ASSESSMENT OF POST NATAL CARE PRACTICES BY CLINICIANS AT JARAMOGI OGINGA ODINGA TEACHING AND REFERRAL HOSPITAL IN KISUMU KENYA

BY

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The Degree of Master of Science in Nursing

(Community Health)

DECLARATION BY THE CANDIDATE

This thesis is my original work and to the best of my knowledge this work has not been published and /or presented to any university for an award of a degree.

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This thesis has been submitted for examination with our approval as university supervisors.

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This thesis entitled assessment of Post Natal care practices by clinicians at Jaramogi Oginga Odinga teaching and Referral Hospital, written and submitted by Ephraim Kayi Odeny, in partial fulfillment of the requirements for the degree of Master of Science in Nursing (Community Health) is hereby accepted and approved.

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ABSTRACT

The major complications that account for nearly 75% of all maternal deaths worldwide occur during the post natal period. Clinician practices of post natal care have not been adequately studied to determine to what extent these practices contribute to post natal morbidity and mortality. This study looked at the clinician post natal care practices at Jaramogi Oginga Odinga Teaching and Referral Hospital, a level 5 facility in Kenya Kisumu County serving the larger Western Kenya Region.

This was a descriptive study. A total of 47 clinicians including Doctors, Nurses and Clinical Officers were sampled by conveniencee sampling. Post natal mothers were sampled through simple random sampling. The sampled mothers' files were checked for documented care by clinicians and a checklist developed to record the documented post natal care practices by the clinicians. Questionnaires for clinicians and mothers were developed based on the WHO, MOPHs and MOMS guidelines on post natal care. Questionnaires were administered by research assistants and data was analyzed using Microsoft excel.

Results indicate that Pulse rate was the most frequently assessed and documented by clinicians at 90.1% (200), followed by blood pressure at 88.7% (197). The least assessed was psychological state of the post natal mother at 5.4% (12). Most of the post natal mothers were discharged on prophylactic antibiotic 97.7% (217) and folic acid and iron supplementation 96.8% (215) and 88.3% (196) had their HIV status documented. There was very low documentation of counseling to the mother at 59% (13).

Post natal mothers reported very low percentage of care especially education on danger signs: heavy vaginal bleeding 49.5%, anemia 31.5% and engorged breast 28.4%. Despite the low level of PNC health messages provided to them, they feel that they are adequately prepared to handle complications at home 98.1%. This is a major area of concern regarding the safety of post natal mother at home and decision making to return to facility for further care.

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LIST OF ABBREVIATIONS

AIDS – Acquired immunodeficiency syndrome

ANC – Ante Natal Care

ARVs – Anti retro Virals

BCG – Bacille Calmette Guerille

BF - Breast feeding

C/S – Caesarean Section

CPAP – Continuous positive airway pressure

FP –Family planning

HIV – Human immunodeficiency virus

IFAS – Iron and folic acid supplementation

ITN – Insecticide treated net

JOOTRH – Jaramogi Oginga Odinga Teaching and Referral Hospital

KDHS – Kenya Demographic Health Survey

KHIS- Kenya Health Information systems

KMC – Kangaroo Mother Care

MMR – Maternal mortality ratio

MNCH- Maternal Newborn and child health

MOH – Ministry of Health

MOMS- Ministry of medical services

MOPH – Ministry of public health and sanitation

NACOSTI – National commission for science, technology and innovation

NGQOPNC – Kenya national guidelines for quality obstetric and perinatal care

PHD – Doctor of philosophy

PNC – post natal care

PPH – Post Partum Hemorrhage

RMNCAH- Kenya Reproductive, Maternal, Newborn, Child and adolescent health investment framework

RTIs – Respiratory tract infections

SDG – Sustainable development goals

SPSS –Statistical package for social sciences

STIs – Sexually transmitted infections

SVD – Spontaneous Vaginal Delivery

UEAB – University of Eastern Africa Baraton

UNFPA – United Nations Population Fund

WHO – World health organization

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DEDICATION

This thesis is dedicated to my wife Susan Awuor Kayi, my children David Odeny Kayi and Wendy Anne Kayi for the continuous encouragement and support during the entire period of the study. They are a great pillar in the completion of this document.

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CHAPTER ONE

INTRODUCTION

This chapter comprises the background of the study, statement of the problem, study objectives, significance of the study, study justification, limitations, scope and definition of terms. This study was done in the maternity unit of Jaramogi Oginga Odinga teaching and Referral Hospital (JOOTRH) a level five hospital in Kenya Kisumu County, Kisumu Central Sub County. The hospital is situated along Kisumu Kakamega road and has a bed capacity of 600 beds out of which 136 beds are for maternity and newborn unit. Study was done in the months of November – December 2019.

Background of the Study

The post natal period which is the first six weeks after birth is critical to the health and survival of the mother and her newborn. Major changes occur during this period that determines the lives of mothers and newborns. Yet this is the most neglected time for the provision of quality services. Rates of provision of skilled care are lower after child birth when compared to rates before and during child birth (WHO, 2013). The most vulnerable time for both is during the hours and days after birth. Lack of care during this period may result in death or disabilities as well as missed opportunities to promote healthy behaviors affecting women, newborns and children (Warren et al, 2009).

Every day, approximately 830 women die from preventable causes related to pregnancy and childbirth. Ninety nine percent of all maternal deaths occur in developing countries. Skilled care before, during and after childbirth can save the

lives of women and reverse the trends. It was estimated that in 2015, roughly 303 000 women died during and following pregnancy and childbirth. More than half of these deaths occur in sub-Saharan Africa (WHO, 2015). Sustainable development goals have set targets for maternal mortality ratio under Sustainable development goals 3 (SDG 3): By 2030 reduce the global maternal mortality ratio to less than 70 per 100,000 live births.

The major complications that account for nearly 75% of all maternal deaths worldwide are: post partum hemorrhage, puerperal sepsis, and high blood pressure during pregnancy (pre-eclampsia & eclampsia), complications from delivery and unsafe abortion(WHO, 2015). In Kenya, complications of pregnancy, child birth and puperium are the leading causes of inpatient morbidity and mortality. The five major causes of direct maternal death in Kenya in order of frequency are: hemorrhage, sepsis, hypertensive disorders, complications of abortion and obstructed labor (National guidelines for quality obstetric and perinatal care (MOPHS & MOMS, 2012). In Kisumu County the maternal mortality rate is 597/100,000) and the leading cause of maternal mortality is hemorrhage (UNFPA, 2015).In Jaramogi Oginga Odinga Teaching and referral Hospital, the leading cause of maternal mortality is hemorrhage, pre-eclampsiaand sepsis. According to the KDHS (2014), 51% of women aged 15-49 years who had a live birth in the last 2 years preceding the survey had a post natal check up within two days of delivery and those women aged 35-49yrs were less likely to receive post natal care within two days compared to women in younger age groups. If 61% of deliveries in Kenya take place in health facilities, then this means that even clinicians fail to perform post natal care within the first 24 hours when the mother is under their care leaving the mother at great risk at the point of discharge.

WHO estimates that the developed regions had a neonatal mortality rate of 8per 1000 live births and improved to 3 per 1000 live births in 2015, a decline of 58%, while the developing world region where Kenya is classified had 40 per 1000 live births in 1990 and 21per 1000 live births in 2015 a decline of 47% while Kisumu county is at 31 per 1 000 live births above the country figures. The world figures were at 36 per 1000 live births in 1990 and 19 per 1000live births in 2015 a decline of 47 per cent.One million neonatal deaths occur on the day of birth and close to 2 million occur in the first week of life. Quality of care in delivering lifesaving interventions during pre – pregnancy, ante natal, child birth, intra partum and postpartum periods is important to ensure healthy babies(WHO, 2015). Sustainable development goals have set targets for neonatal mortality under Sustainable development goals 3 (SDG 3): By 2030 end preventable deaths of newborns and under-five children (Swope, 2016). In Kenya the neonatal mortality rate is 31/ 1000 live births and neonatal mortality contributes to 60 % of all infant mortality cases (MOPHS & MOMS, 2012). In JOOTRH, the leading cause of neonatal mortality is birth asphyxia; Neonatal mortality rate is at 33/ 1000 live births. Most of the deaths occur in postnatal period (KHIS, 2018).

World Health Organization (WHO, 2013) recommends the following for post natal care:

a. Timing of discharge to be at least 24 hours after uncomplicated vaginal birth
b. Number & timing of post-natal contacts- 1st 24 hours, day 3(48-72hrs), and at 6wks
c. Home visits for post-natal care after first week of birth

d. Assessment of the baby – feeding, convulsion, breathing, temperature, jaundice during each post-natal care check up
e. Exclusive breast feeding first six months
f. Cord care – cleaning with chlorhexidine digluconate 7.1% aqueous solution, or gel 4% 1st week for newborns born at home and clean dry cord care for those born in hospital
g. Assessment of mother 1st 24hours– involution, Per vaginal bleeding, episiotomy care, temperature and pulse
h. Counseling and health education -
i. Iron and folic acid supplementation
j. Prophylactic antibiotics
k. Psychosocial support

(WHO, 2013)

Statement of the problem

Maternal mortality rates in developed regions (US, Europe) is 12 per 100,000 live births, in developing regions 239 per 100,000 live births and 546 per 100,000 live births in sub Saharan Africa (levels and trends in maternal mortality, 2017). In Kenya MMR is at 362 per 100,000 live births (KDHS, 2014) while Kisumu county is at 597 per 100,000 live births (UNFPA, 2015) and JOOTRH is at 632/100,000 live births, leading causes of maternal mortality are post-partum hemorrhage, pre –eclampsia and post-partum sepsis in Kisumu County (KHIS, 2017).

In 2015, an estimated 303,000 women died during pregnancy and childbirth. In 2016, maternal mortality was the leading cause of death for women of reproductive age. After HIV/AIDs, and was the leading cause among women aged 16-29 years.

Almost all maternal deaths (95%) occurred in low income and lower middle income countries, and almost two thirds 65% occurred in the world Health organization (WHO) African region (WHO, 2019).

