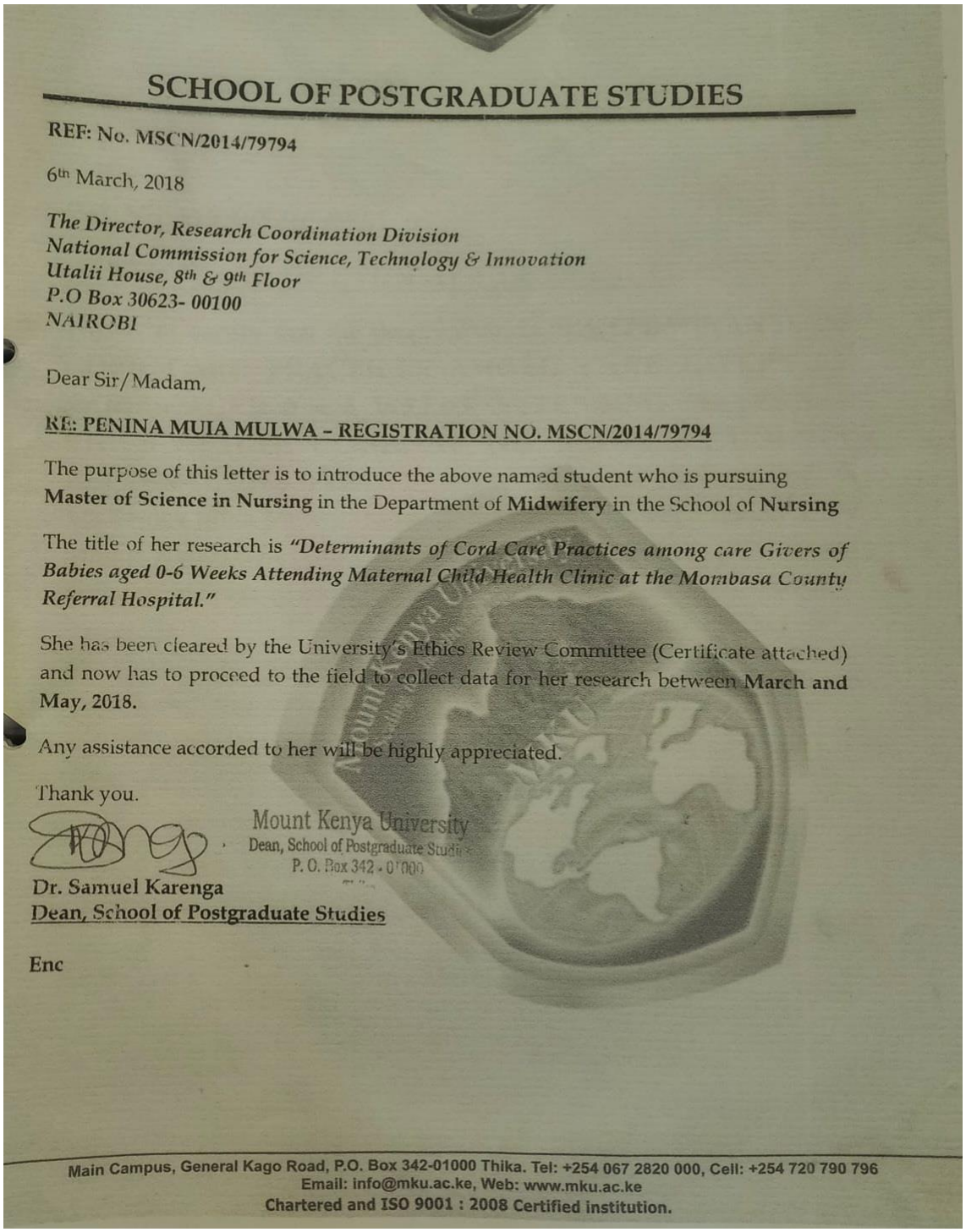
Sign: _____ **Date:** 21.02.2018

Prof. Francis W. Muregi
Chairman, Mount Kenya University ERC

Sign: _____ **Date:** 21.02.2018

The Chairman
Mount Kenya University
Ethics Review Committee
P. O. Box 343 - 0100, Thika

Appendix IV: Letter from Postgraduate



SCHOOL OF POSTGRADUATE STUDIES

REF: No. MSCN/2014/79794

6th March, 2018

The Director, Research Coordination Division
National Commission for Science, Technology & Innovation
Utalii House, 8th & 9th Floor
P.O Box 30623- 00100
NAIROBI

Dear Sir/Madam,

RE: PENINA MUIA MULWA – REGISTRATION NO. MSCN/2014/79794

The purpose of this letter is to introduce the above named student who is pursuing **Master of Science in Nursing** in the Department of **Midwifery** in the School of **Nursing**

The title of her research is ***"Determinants of Cord Care Practices among care Givers of Babies aged 0-6 Weeks Attending Maternal Child Health Clinic at the Mombasa County Referral Hospital."***

She has been cleared by the University's Ethics Review Committee (Certificate attached) and now has to proceed to the field to collect data for her research between **March and May, 2018.**

Any assistance accorded to her will be highly appreciated.