According to WHO, the major complications that account for nearly75% of all maternal deaths are: severe bleeding (Mostly after child birth), Infections (usually after child birth), Pre-eclampsia and eclampsia, complications from delivery and unsafe abortion. This can be saved by skilled birth attendance (Clinicians) and postnatal care, as timely management and treatment can make a difference between life and death for the mother as well as for the baby. Post partum hemorrhage can kill a woman within hours if she is unattended. Injecting oxytocics immediately after birth effectively reduces the risk of bleeding. Infection after child birth can be eliminated if good hygiene is practiced and if early signs of infection are recognized and treated in a timely manner. Preeclampsia should be detected and managed before convulsions (eclampsia) and other life threatening complications (WHO, 2019)

Skilled Birth attendants who are clinicians are deployed at JOOTRH to provide Post Natal Care within the standards set by WHO, MOPHS & MOMS yet complications after delivery are the leading cause of maternal mortality in the facility.

The economic burden of maternal mortality is far reaching; households spend about 30% of annual per capita consumption expenditure to cover cost of treatment and funeral expenses. Many families do not have insurance scheme to meet these costs, members of the community are affected as they have to provide support to the bereaved family, the bereaved extended family have to take on roles that were performed by the diseased. Family members take time off from their

work making mitigation of the financial cost even harder and long lasting (Kes, Ogwang & Schaffer, 2015)

In JOOTRH, the leading cause of neonatal mortality is birth asphyxia (KHIS, 2017) which is preventable with skilled birth attendants and hospital delivery. The neonatal mortality rate is at 33/ 1000 live births (KHIS, 2017) which is high as compared to the global rates of 3 deaths per 1 000 live births and Kenya at 22/1000 live births (child mortality, 2015).Clinician practices determine outcomes and the global campaign is to have women deliver under care of skilled birth attendants and receive skilled post-natal care within six weeks of delivery (MOPHS& MOMS, 2012) as a measure to reduce maternal and neonatal mortality.

The Kenya national guidelines for quality obstetrics and perinatal care (NGQOPNC) recommend targeted post natal care which has the following elements: Maternal care: Health promotion using health messages and counseling, assisting the mother and her family to develop personal post natal plan, Provision of essential post natal care by skilled birth attendant(Clinicians) . Early detection of danger signs and treatment of problems, prevention of mother to child transmission of HIV, emergency preparedness and complication readiness, Counseling and service provision for post-partum FP/ Healthy timing and spacing of pregnancy, Screening for other conditions – cervical cancer, breast cancer, sexually transmitted infections (STIs) / Respiratory Tract Infections (RTIs)(MOPHS & MOMS, 2012)

Newborn care: Provision of essential care of the newborn, Counseling on infant and young child feeding, early detection of danger signs and treatment of problems and Immunization (MOPH & MOMS, 2012).

Many clinicians (Doctors, Midwives, Nurses and Clinical officers) miss out on these key post-natal care checks leading to severe complications and death. The clinicians in this study participate in care at various levels. All maternal and neonatal mortality and morbidity rates reported pass through clinicians' hands. Their contribution to these mortalities has not been clearly understood. Clinician practices in institutions are guided by policy and guidelines which are developed to ensure better health outcomes.

Purpose of the study

This study assessed the clinician practices with reference to WHO, MOPHS and MOMS guidelines and determine whether the practices are documented and prepare post natal mothers for self and baby care after discharge from Jaramogi Oginga Odinga Teaching and Referral Hospital.

Study objectives

1. Describe clinician Post Natal care practices at Jaramogi Oginga Odinga teaching and referral hospital with reference to WHO and MOH guidelines.
2. Describe clinicians Knowledge and availability of WHO and MOH guidelines in maternity unit of Jaramogi Oginga Odinga teaching and Referral Hospital.
3. Determine whether the care clinicians say they provide to post natal mothers is documented in patient files.
4. Describe Post Natal mother's perspective on the services provided to them by the clinicians.

Study questions

1. Do clinician practices of postnatal care at Jaramogi Oginga Odinga teaching and Referral hospital comply with the guidelines set by WHO and ministry of health?
2. Are clinicians aware of availability of guidelines in the maternity unit and make use of them to guide their practice?
3. Do clinicians at Jaramogi Oginga Odinga Teaching and Referral Hospital document the care they provide to Post Natal mothers in the patient files?
4. What is the post natal mother's perspective on the care provided to them by Clinicians at Jaramogi Oginga Odinga Teaching and referral Hospital?
5. Are the post natal mothers well prepared for self and baby care by time of discharge by Clinicians at JOOTRH?

Significance of the study

Clinicians are trained at different levels. In Kenya, Doctors, Nurses, midwives and clinical officers are the main care givers for mothers and their babies. The results of this study will be published and be used for clinical practice improvements through continuous professional development in facilities, revision of curriculum for training of clinicians by regulating bodies and inform policy on development of care guidelines and dissemination. It will provide guidance to help health care institutions develop clear roles and responsibilities of the various clinician cadres providing post Natal Care. Recommendations from this study create room for further research on clinician practices to develop practice protocols geared towards better outcomes for post natal care.

Study justification

There has been a significant improvement in post natal care from 10% in 2003 to 42% in 2008 -2009 and 51% in 2014 within 1st two days of birth (KDHS, 2014). Akunga, Menya & Kabue (2014) in their study on determinants of post natal care observed PNC rate of 47% and hospital delivery rate of 42% and the factors that determined PNC use were four ANC attendants and delivering in Hospital. In a study on opportunities to improve post-partum care for mothers and infants in four Sub Saharan African countries: Burkina Faso, Kenya, Malawi and Mozambique, showed that specific policies for post natal care are weak as compared to ante natal care and there is very little evidence of post natal care implementation (Duysburgh et al, 2015). This study recommended upgrading post natal care knowledge and skills through training of providers. Chelagat, Roets & Joubert (2016) in their study on a framework to improve post natal care in Kenya recommended that more research be done involving other post natal care providers apart from the midwives. This study provides information on clinician post natal care practices during period of hospitalization, awareness and adherence to the guidelines available and the patient's preparedness for self-care after hospitalization and care by clinicians.

Theoretical Framework

This study was guided by Imogene King's theory of goal attainment which states that "Nursing is a process of action by which nurse & client share information about their perception in a nursing situation" and a process of human interactions between nurse and client whereby each person perceives the other and the situation through communication, they set goals, explore means and agree on means to achieve goals (Wayne, 2014).

This theory applies the nursing process in which the Nurse (clinician) applies the five steps to provide professional care. The steps are assessment, diagnosis, planning, interventions, and evaluation. If goals are met then the client achieves self-care and allowed to continue at home. If goals are not met then re-assessment is done and process repeated (Khowaja, 2006).

The clinicians in this study are expected to interact with the client who is the post natal mother and her baby by taking history and assessment. The clinician will make a diagnosis through which He/ She will set achievable goals in collaboration with the mother. The interactions take place in the hospital environment which is conducive for post natal care. Both the clinician and the client work towards achievement of the goals for the benefit of the client and to achieve self-care. The team will part ways at discharge when satisfied that the goals have been met. The clinician should schedule a home visit at discharge.

The WHO and NGQOPNC guidelines provides the basis for the clinician practices under which the goals to be achieved are reduced maternal and perinatal mortality and morbidity.

The theory of goal attainment emphasize on the clinicians ability for critical thinking, observation of behavior, and the collection of essential information necessary for decision making to meet the needs of the clients/patients at a particular time. The delivery of care to the post natal mother and baby therefore becomes a process of thinking as well as doing as clinicians continuously monitor variances in the use of clinical pathways and work to prevent such variances recurring by monitoring patient outcomes (Khowaja, 2006).

Conceptual Framework

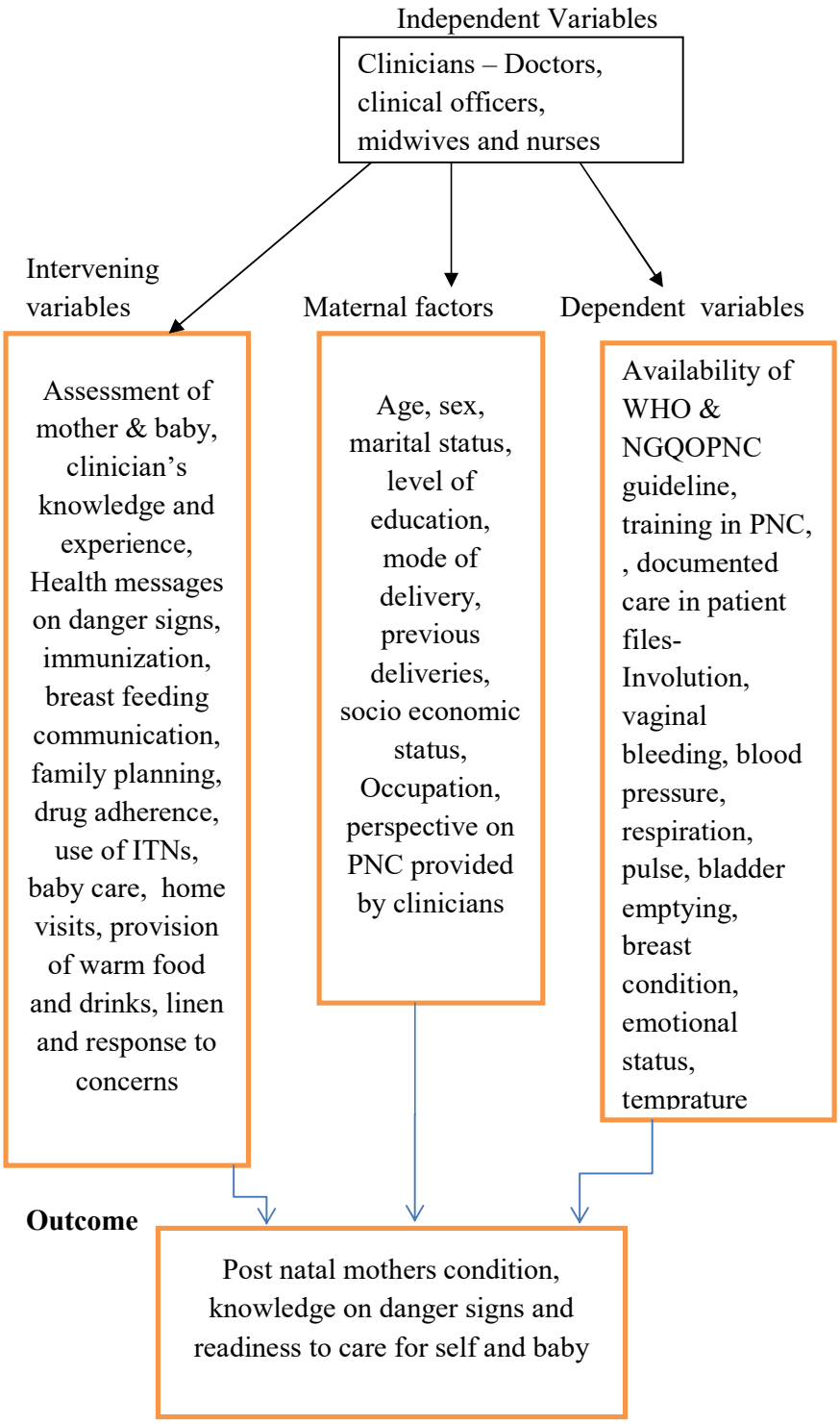


Figure1. Conceptual Framework

Scope of the Study

This study looks at the Immediate PNC to mothers that comprise assessment of danger signs of mother and baby and taking actions to prevent them by Doctors, Nurses, Midwives and clinical officers at Jaramogi Oginga Odinga Teaching and Referral Hospital. The passing of health messages that empower the post natal mothers for self and baby care at home and administration of folic acid and iron supplements, antibiotic administration and administration of birth doses of polio and BCG immunizations and documentation in patient files. The postnatal mothers perspective on the actual care provided to them and how prepared they are to care for themselves and their babies.

Limitations

The study did not look at cultural practices and beliefs that may affect post natal care of mother and baby. The study was limited to the immediate post natal care provided to the mothers before discharge.The post natal care appointment for return to clinic and arrangement for home visits ensures continuity of PNC for six weeks or 42 days after birth.

Operational Definition of Terms

Clinician- Doctor, Nurse, midwife, clinical officer providing immediate post natal care in the maternity unit.

Demographic health survey – Survey conducted every five years by the bureau of statistics to determine the countries' state of health and the population. The

information collected is mainly on fertility, maternal health, child health and immunization,

Intra-partum –the period during which the mother is in labor to expel the fetus and uterine contents.

Obstetrics – The field of study concentrated on pregnancy, child birth and postpartum period.

Post natal care (PNC) – care provided to a mother and her baby from the time of placental expulsion up to 42 days or six weeks.

Post natal care practices–what the clinicians providing care to post natal mothers actually do to the mothers before discharge.

Post-partum care – This is the care given to the mother from the time of placental expulsion up to six weeks after delivery.

Skilled birth attendant – a health care provider who has been trained and acquired the necessary skills required to manage a pregnant woman, delivery, child birth and post natal care. Refers to Doctors, nurses, midwives and clinical officers

Immediate Post Natal Care – the care provided to post natal mothers and their new borns after delivery to the time they are discharged home.

CHAPTER TWO

REVIEW OF RELATED LITERATURE AND STUDIES

A review of literature as presented in this chapter was taken from government policy documents, international policy guidelines, Journals and online publications.

Definition of Post Natal Care

The post natal period is the time beginning immediately after the birth of a baby up to forty two days or six weeks. Post natal care is given by a skilled birth attendant to both the mother and the baby from birth to reduce their risk of morbidity and mortality (MOPHS & MOMS, 2012).

Postpartum period refers specifically to the mother. In order to be consistent and avoid confusion due to interchanging of these terms, WHO has harmonized the terms and post natal care refer to all issues pertaining to the mother and baby within the first 42 days after delivery (WHO technical consultation on postpartum/postnatal care, 2010).

Historical perspective of Post Natal Care

The care for women during labor, child birth and post-partum period is traced from the years 1900 -1550 BC in Egypt. During this period, Midwifery was recognized as a female profession and that midwives used a wide range of herbal and other remedies in their practice and received payment for their work. They were considered the medical physicians of the day. Postpartum women suffered infections and hemorrhage which led to high mortality in post natal period until the advent of

modern medicine and midwifery practice. Pasteur's discovery of the bacteria and Lister's work on environmental cleanliness led to knowledge of etiology of infection for both Midwives and Doctors but midwives remained the care givers for child bearing women (Byrom, Edwards, Bick, 2010).

Post Natal Care of Mother

Studies on PNC in United States and Europe

In the United States, post-natal maternal health is neglected and is evident by the limited national health objectives and data related to maternal health. Post natal care is not well provided for or emphasized in the National health policies or national health objectives (Cheng, Fowls & Walker, 2006). However, the maternal mortality rates in the United States stands at 14 per 100,000 live births (WHO, 2015) which is minimal as compared to Sub Saharan Africa. Although maternal health care needs differ globally, effective post natal care could make an enormous difference to the lives of women and their babies. The challenge remains how to ensure policies on post natal care are developed and implemented (Byrom, Edwards, Bick, 2010). Clinicians should play their role in post-partum care policy development and ensuring implementation of the policies.

In the United Kingdom, there has been a significant increase in the quality of care for mothers despite the increase in number of births and complexities in the last decade. Maternal mortality has decreased from 14 per 100, 000 live births in period between 2002 to 2005 to 9 per 100,000 live births in 2013 to15 (National maternity review, 2016). The major cause of maternal death was mental health at 23%. Women in this review were found to have visited their midwife on average 3.1 times at home. Women felt they needed more support as is done in ante natal period:

The six week post natal check was felt to be inadequate. Many women said they received lots of support and care in the ante natal period which is not continued after birth. For some women, additional support sometimes simply someone to talk to could prevent the onset of depression and other mental health conditions, particularly in relation to the days spent in hospital which can be a low point for women(National maternity review, 2016).

According to the royal college of midwives in a survey conducted between September and November 2013, two thirds of midwives reported that the most important factor that influenced the number of post natal checkups a mother receives was not the woman's needs but the pressure on the service from the midwife shortage (Royal college of nursing, 2013).

Studies on Post Natal Care in Asia

In a study conducted in India, only 35.8% of mothers received 2 post natal checkups within 42 days after delivery. The low uptake was attributed to lack of knowledge of post natal care services, low literacy level of the mother, low socio-economic status and laborers occupied at place of work for fear of losing their daily wages (Uppadhaya et al, 2016,). In another study Singh et al (2012), revealed differentials in care by place of birth. 80.8% of mothers who delivered in a health facility in India received post natal care within 48 hours of delivery as compared to 18.0% of mothers who delivered at home while 82.0% of babies delivered in hospital received checkup within 24hours as compared to 18.8% of those delivered at home. There were also major differentials in post natal care utilization in this study regarding the mode of child birth. 92% of mothers who had caesarean section birth had post natal check up with in the first 48 hours as compared to 48.2% of those who

had normal delivery in the health facility. This was probably because the mothers who had caesarean section delivery stayed longer in hospital than those who had normal delivery. This trend existed with new born checkup with in the first 24 hours.

In Nepal, factors associated with less post natal care visits were: illiteracy, poverty, and cost of transport, more number of children at home, occupation and lack of knowledge about importance of post natal care (Rana, 2013)

In the Philippines, the high number of deliveries against a small number of skilled birth attendants is a major hindrance to provision of post-partum care since mothers have deficient knowledge on importance of postpartum care leading to low utilization of the service (Yamashita et al, 2017). This study linked post natal care utilization and postpartum women's characteristics (e.g. age, family income, delivery history and health insurance among others). In order to address this discrepancy the study recommends that midwives nurses, obstetricians and gynecologists should provide care based on women's characteristics. To achieve success in reduction of post-partum morbidity and mortality, the health care personnel must play a key role in educating mothers on danger signs in post natal period and importance of post natal care services within the first 24 hours during which period there is a higher risk of morbidity and mortality.

Studies on Post Natal Care in Africa

In a study conducted in Swaziland, there was high level of utilization of health facilities for delivery by HIV positive clients (93.8%), only 6.2% delivered at home. However the level of care provision by skilled birth attendants at the facilities was deficient and left mothers at risk of high morbidity and mortality during puperium. Only 40.6% had a physical examination done, 64.5% had a Blood pressure check,

25% pulse check, 53.5% temperature check and 53.8% family planning counseling (Dlamini, Ziyaye & Gule, 2017).

In a study conducted in Malawi by Chimtembo, Maluwa, Chimaza, Chirwa & Pindani (2013) on the quality of post natal care provided to women in Dedza District. The structure for providing Post natal counseling services was inappropriate and inadequate. Furthermore, clients were neither monitored nor examined physically on discharge.

Effective communication is an important aspect of post natal care, Mokaya (2010) in evaluating the use of mobile phone technology to enhance post natal care in South Africa found that barriers were due to patient factors such as illiteracy, language spoken, cultural beliefs and forgetfulness while systemic factors included inadequate personnel and inadequate funding. Ineffective communication leads to poor attendance in post natal clinics and lack of knowledge on danger signs. Communication among health care providers is very vital in provision of quality care: the national maternity review came up with the following on team work and respect between professions:Both midwives and obstetricians highlighted the need to improve working relationships between their professions and with other groups such as General Practitioners, health visitors, Nurses, neonatologists, pediatricians and anesthetists" (National maternity review, 2016).

Post Natal Care Studies in the East African Region

In Tanzania, having delivered in a hospital is a factor that made mothers not to attend post natal clinic and that women delivering at home were more likely to seek post natal services than those who delivered in hospital (Mohan et al, 2015). This

revelation shows a gap in provision of services at facilities especially on counseling of the mother on the need for post natal checkups.

In Ruanda, engagement with the health system before delivery is not a factor that increase post natal care utilization, however engagement with the health system during delivery contributes to utilization of post natal care services. This is attributed to the counseling done by the midwives and encouragement to attend post natal care services. This study also showed that older women's utilization of post natal care was lower due to their earlier experiences of poor care despite the tremendous improvement in quality of care in the recent past (Rwabufigiri etal, 2016).

In a study conducted in Ethiopia on post natal care utilization, only 10.1% of women attended post natal care clinic within the first 48 hours, 71.9% after one week of discharge and 51.6% at six weeks. The care provided by health care providers in these visits included: contraceptives 53.6%, physical examination 35.4%, advice on danger signs of mother 22.4% (Berhanu etal, 2016 p12). This shows a focus on contraceptives by the health care provider leaving the priorities of post natal care: Physical examination and education on danger signs on the mother. In another study, awareness about maternal complication, outcome of birth, mode of delivery, place of delivery, and ever faced delivery complication while giving last birth were factors associated with post natal care utilization(Limenih, Endale & Dachew, 2016)

Poor organization of services and quality of care, lack of knowledge in the community and traditional beliefs and practices delay or inhibit post-partum care. Understaffing, high staff turnover, poor motivation, and lack of staff knowledge and skills on post-partum care hamper provision of quality post-partum care (Duysburgh et al, 2015).