Thank you.

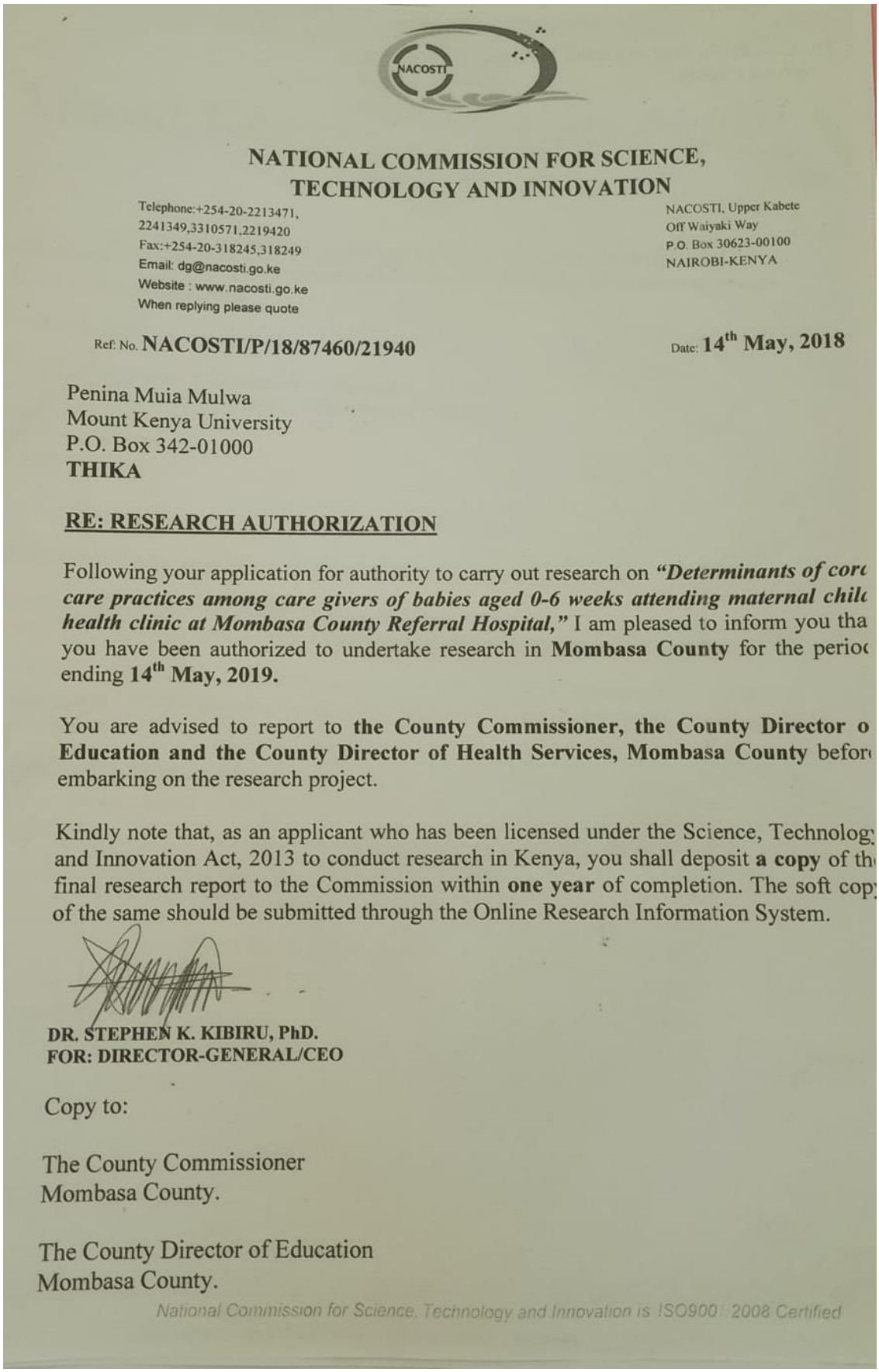
Mount Kenya University
Dean, School of Postgraduate Studies
P. O. Box 342 - 01000

Dr. Samuel Karenga
Dean, School of Postgraduate Studies

Enc

Main Campus, General Kago Road, P.O. Box 342-01000 Thika. Tel: +254 067 2820 000, Cell: +254 720 790 796
Email: info@mku.ac.ke, Web: www.mku.ac.ke
Chartered and ISO 9001 : 2008 Certified institution.