According to Syed et al (2006). Post natal checkup within 6 hours of birth may not be feasible in most communities but post natal checkup within 72 hours should be compulsory to reduce deaths of mothers and neonates. This should apply only in cases of home delivery. Mothers who have delivered in hospital should get close attention from skilled birth attendants and adequately be educated on the danger signs for both mother and baby to observe and report after discharge. Providing post natal education in various ways including one on one interaction reinforced by written materials is an effective approach to meeting post-partum women's knowledge needs (Buchko et al, 2012).

"There are few consistently measured indicators of PNC coverage and none track the effectiveness of PNC services provided by the clinicians. The demographic health surveys measure the timing of the first PNC but not where it took place, by whom it was given or its content or quality (Sines, Syed, Wall & Worley, 2007).

PNC Studies in Kenya

According to Owili et al (2015) there is a lack of association between ante natal care and post natal care and a sudden drop was observed in the pathway between delivery care and post natal care. This can be attributed to the clinician practices during delivery and immediate post natal care which can be a hindrance to further care.M'Ibuku (2013) in an assessment of the quality of post delivery services at Naivasha Hospital, Kenya found that vital signs were not adequately measured and documented by staff, the least of which was temperature measurement at 58% of participants having their temperature recorded once during the admission for delivery. The most emphasized was blood pressure, with all participants having their blood pressure measured at least once during the admission. Counseling of the mother was

deficient especially on family planning and need for post natal care. The results point to the need for improved capacity of clinicians to ensure adequate measurement of vital signs which are critical in detection of danger signs and health education of mothers to ensure they report any changes they notice to a health care provider for early intervention.

Educated women, those living in urban areas, women attending 4 ANC visits, and women delivering in health facilities are more likely to use post natal care services (Akunga et al, 2014). These determinants of post natal care use, link the level of education of the mother to interaction with a healthcare provider resulting in a positive behavior aimed at better quality of life for the mother.

Using community midwives to provide post natal care in the community and integration of sexually transmitted diseases and respiratory tract diseases in post natal care are some of the best practices identified to ensure high quality services (Liambila et al, 2015). Despite the introduction of output based approach vouchers in some facilities in Kenya, post natal care quality remained low as compared to non-voucher facilities. However, a significant improvement was observed on structural improvements in voucher facilities (Warren, et al, 2015,). Postpartum care providers are not satisfied with the services they provide and attribute these to high workload, poor infrastructure, insufficient equipment, supplies and training materials, and the need for more training (Warren et al, 2008).

"Despite the high facility deliveries in Nairobi, Health institutions are not providing women with sufficient information needed to fend off the problems associated with post natal period" (Kamau, 2014).

Post Natal Care for the Baby

In the United Kingdom, there has been a significant increase in the quality of care for babies despite the increase in number of births and complexities in the last decade. The still birth and neonatal mortality rate fell by over 20% in the last ten years (2003 – 2013). In India 2/3 of neonatal deaths can be avoided by hospital delivery and post natal care of the baby (Fadel et al, 2015)

According to a study on post natal care by provider type conducted in ten African countries, post natal care whether provided by skilled or unskilled health care provider is associated with saved lives of newborns and countries should continue to promote post natal care as a means of saving the lives of newborns (Singh, Brodish& Haney, 2014).

In a study conducted in Ethiopia on post natal care utilization, only 10.1% of women attended post natal care clinic within the first 48 hours. The care provided includes immunization of baby 98.1%, danger signs of baby 15.6%, physical examination of baby 5% (Berhanu, Asefa & Giru, 2016).

In a review article on essential childbirth and post natal interventions for improved maternal and neonatal health, Salam et al (2014) found out that optimal thermal environment within the delivery suite in ten minutes of delivery for preterm infants, early initiation of breastfeeding, promotion and provision of hygienic cord and skin care preferably chlorhexidine, neonatal resuscitation with bag and maskfor babies who do not breathe at birth, presumptive antibiotic therapy for the newborn at risk of bacterial infection, case management of neonatal sepsis, meningitis and pneumonia are very essential in new born care. Other important interventions from this review include kangaroo mother care, extra support for feeding the small and

preterm baby, prophylactic use of synthetic surfactant, therapeutic surfactant use for respiratory distress syndrome, continuous positive airway pressure (CPAP) to manage preterm babies with respiratory distress syndrome.

The top causes of newborn death in Africa are: infections, prematurity, asphyxia and low birth weight (Opportunities for Africa's newborns, 2006). Majority of these deaths occur within the first day and first week of life and that two thirds of these deaths are preventable through essential maternal, newborn and child health (MNCH) packages already in policy.

In a study conducted in Malawi to identify strengths and gaps in the existing facility capacity for intra-partum and immediate post-partum fetal and neonatal care, 75% of clinicians and 39% of midwives at the health facility level had no training in emergency obstetric and newborn care. There was a national emphasis on Kangaroo Mother Care (KMC), but it was not widely practiced in facilities to ensure warmth & survival of preterm babies (Kozuki et al, 2017, p5-8).

Warren et al (2015) in a study on comparison of post natal care quality in facilities participating in maternal health voucher program versus non-voucher facilities in Kenya, found out that more women had their babies immunized for BCG (82.5%) in voucher facilities than non voucher facilities (76.5). Since BCG immunization is an important component of newborn care, any intervention that improves its coverage is vital for post natal care of the baby.

Policy and Guidelines

According to a study by Haran et al (2014) in a review of six guidelines from Australia, United Kingdom and United states drawn from government, professional body and non-profit organization:

> Clinical practice guidelines provide an avenue for practitioners to access critically-evaluated evidence-based recommendations for the care of their patients. This review found only six guidelines from the international literature that satisfied the selection criteria and addressed out-of-hospital maternal and infant care in the postpartum period. Despite the quality of the guidelines and the similarity of recommendations, only one guideline covers routine postpartum care for the mother and infant. It is important that the mother and infant be seen as a unit, particularly in the first few months of life, because what affects one inevitably affects the other.

Health professionals are the primary audience for the guidelines which include Physicians, Midwives, Auxiliary Midwives and Nurses providing primary health care in facilities and at home (WHO, 2013).

The Kenya reproductive, maternal, newborn, child and adolescent health investment framework 2016 (RMNCAH) stipulates that: “Providers must accurately diagnose, adhere to clinical guidelines and have the skills and competencies to manage maternal and newborn complications and treat the sick child according to clinical guidelines”.

The document also states that Provider skills and competencies to manage obstetric complications are limited. This emphasizes the need for training of providers and ensuring that clients are attended to according to the set standards.

Under the Kenya Essential package for health, Post natal care is an intervention for improving person centered essential health services (Kenya health sector strategic and investment plan 2013-2017).

According to the Kenya national guidelines for quality obstetrics and perinatal care (2012), guidelines are based on available research and meant to assist in decision making about appropriate healthcare for specific conditions. The healthcare provider is expected to ask him/herself what the problem is. I'm I able to manage? Is my management leading to success? And take appropriate action individually and collaboratively. Clinicians are supposed to be trained on these guidelines to ensure appropriate management of every patient passing through their care. In order to strengthen MNH policy environment & research, the Kenya government aims at advocating for a new policy to recognize midwifery as a specialty through enactment of midwifery act (Scaling up effective interventions in maternal and newborn health 2016-2018). This policy document intends to have redeployment of existing midwives to maternity units to avert two thirds of maternal and newborn deaths.

The WHO guidelines (2013) state that:

After an uncomplicated vaginal birth in a health facility, healthy mothers and newborns should receive care in the facility for at least 24 hours after birth. If birth is in a health facility, mothers and new borns should receive post natal care in the facility for at least 24 hours before discharge. If birth is at home then the first post natal contact should be as early as possible within 24 hours of birth. Home visits recommended in the first week for PNC of both mother and baby.

Assessment of the baby to include: feeding, history of convulsions, fast breathing (respiratory rate >60 breaths per minute), severe chest in drawing, no spontaneous movement, low body temperature and jaundice. Mother must also be educated to

identify these signs at home: Exclusive breastfeeding, cord care, bathing is delayed until after 24 hours. Assessment of the mother – vaginal bleeding, uterine contraction, fundal height, temperature, heart rate and blood pressure. Urine void be documented within six hours. Emotional and psychological well-being must be part of assessment at each contact.Counseling with focus on danger signs, nutrition, personal hygiene, family planning, safer sex, use of insecticide treated nets (ITNs) and gentle exercise during post natal period. Iron and folic supplementation to prevent anemia,Prophylactic antibiotics to prevent endometritis and perineal infection in cases of perineal tears and episiotomy. Psychosocial support to prevent postpartum depression among women at risk should be performed.

All the above recommendations are evidence based and are meant to make the clinicians' practice at a level that guarantees safety of the mother and baby.

The NGQOPNC has been developed from the WHO guideline and has been localized to include some of the conditions that are major cause of morbidity and mortality in Kenya.

- Targeted post natal care elements:
- Maternal Care:
- Health promotion using health messages and counseling(e.g nutrition and resumption of sexual activity).
- Assist the mother and her family to develop a personal post natal care plan.
- Provision of skilled post natal care by skilled attendant.
- Early detection of danger signs and treatment of problems
- Prevention of mother to child transmission of HIV (PMTCT)
- Emergency preparedness and complication readiness

- Counseling and provision of postnatal Family planning (FP)/ healthy timing and spacing of pregnancy
- Screening for other conditions e.g cervical cancer, breast cancer, STI/RTI

New born care:

- Provision of essential care of the newborn
- Counseling on infant and young child feeding
- Early detection of danger signs and treatment of problems
- Immunization

Constitution, practice regulation and scope of practice

The constitution of Kenya (2010) states that every person has the right to the highest attainable standard of health including reproductive health. Post natal care being the care of the mother and baby is an important aspect of care that is taken care of in this constitution. There are various acts of parliament that regulate the training and practice by clinicians. The clinical officers (training, registration and licensing) act chapter 260 (2009) regulates the training, registration and licensing of clinical officers. Under this law, No one shall call him/ herself a clinical officer unless he/she has undergone the prescribed course in a recognized institution, passed the necessary examinations, registered and licensed to practice. The same applies to nurses and midwives whose training and practice is regulated by the nurses act chapter 257 (2012):"An act of parliament to make provision for the training, registration, enrolment and licensing of nurses to regulate their conduct and to ensure their maximum participation in the healthcare of the community and for connected purposes".