Appendix V: NACOSTI Authorization



NACOSTI

NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY AND INNOVATION

Telephone:+254-20-2213471, 2241349,3310571,2219420
Fax:+254-20-318245,318249
Email: dg@nacosti.go.ke
Website : www.nacosti.go.ke
When replying please quote

NACOSTI, Upper Kabete
Off Waiyaki Way
P.O. Box 30623-00100
NAIROBI-KENYA

Ref: No. **NACOSTI/P/18/87460/21940**

Date: **14th May, 2018**

Penina Muia Mulwa
Mount Kenya University
P.O. Box 342-01000
THIKA

RE: RESEARCH AUTHORIZATION

Following your application for authority to carry out research on ***"Determinants of corc care practices among care givers of babies aged 0-6 weeks attending maternal chilc health clinic at Mombasa County Referral Hospital,"*** I am pleased to inform you tha you have been authorized to undertake research in **Mombasa County** for the perioc ending **14th May, 2019.**

You are advised to report to **the County Commissioner, the County Director o Education and the County Director of Health Services, Mombasa County** beforc embarking on the research project.

Kindly note that, as an applicant who has been licensed under the Science, Technology and Innovation Act, 2013 to conduct research in Kenya, you shall deposit **a copy** of th final research report to the Commission within **one year** of completion. The soft cop of the same should be submitted through the Online Research Information System.

DR. STEPHEN K. KIBIRU, PhD.
FOR: DIRECTOR-GENERAL/CEO

Copy to:

The County Commissioner
Mombasa County.

The County Director of Education
Mombasa County.

National Commission for Science, Technology and Innovation is ISO900: 2008 Certified

Appendix VI: Research authorization from Mombasa County

COUNTY GOVERNMENT OF MOMBASA

DEPARTMENT OF HEALTH SERVICES

COAST PROVINCE GENERAL HOSPITAL

Phone : 2314202/5, 2222148,2225845
Mobile No : 0722207868
Fax : 2220161, Mombasa
Email : cacoastpgh@yahoo.com
When replying please quote :

P O Box 90231 – 80100
Mzizima Street
MOMBASA

Ref. ERC-CGH/MSc/VOL.I/51

Date: 11TH JANUARY, 2019

Penina Mula Mulwa

RE: DETERMINANTS OF CORD CARE PRACTICES AMONG CARE GIVERS OF BABIES AGE 0-6 WEEKS ATTENDING CHILD HEALTH CLINIC AT THE MOMBASA COUNTY REFERAL HOSPITAL

This is to inform you that the Ethics Review Committee reviewed the document submitted and is satisfied that the issues raised at the meeting of Ethics Review Committee on 24th August, 2018 have been adequately addressed.