The medical practitioners and dentists act chapter 253(2012) defines a qualified medical practitioner as one registered under this act as a medical practitioner. These laws guarantee safety of clients as they are handled by clinicians who are licensed to practice by these regulatory bodies in Kenya. All the three cadres of clinicians (nurses, clinical officers and doctors) are well qualified to provide post natal care at various levels and are key players in the safety of the mother and the baby. This is the reason why they are referred to as skilled birth attendants. The constitution and the acts of parliament enacted to regulate clinicians practice focuses on safety of Kenyan citizens and especially the vulnerable post natal mothers and babies.

Kenya is a member of the commonwealth Nations and subscribes to treaties and policies made by WHO and world health assembly. The county government act operates under the new constitution 2010 and therefore all counties use the national policies and regulations in the implementation of their programs post natal care inclusive.

Study gaps

Guidelines & studies in this literature review recommend post natal care by skilled birth attendants (clinicians) who attain that status through prescribed training by law, but even under their care the major causes of maternal mortality still occur in post partum period with the leading causes being post partum hemorrhage, eclampsia and sepsis. There is still high neonatal mortality in Kisumu, major causes being neonatal sepsis, asphyxia, low birth weight and prematurity within the first week of life. The cause of the negative indicators has not been identified.

Demographic health surveys and studies highlighted measure post natal care coverage but not where it took place, by whom it was given or its content or quality. Few studies have looked at midwives practices but not the other clinicians.

There is evidence of very good care during ante natal period but these drops during post natal period despite the development of WHO and Kenya national guidelines on targeted post natal care. Knowledge and skills gaps exist among clinicians on emergency obstetric and newborn care hence the question on guideline dissemination and training.

CHAPTER 3

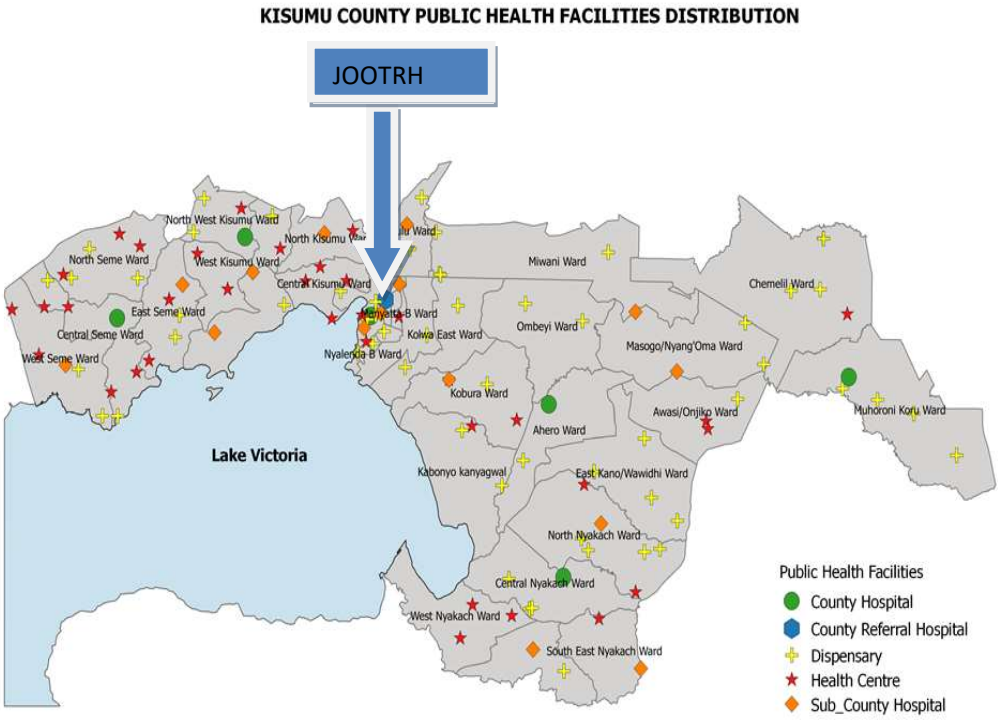
RESEARCH METHODOLOGY

Research design

This was a descriptive study. Use of quantitative data to assess the care practices by clinicians and adherence to guidelines was employed. Client's perspective of the care provided was also assessed to verify the clinician's actions and preparation of clients for self-care and that of their babies after discharge. Questionnaires were administered to clinicians and clients. A checklist for documented care was used to determine the actual practices.All mothers sampled had their files checked for documented PNC and charted on the checklist.

Location of Research Project

This study was done in Kenya Kisumu County at Jaramogi Oginga Odinga teaching and referral Hospital (JOOTRH) maternity ward. JOOTRH is a level 5 facility serving western Kenya region as a regional referral hospital. It is located in Kisumu Central Sub County, Kondele location along Kisumu Kakamega Road. The Hospital has a bed capacity of 600 beds and is a teaching hospital for Maseno University and Uzima University medical schools.



Map of Kisumu County facilities showing location of JOOTRH. Source http://maps.google.com/kisumucity

Population and Sampling Techniques

The research population comprised Nurses, Midwives, Clinical Officers, and Doctors working in the maternity unit at JOOTRH. JOOTRH being the biggest referral facility in the region is used for training of interns in Nursing, Clinical Medicine and Doctors and is a practical training center for comprehensive emergency obstetric and neonatal care. The hospital's maternity unit has a total of 37 nurses including intern nurses working in the labor ward and post natal ward. The department also hosted 4 medical officer interns and 4 medical officers. There were two clinical officer interns covering the department during the study period. A change

over for medical officer interns in the middle of the study increasing the number of targeted medical Officer Interns to six. Interns are key providers of post natal care services in this facility.

Sampling for the clinicians was convenience sampling. Convenience sampling is a type of sampling that relies on data collection from population members who are conveniently available to participate in the study (Mugenda & Mugenda, 2003). This ensured that the service provider present during the study was given opportunity to provide information on provision of care to post natal mothers from end of third stage of labor to discharge and his/her documented care in patient files be evaluated. Their consent was sought before their participation and only those who consented participated in the study.

Sampling for the mothers was simple random sampling. Every second mother who had a normal delivery or Caesarean section in the labor ward on a daily basis was sampled to participate and their consent sought for. Their files were identified with a unique number on a sticker. Clinical records in the file were checked for the documented care after discharge and charted as documented or not documented on the check list. Post natal mothers were interviewed at discharge to assess the care they received from the clinicians and whether they were prepared to detect danger signs at home and prevent complications of delivery. The mothers who did not meet the criteria were dropped and then the next was picked for the study.

Sample size determination for mothers

The average number of mothers delivering in the facility per month as per 2016 statistics was 500 (for caesarean section, spontaneous vaginal delivery and breech). Using the slovins formula:

n= N/1+Ne^2 (Mugenda & Mugenda, 2003)

n=sample size

N= population size

e=margin of error (*e*<_ 0.05)

n=500/1+(500 x 0.0025) = 222 mothers

Variables

Independent variables

Clinicians – Nurse, Doctor, Clinical officers

Dependent Variables

Post natal care practices- Assessment of mother: involution, vaginal bleeding, blood pressure check, temperature, pulse, respiration, operation site, bladder check and urine void. Administration of antibiotic, iron and folate, HIV testing, home visiting, counseling on nutrition, resumption of sex and perineal hygiene.Danger signs, nutrition and food intake, sleeping under mosquito net, adequate rest and sleep and pelvic exercises.

Assessment and care of baby: Cord care, temperature check, apex beat, breastfeeding, jaundice, immunization, delay of bathing for 24hours. Danger signs on the baby. Including: fever, diarrhea, convulsions, jaundice, not breast feeding, low apex beat, asphyxia and infected cord.

Inclusion criteria

Clinicians willing to participate in the study were included after signing of consent. All the clinicians in the department were eligible for inclusion provided they

sign the consent form. Mothers who had live births either through SVD/ breech or Caesarean section were included in the study. Mothers who consented to willingly participate in the study were interviewed and allowed to opt out when they feel they cannot continue.

Exclusion criteria

Mothers who have had fresh stillbirth and macerated still birth were excluded from this study as care of both mother and baby was not to be practiced. Postnatal care is completely provided to both mother and baby.

Research instruments

Questionnaires and checklist were used to collect data from both clinicians and clients. Two sets of questionnaires were developed based on the available guidelines (WHO, MOPH & MOMS) for clinicians and clients. Check list for documented care was also developed capturing all the required assessments and counseling to ascertain the exact practices. The clinician and mother's questionnaires were administered by a research assistant while documented care on the sampled mother's files was checked and charted by the researcher.

Data Collection Procedure

Research assistants (Nurses) were recruited & trained to administer the instruments to the clinicians and clients. Study instruments for mothers were in both Luo language (for those who do not understand English language) and English language. Mothers were asked which language they preferred. Majority preferred the English version of questionnaire and a few preferred the Luo version. None of the

participants wanted a different language used. Consent was obtained from the respondents before administration of the questionnaires; the research assistants recorded the responses on the questionnaires as the respondents were interviewed. Patient's files were examined for the documented evidence of care provided by each category of clinicians and documented on the relevant checklist. The researcher familiarized himself with the documentation system in the department and how clinicians sign after documenting. This enabled identification of each cadre documenting on the files.

A pilot study was conducted at the Kisumu county referral Hospital to determine the suitability and validity of the research instruments. A flat rule of thumb was used to determine the sample size for the pilot study. A sample size of 10 for clinicians and 20 for mothers were studied. The questionnaires were found reliable after calculating the Cronbach's Alpha.

Testing the reliability of the data collection instruments

Data were entered into Microsoft Access database tables from the hard copy questionnaires that had been used as pre-tests.

Post-natal Mothers' questionnaires

Stata 15.0 was used to test for the reliability of the questionnaires by calculating the Cronbach's Alpha for three sets of questions: set 1 had all the 10 questions in section 1 (Demographic information), set 2 had 22 questions from section 2 (Post-natal care knowledge information), and set 3 had 31 questions from section 2 (Baby care).

Table 1 below has the summary of the reliability test results for the three scales for the post-natal mothers' questionnaires.

Table 1: Results of reliability tests on the post-natal mothers' questionnaires

Dimensions	Number of items	Average inter-item covariance	Alpha (scale reliability coefficient)
Demographic information	10	0.25	0.70
Post-natal knowledge information	22	0.11	0.92
Baby care	28	0.04	0.88

Clinicians' questionnaires

Stata 15.0 was used to test for the reliability of the questionnaires by calculating the Cronbach's Alpha for four sets of questions: set 1 had all the 6 questions in section 1 (Demographic information), set 2 had 9 questions from section 2 (level of staffing and operation), set 3 had 6 questions from section 3 (Availability/awareness/training on post-natal care guidelines), set 4 had 12 questions from section 4 (Post-natal care practices – mother care), and set 5 had 8 questions from section 5 (Danger signs in the baby).

Table 2 below has the summary of the reliability test results for the five scales for the clinicians' questionnaires.

Table 2: Results of reliability tests on the clinicians' questionnaires

Dimensions	Number of items	Average inter-item covariance	Alpha (scale reliability coefficient)
Demographic information	6	0.22	0.66
Level of staffing and operation	9	0.05	0.52
Availability/awareness/training on PNC guidelines	6	0.08	0.71
Post-natal care practices – mother care	12	0.03	0.74
Danger signs in the baby	8	0.05	0.91

Statistical treatment of Data

Data Analysis

All questionnaires were edited for completeness and tallied on daily basis. Data was loaded into Microsoft access databases. Cleaning was done by going through the entered data step by step and checking for any missing data or wrongly entered data and editing done in reference to the hard copies of the questionnaires to verify that they tallied with the response given by the respondent. Descriptive and inferential statistical analyses were done using Stata 15.1. All the quantitative data were summarized in tables and percentages.

Ethical Consideration

All participants were required to sign a consent form authorizing their participation in the study, they were also assured that they were free t withdraw their consent at any stage of the study. Ethical approval was obtained from UEAB ethical and review committee, JOOTRH ethical and review committee and the National commission for science technology and innovation (NACOSTI) respectively. Letter of introduction to the departments where the study was conducted was obtained from JOOTRH administration. Permission to conduct research in Kisumu County Facility was also granted by the County Chief Officer of Health. Confidentiality was maintained on all information provided by the informants.No incentives were given to the study subjects.

Data Dissemination

Data dissemination was done through a workshop at Jaramogi Oginga Odinga Teaching and Referral Hospital involving the obstetrics and gynecology department,

maternal and child health services and the maternity ward staff. The post natal mothers are members of the community served by JOOTRH under community health services. Community dialogue day was held in each of the five community units that informed the members of the results of this study and the need for PNC.

CHAPTER 4

PREZENTATION OF FINDINGS ANALYSIS AND INTERPRETATION

Section 1: Clinician Sociodemographic Data

Table 3: Sociodemographic data of Clinicians

Characteristic	Percentage (Frequency) N=47
Age in completed years	
20-24	21.3 (10)
25-29	34.0 (16)
30-34	12.8 (6)
35-39	8.5 (4)
40-44	12.8 (6)
45-49	4.3 (2)
50-54	4.3 (2)
55-59	2.1 (1)
Sex	
Male	27.7 (13)
Female	72.3 (34)
Highest level of education	
Certificate	2.1 (1)
Diploma	51.1 (24)
Bachelor's degree	42.6 (20)
Master's degree	4.3 (2)
Title	
Enrolled nurse / midwife	4.3 (2)
Registered nurse / midwife	57.4 (27)
Nurse intern	17.0 (8)
Clinical Officer intern	4.3 (2)
Medical Officer intern	12.8 (6)
Obstetrician/gynecologist	4.3 (2)
Holding leadership in maternity department	
Nurse in charge	4.3 (2)
Maternity unit manager	2.1 (1)
Obstetrician / gynecologist in-charge	2.1 (1)
None of the above	91.5 (43)
Duration working in maternity	
<1 year	36.2 (17)
1-5 years	42.6 (20)
6-10 years	8.5 (4)
>10 years	10.6 (5)
Missing	2.1 (1)

Percentages are shown, with the number of cases in brackets.

A total of 47clinicians were interviewed. 21.3% (10) were aged between 20-24 years, 34% (16) of the clinicians were aged between 25-29 years, and 68.1% of Clinicians in maternity are less than 35 years old. 27.7% (13) of the clinicians were males and 72.3% (34) were females. 51.1% (24) were diploma holders and 42.6% (20) were holders of bachelors' degree. 57.4% (27) were registered Nurse Midwives,

Only 8.5% (4) respondents had leadership positions in maternity two of whom were nurse in charges and 1 maternity unit nurse manager and 1 Obstetrician Gynecologist. 42.6% (20) of the respondents had been working in maternity for less one to five years and 36.2% (17) for less than one year in maternity. Majorityof Clinicians have less than 5 years experience in maternity.

Section2: Staffing and Post Natal Care Provision

Table 4: Level of staffing and operation

Question	Percentage (Frequency) N=47
Adequate clinicians for PNC	
Strongly agree	10.6 (5)
Agree	34.0 (16)
Disagree	46.8 (22)
Strongly disagree	6.4 (3)
Missing	2.1 (1)
How can postnatal care be improved in this department	
Training of staff on post-natal care	34.0 (16)
Improved supervision	17.0 (8)
Develop PNC management protocols	51.1 (24)
Improved scheduling	14.9 (7)
Employment of more staff	48.9 (23)
What can you do as an individual to improve the care	
Access WHO and NGQOPNC guidelines	61.7 (29)
Read more about PNC from books	31.9 (15)
Learn more from supervisors	27.7 (13)
Other	14.9 (7)
Spend more time with a mother in labor than PNC	
Strongly agree	34.0 (16)
Agree	46.8 (22)

Disagree	14.9 (7)
Strongly disagree	4.3 (2)

Percentages are shown, with the number of cases in brackets.

Asked whether there are adequate clinicians in the department, 46.85% (22) disagreed and34.0 % (16) agreed that there are enough clinicians. 51.1% (24) report that post natal care can be improved by development of post natal care protocols and 48.9% (43) by employment of more staff. 61.7% (29) feel that post natal care can be improved by availing guidelines in the department and 46.8% (22) agreed that they spend more time with a mother in labor than post natal mother.

Sec 3: Availability, Awareness and Training on Post Natal Care Guidelines

Table 5: Availability/awareness/training on PNC guidelines

Question	**Percentage (Frequency) N=47**
Aware of any guidelines on postnatal care	
WHO guidelines	66.0 (31)
Kenya NGQOPNC	48.9 (23)
Aware of PNC guidelines in maternity	70.2 (33)
Trained/oriented on PNC outside professional training	55.3 (26)
Where training on PNC was done apart from professional training	
Workshops/seminars	25.5 (12)
On-job-training_this facility	27.7 (13)
On-job-training_other facility	2.1 (1)
Other	2.1 (1)
PNC has been given right attention by clinicians	
Strongly agree	14.9 (7)
Agree	66.0 (31)
Disagree	17.0 (8)
Missing	2.1 (1)

Percentages are shown, with the number of cases in brackets.

Who guidelines had the highest level of awareness at 66% (31) of clinicians followed by NGQOPNC at 48.9% (23) and 70.2% (33) agreeing that guidelines are

available in maternity. 55.3% of the clinicians report having had some training on Post Natal Care outside professional training while 66.0% (31) agree that clinicians have given PNC the right attention.

Section4: Post natal care practices:

Mother care

Table 6: What clinicians check for in their daily practice in maternity ward

Areas checked	**Percentage (Freq) N=47**
Vaginal Bleeding	83.0 (39)
Uterine Contraction	93.6 (44)
Episiotomy/perineal care	87.2 (41)
Temperature	85.1 (40)
Heart rate	91.5 (43)
Blood pressure	95.7 (45)
Bladder emptying	89.4 (42)
Psychological/emotional status	78.7 (37)
Condition of the breast	91.5 (43)
HIV status	93.6 (44)

Percentages are shown, with the number of cases in brackets.

Blood pressure is the most assessed vital sign reported by the clinicians at 95.7% (45) followed by uterine contraction (involution) and HIV testing at 93.6.

Table 7: Other Post-natal practices done daily by clinicians in maternity ward

Post-natal practices (Mother care)	**Percentage (Frequencies) N=47**
Do you take time to pass health promotion messages to mother	
Nutrition	83.0 (39)
Personal hygiene	91.5 (43)
Family planning	89.4 (42)
Safe sex	83.0 (39)
Use of ITN	76.6 (36)
Gentle exercise	74.5 (35)
Assist mother and family develop personal PNC plan	

Disagree	36.2 (17)
Agree	63.8 (30)
Agree	51.1 (24)
Disagree	2.1 (1)
Missing	2.1 (1)
Steps taken if examinations/messages are not done	
Find out why and ensure they are performed	51.1 (24)
Instruct someone to perform	6.4 (3)
Missing	2.1 (1)
Personally perform exam	40.4 (19)
Commonest reasons for no examinations	
Insufficient training	4.3 (2)
Lack of equipment	10.6 (5)
Missing	4.3 (2)
Shortage of clinicians	74.5 (35)
They are not part of daily emphasis	6.4 (3)
Who should counsel mother on danger signs	
Nurse/midwife	97.9 (46)
Clinical Officer	36.2 (17)
Doctor	34.0 (16)
Ensure PNC mothers observed >=24 hrs before discharge	85.1 (40)
PNC appointments made before/on discharge	
Strongly agree	48.9 (23)
Agree	46.8 (22)
Disagree	2.1 (1)
Missing	2.1 (1)
Length of PNC appointments	
3 days after discharge	4.3 (2)
After 2 weeks	68.1 (32)
6 weeks	23.4 (11)
Missing	4.3 (2)
Program available for home visits to PNC mothers	
Program in place	35.6 (16)
Program in place but not implemented	20.0 (9)
Program not in place	44.4 (20)

Percentages are shown, with the number of cases in brackets

Clinicians report emphasizing personal hygiene at 91.5 (43), followed by family planning at 89.4%(42) then nutrition and safe sex health messages at 83% (39) each. 63.8% (30) report assisting the mother and her family to develop post natal care plan, steps taken when post natal checks and health messages not passed is mostly find out why and ensure they are done 51.1% (24) and personally perform 40.4% (19) and main reason why they are not done is shortage of clinicians at 74.5% (35). On counseling, the clinicians report that nurse midwife should be themain counselor on

danger signs at 97.9% (46). PNC appointments are made before discharge 48.9% (23) strongly agreed and 46.8% (22) strongly agreed. PNC appointments are made at 2 weeks after discharge 68.1% (32) and 6 weeks 23.4% (11). Plans for home visiting not in place in the facility 44.4% (22).