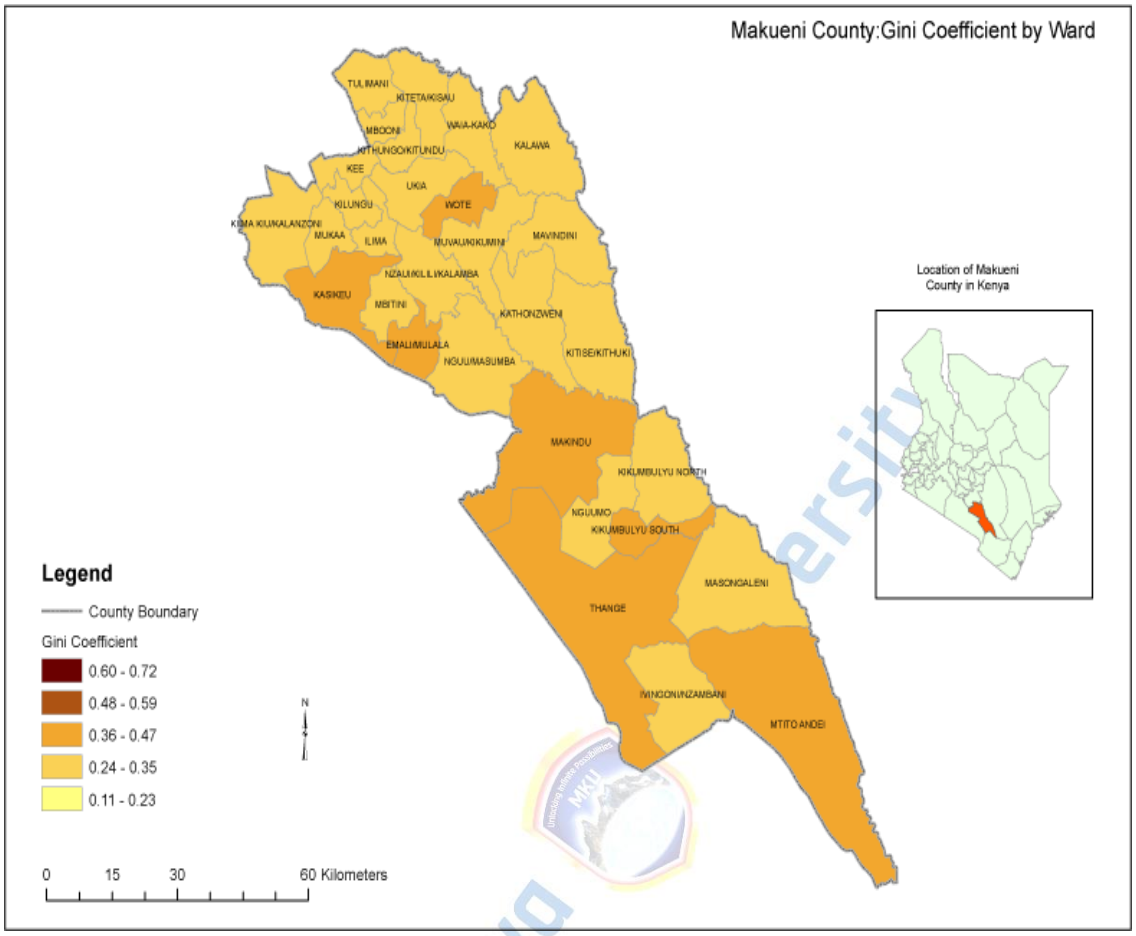
The study is granted approval for implementation effective from the date of this letter. Please note that authorization to conduct this study will automatically expire on the 24th August, 2019. If you plan to continue with data collection and analysis beyond this date, please submit an application for continuing approval to the ethical Review Committee-Coast General Hospital in appropriate time.

Any unanticipated problem resulting from the implementation of this protocol should be brought to the attention of the ERC-CGH. You are also required to submit any changes to this protocol to the ERC- CGH.

The ERC-CGH looks forward to receiving a summary of the research findings within 60 days upon completion of the study to be part of the data base to be consulted when processing related researches to minimize duplication.

DR. M. A. OCHOLA
SECRETARY ERC-CGH

Appendix VII: Map of study location



Appendix VIII: Similarity Index

DETERMINANTS OF CORD CARE PRACTICES AMONG CAREGIVERS OF BABIES 0-6 WEEKS ATTENDING CLINIC AT MOMBASA COUNTY REFERRAL HOSPITAL, KENYA.

by Penina Muia Mulwa

Submission date: 18-Jan-2023 07:43PM (UTC+0300)
Submission ID: 1994833089
File name: MKU_MPH_PENINA_MULWA_THESIS_AUGUST_2022_2.doc (2.92M)
Word count: 21032
Character count: 114352

DETERMINANTS OF CORD CARE PRACTICES AMONG CAREGIVERS OF BABIES 0-6 WEEKS ATTENDING CLINIC AT MOMBASA COUNTY REFERRAL HOSPITAL, KENYA.

ORIGINALITY REPORT

20%	18%	10%	7%
SIMILARITY INDEX	INTERNET SOURCES	PUBLICATIONS	STUDENT PAPERS

PRIMARY SOURCES

1	erepository.uonbi.ac.ke Internet Source	2%
2	ir-library.ku.ac.ke Internet Source	2%
3	ugspace.ug.edu.gh Internet Source	1%
4	ir.jkuat.ac.ke Internet Source	1%
5	ir.mu.ac.ke:8080 Internet Source	1%
6	www.frontiersin.org Internet Source	<1%
7	www.ajol.info Internet Source	<1%
8	irispublishers.com Internet Source	<1%

erepository.mku.ac.ke

Transportation In Jimma Zone, South West Ethiopia", Research Square Platform LLC, 2022
Publication

135 Jamlick Karumbi, Mercy Mulaku, Jalemba Aluvaala, Mike English, Newton Opiyo. "Topical Umbilical Cord Care for Prevention of Infection and Neonatal Mortality", The Pediatric Infectious Disease Journal, 2013 <1 %
Publication

136 Uriel Halbreich, Torbjorn Backstrom, Elias Eriksson, Shawn O'Brien et al. "Clinical diagnostic criteria for premenstrual syndrome and guidelines for their quantification for research studies", Gynecological Endocrinology, 2009 <1 %
Publication

Exclude quotes	Off	Exclude matches	Off
Exclude bibliography	Off		