Section 5: Baby danger signs

Table 8: Danger signs in the baby

Baby examination for danger signs	**Percentage (Frequency) N=47**
Assessment of baby is part of PN care	
Strongly agree	76.6 (36)
Agree	21.3 (10)
Missing	2.1 (1)
In PNC you always check for these danger signs	
Breastfeeding	93.6 (44)
Convulsions	85.1 (40)
Body temperature	87.2 (41)
Respiratory rate	91.5 (43)
Skin/mucous membrane	91.5 (43)
State of the cord	91.5 (43)
Teaches mother to delay bathing 24 hrs	
Disagree	27.7 (13)
Agree	72.3 (34)
First examination of newborn done in this unit	
Disagree	31.9 (15)
Agree	68.1 (32)
Perform baby examination in daily practice	
Disagree	19.1 (9)
Agree	80.9 (38)
Teaches mother on identifying/managing danger signs	
Disagree	10.6 (5)
Agree	89.4 (42)

Percentages are shown, with the number of cases in brackets.

Clinicians responded that they mostly assess for baby breastfeeding at 93.6% (44), skin & mucous membranes at 91.5 %(43) for jaundice and tissue perfusion, and state of the cord at 91.5% (43) for infection. Teaching of mother to identify danger signs is least reported at 10.6% (5) of clinicians

Documented Care

Per vaginal bleeding and involution n=222

Table 9: Clinicians performimg examination of Per vaginal bleeding/lochia loss (n=222)

Cadre	Frequency	Percent of cases with documentation
Medical Officer	5	2.3
Obstetrician/gynecologist	18	8.1
Clinical Officer intern	36	16.2
Medical Officer intern	158	71.2
Nurse/Midwife	217	97.8

Clinicians documented care showed that vaginal bleeding is the most assessed and documented by midwives at 97.8% (217) and medical officer interns at 71.2% (158) on the patient files.

Fundal Height/ Involution

Table 10: Clinicians performing examination of Fundal height / Involution (n=222)

Cadre	Frequency	Percent of cases with documentation
Medical Officer	4	1.8
Obstetrician gynecologist	23	10.4
Clinical Officer	29	13.1
Nurse intern	37	16.7
Medical Officer intern	172	77.5
Nurse/Midwife	205	92.3

Fundal height /involution was the second most documented assessment by midwives at 92.3% (205) and medical officer in terns at 77.5% (172) on the patient files.

Other danger signs on the post natal mother Documentation

Table 11: Documentation of care given to post-natal mothers at the facility, n=222

Procedure	Percent (Frequency) N=222
State of perineum/episiotomy	4.5 (10)
State of C/S wound	
Documented	19.8 (44)
Not documented	9.9 (22)
Not applicable	70.3 (156)
Pulse rate	90.1 (200)
Respiratory rate	11.3 (25)
Blood pressure	88.7 (197)
Temperature	29.7 (66)
Urine void	22.5 (50)
Condition of breast	14.4 (32)
Counseling on nutrition and others	5.9 (13)
Folic acid and iron supplementation	97.7 (217)
Prophylactic antibiotic	96.8 (215)
HIV status	88.3 (196)
Assessment of psychological state	5.4 (12)
Linkage for home visits	2.7 (6)

Percentages are shown, with the number of patient files with documentation in brackets

Pulse rate was the most frequently assessed by clinicians at 90.1% (200), followed by blood pressure at 88.7% (197). The least assessed was psychological state of the post natal mother at 5.4% (12). Most of the post natal mothers were discharged on prophylactic antibiotic 97.7% (217) and folic acid and iron supplementation 96.8% (215) and 88.3% (196) had their HIV status documented. There was very low documentation of counseling to the mother at 59% (13).

Documented post natal care of baby

Breast feeding was the most assessed and documented sign on the baby by the clinicians at 91.4% (203). Baby temperature was documented at 59.5% (132), cord care 24.3% (54). Other signs on baby were documented at less than 20%.

Table 12: Documentation of danger signs of baby, n=222

Danger sign	Percent (Frequency) N=222
Temperature	59.5 (132)
Respiratory rate	18.0 (40)
Breastfeeding	91.4 (203)
Convulsions	15.8 (35)
Jaundice	15.8 (35)
Evidence of cord care	24.3 (54)
Spontaneous movement	12.6 (28)
Comprehensive examination of baby	13.5 (30)
Delay in bathing for 24 hours	1.4 (3)
Immunization	99.1 (220)

Percentages are shown, with the number of patient files with documentation in brackets.

Only 1.3% (3) mothers were counseled to delay bathing for 24 hours after delivery and documented in their files. Most babies were immunized before discharge and documented in the mother child booklet by the clinicians.

Post natal mother responses

Post natal mother's sociodemographic data

Table 13: Sociodemographic characteristics of Mothers

Characteristic	Percentages (Frequencies) N=222
Age in completed years	
10-15 yrs	0.5 (1)
16-20 yrs	13.5 (30)
21-30 yrs	64.4 (143)
31-40 yrs	21.6 (48)
Marital status	
Single	13.1 (29)
Married	77.9 (173)
Separated	5.0 (11)
Widow	2.7 (6)
Divorced	1.4 (3)
Highest level of education	
Primary incomplete	8.1 (18)
Primary completed	17.1 (38)
Secondary school incomplete	16.2 (36)
Secondary school completed	21.2 (47)
College certificate	10.8 (24)

College diploma	17.6 (39)
Bachelor's degree	9.0 (20)
Occupation	
Unemployed	47.0 (103)
Formal employment	13.7 (30)
Casual work	9.1 (20)
Business	30.1 (66)
Monthly income	
Ksh 1000 - 5000	37.5 (51)
Ksh 11000 -15000	15.4 (21)
Ksh 16000 - 20000	11.8 (16)
Ksh 6000 - 10,000	22.1 (30)
Ksh>20000	13.2 (18)
Number of previous births	
0	24.8 (55)
1	27.5 (61)
2	25.2 (56)
3	16.2 (36)
4	5.9 (13)
5	0.5 (1)
Number alive from previous births	
0	32.4 (70)
1	26.1 (58)
2	22.5 (50)
3	13.5 (30)
4	5.4 (12)

Percentages are shown, with the number of cases in brackets.

Zero point five percent (1) of mother was between 10-15 yrs, 13.5% (30) were16-20 years age bracket, 64% (143) were 21-30years, 22% (48) were 31-40 and none fell between 40-50yrs.

Eight percent (19) of post natal mothers did not complete primary, 21% (46) completed primary, 16% (35) did not complete secondary education, 21.2% (47) completed secondary, 12% (26) had done a certificate course, 17.6% (37) had diploma certificate. 47% (103) of the women were unemployed and 37.5% (51)had income below Ksh. 5000. 27.5% (61) had one previous birth and 32.4% (70) had no living child.

Details of current Birth

Table 14: Details of the current birth

Variable	Percentages (Frequencies) N=222
Mode of delivery	
Assisted vaginal Delivery	1.4 (3)
Breech	6.3 (14)
Caeserian section	24.3 (54)
SVD	68.0 (151)
Length of hospital stay	
<12 hrs	10.4 (23)
13-24 hrs	49.1 (109)
25-48 hrs	14.0 (31)
49-72 hrs	9.9 (22)
>72 hrs	16.7 (37)
Reasons for staying >24 hrs	
Baby in NBU	22.6 (26)
Caeserian section	41.7 (48)
Lack of user fee	7.0 (8)
Mother developed complications	22.6 (26)
Other	6.1 (7)

Percentages are shown, with the number of cases in brackets.

Majority of the mothers interviewed had a spontaneous vaginal delivery while 24.3% (54) had a caesarean section done. 49.1% of the mothers were discharged after staying in hospital for between 12-24 hours after delivery. Majority of those who stayed longer had undergone caesarean section 41.7% (48).

Mothers' post natal care knowledge and practice

Table 15: Post-natal care knowledge information – Part 1

Variable	Percentages (Frequencies) N=222
Time before initiating breast feeding	

Within one hour	61.7 (137)
Within six hours	27.5 (61)
Within 12 hours	4.5 (10)
Within 24 hours	5.9 (13)
Assisted/shown how to breastfeed	76.6 (170)
Advised on exclusive breastfeeding	81.3 (178)
Advised on when to resume sex	42.1 (93)
Advised on the signs to report on	70.0 (154)
The following were mentioned by the health worker:	
Engorged Breasts/ Cracked Nipples	28.4 (63)
Fever/ abdominal pain/foul smelling discharge	34.7 (77)
Extreme tirednes(Anemia)	31.5 (70)
Heavy vaginal bleeding	49.5 (110)
Urinary/fecal incontinence	8.1 (18)
Severe sadness, unable to take care of baby	8.1 (18)
Severe headache/blurred vision	22.5 (50)
Convulsions/fits	4.1 (9)

Percentages are shown, with the number of cases in brackets.

Mothers report that the most passed information to then by the health workers is about exclusive breastfeeding 81.3% (178), they are also shown how to breast feed 76.6% (170). There is very low education on danger signs by the clinicians with the best mentioned heavy vaginal bleeding 49.5% (110). Fever with abdominal pain or foul smelling vaginal discharge is ranked 2nd best at 34.7 % (77).

Baby Care

Table 16: Baby care

Variables	**Percentages (Frequencies) N=222**
Advised to delay bath for 24 hours.	
no	38.5 (85)
yes	61.5 (136)
Advised on cord care	

no	29.4 (65)
yes	70.6 (156)
Shown how to bath the baby	
no	27.5 (61)
yes	72.5 (161)
Advised on danger signs for baby	
no	22.2 (49)
yes	77.8 (172)
Health worker mentioned these as danger signs:	
Baby refuses to feed/suckle	55.9 (124)
Baby feels very hot/cold	31.1 (69)
Difficulty breathing	39.2 (87)
Wet cord with blood/pus or swollen	31.5 (70)
Swollen eyes/pus from eyes/ears	8.6 (19)
Yellow body, eyes, or palm	14.9 (33)
Lethargy/floppy	8.6 (19)
Diarrhea	7.2 (16)

Percentages are shown, with the number of cases in brackets.

On care of their babies, 77.8% of mothers report that they were talked to about danger signs for the baby and the most mentioned danger sign was baby refuse to breast feed 55.9% (124).

Table 17 : Immunization, Clinic appointment and evaluation of care provided

Variables	**Percentages (Frequencies) N=222**
Child immunized (BCG & birth polio)	
no	5.4 (12)
yes	94.6 (210)
Advised about subsequent immunizations	
no	8.1 (18)
yes	91.9 (204)
Advised on growth monitoring	
no	11.9 (26)
yes	88.1 (193)
When advised to return baby to clinic	
After 2 weeks	36.9 (82)
After 6 weeks	59.0 (131)
Other	0.5 (1)
When danger signs present	3.6 (8)
Advised to have baby sleep under ITN	
no	4.5 (10)
yes	95.5 (211)
Period told to return for check up	
After 2 weeks	20.7 (46)
After 6 weeks	40.5 (90)

When danger signs present	34.2 (76)
After 6 months	3.2 (7)
Not told	1.4 (3)
Adequately prepared to care for self and baby at home	
no	1.9 (4)
yes	98.1 (211)
Health care provider who was very useful	
Clinical Officer	4.1 (9)
Doctor	14.0 (31)
Nurse in charge	32.1 (71)
Nurse-midwife	49.8 (110)
How the mothers identified the health workers by cadre	
Name tag	61.3 (136)
They introduced themselves	20.7 (46)
I asked them about their positions	5.0 (11)
Other	9.0 (20)
Suggested improvement: Communication	
No	75.7 (168)
Yes	24.3 (54)
Suggested improvement: Food & fluid provisions	
No	83.3 (185)
Yes	16.7 (37)
Suggested improvement: Education on danger signs	
No	84.7 (188)
Yes	15.3 (34)
Suggested improvement: Environmental hygiene	
No	85.6 (190)
Yes	14.4 (32)
Suggested improvement: Provision of Linen	
No	48.2 (107)
Yes	51.8 (115)
Suggested improvement: Response to concerns	
No	75.2 (167)
Yes	24.8 (55)
Suggested improvement: Others	
No	98.2 (218)
Yes	1.8 (4)

A high percentage of mothers reported that their babies were immunized with BCG and birth polio 94.6% (210). The best response was on advice to have baby sleep under ITN 95, 5% (211). 91.9% (204) were advised on the importance of subsequent immunization, 59.0% (131) were told to return the baby to the clinic after 6 weeks.. 98.1% (211).were adequately prepared to take care of self and baby at home and feels

that the nurse midwife was the most helpful during their stay in hospital 49.8% (110).they had identified the clinicians with their name tags 61.3% (136). Environmental hygiene was at the top of areas that should be improved.

CHAPTER 5

DISCUSSION

The need of skilled care is important during delivery and more during immediate postpartum period. A large proportion of maternal and neonatal deaths Occur during 48 hours following childbirth. In this study, clinician practices of post natal care were looked at to determine how they help prevent maternal and neonatal deaths.

Clinician Experience, Training and Knowledge on Guidelines

Clinician's demographic data revealed that majority 34.0% (16) were aged between 25-29 years and 21.3(10) were aged between 20-24 years. The majority were females 72.3% (34) and had professional qualification at diploma level 51.1% (24). majority of clinicians are nurse midwives 57.4% (27). 36.2% (17) of the clinicians had experience of less than 1 year in the maternity unit and 42.6% (20) less than 5 years experience. In general practice, it is believed that the more experienced the provider is the more skilled he/she becomes. Obstetrician/ gynecologists are considered the more skilled in this area and the skill is attributed to more than five years of practice in obstetrics. In this study only 4.3% (2) of clinicians were obstetrician gynecologists. There is a general shortage of clinicians to provide post natal care as revealed by 74.5% of clinicians in this study. This trend is also observed by the royal college of midwives: two thirds of midwives reported that the most important factor that influenced the number of post natal checkups a mother receives was not the woman's needs but the pressure on the service from the midwife shortage (Pressure points, 2013, p.4). In order to improve postnatal care, clinicians suggest that

more clinicians be employed 48.9% (23) and that there should be improved supervision 17.0% (8). They also would like to access guidelines (WHO and NGQOPNC) 61.7% (29) and learn from their superiors 27.7% (13). 34.0% (16) of the clinicians have had some training in PNC after graduation from college and need more training to gain more skills. This confirms that they are inexperienced and require support from more experienced and skilled personnel. Clinicians accept that they spend more time with the mother in labor than postnatal mother 34.0% (16) and 46.8% (22) for strongly agree and agree respectively. This is an indication that post natal care is given less attention by the clinicians. Only 55.3% (26) of the clinicians have had some training in post natal care after graduating from college confirming that they may be having some deficiency that leads to the gaps in post natal care. While70.2.% (33) of clinicians reported that guidelines are available in the maternity unit, there is lack of dissemination and use of the guidelines to ensure adequate attention is given to the post natal mother. This result complies with that of Karma (2014) which had 60% availability of guidelines but lack of dissemination in Nairobi county facilities.

Clinician Practices and Documentation of Care

HIV testing, prophylactic antibiotics administration, folic acid and iron supplementation and blood pressure checks were the most documented care for the mothers. Post natal assessment for vaginal bleeding is documented by nurse midwives at 97.8% (217) . This complies with the results in a study done by M'Ibuku (2013) in Naivasha Hospital which found that blood pressure was the most measured vital sign in post natal mothers. While 95% of clinicians agreed that they document everything they perform for the mothers, vaginal bleeding is the most documented

assessment. Medical officer interns documented this at 71.2 % (158) while clinical officer and nurse interns documented at 16.2% (36). Documented care for obstetricians and gynecologists was mainly during the ward rounds at 9% of files examined. The focus on blood pressure & vaginal bleeding is mainly in response to PPH as the main cause of maternal mortality among post natal mothers in this facility. This is contrary to the recommendations by WHO guidelines (WHO, 2013).

Counseling of post natal mothers on danger signs was focused on vaginal bleeding, fever and engorged breast which gives priority to detection of PPH and post partum sepsis which are the major cause of maternal mortality, which the clinicians are attempting to empower the mothers to observe. Mokaya, 2010 emphasizes in her study that effective communication is an important part of PNC. Clinicians also responded that they perform temperature, respiration, bladder emptying and breast examination assessments, but on documented care, temperature was documented at 29.7%, respiration rate 11.3%, urine void 22.5% and breast examination at 14.4%. This indicates that the clinicians consider these as less important danger signs, yet they are major indicators that point to infection and PPH. The most neglected assessment of the post natal mother is the emotional and psychological state which was done at 5.4%, this leaves most mothers at risk of developing puerperal psychosis. this maybe a deterrence to the mother's future decision making on PNC as revealed by Rwabufigiri et al 2016.

Counseling on danger signs and passing of health messages by clinicians was most of the time not documented 5.9% (13), although mothers responded that they were counseled on danger signs at 70% (154). This could be a major contribution to the gaps in post natal care in this facility as there will be no evidence to make the next clinician handling the client intervene. Home visiting is not part of post natal care

that is emphasized by the clinicians and there is minimal attempt to use the existing community health structures to implement as recommended by WHO. Only one (0.5%) post natal mother was linked to this system.

While clinicians responded that examination of the newborn is part of PNC , documented assessment and care of the newborn is quite low. Baby not breast feeding is the highest at 91.4% followed by temperature at 59.5% then by cord care at 24.3%. This clearly explains the reason for high rate of neonatal deaths in this facility. Immunization of the baby with at least one antigen was done for almost all the babies born in this facility 99.1%. This findings is inconsistent with that of Kamau (2014) where temperature was assessed at 85% and cord care at 75% in Nairobi County Hospitals.

Mother's perspective of care by clinicians

Majority of mothers interviewed (64.4%) were between 21-30 years which is also the same age of majority of clinicians who took care of them. 77.9% were married while, 21.2% had secondary education, 47% were unemployed, and 37.5% had income of Ksh. 1000 -5000. These mothers are young women of reproductive age who are married with some education but depend mostly on their husbands for their up keep. This confirms the finding by Upadhaya et al that low socioeconomic status is a major cause of low PNC uptake. This situation puts the women in danger during the post natal period because the financial decision will always be made by the husbands who may not be available when complications occur. On birth history, 27.5% of the women had one previous birth and 26.1% one living child an indication that confirms that most of the women are inexperienced and need more assistance from the clinicians in post natal care. Majority of the women (49.1%) were observed in

hospital for at least 24 hours while 41.7% stayed longer because of having been done Caesarean section or having developed some complications after birth. This result shows a higher percentage than the study by Kamau (2014) which had only 26% of mothers being observed for at least 24hours after delivery. Clinicians in this study 48.9% and 46.8% strongly agree and agree respectively had reported that they observe mothers for at least 24 hours. 63% of the mothers initiated breast feeding within 1 hour and 61% were assisted by the clinician on how to breast feed. While this is not consistently documented by clinicians, it is an indication that mothers get some assistance that enables them to provide care to their babies. On when to return to the clinic, 20.7% 0f mothers were told to return after 2 weeks, and 34.2 % told to return any time when they notice danger signs and 6 weeks 40.5% which is quite appropriate for the safety of mother and baby, however, the WHO and Kenya National guidelines for quality obstetric and neonatal care recommends 6 weeks return date for PNC of baby and mother. On care of the newborn, mothers reported that they were told to delay first bath 61.5% and 70.6% shown how to perform cord care. This is low as compared to a study by Syed et al (2006) who reported delay of bath at 82%. The most emphasized danger sign by the clinicians to the mothers on their babies were baby not breast feeding 55.9% and difficulty in breathing 31.5%.

Post natal mothers reported very low percentage of care especially education on danger signs: heavy vaginal bleeding 49.5%, anemia 31.5% and engorged breast 28.4%. However the mothers still felt that they were well prepared to take care ofthemselves and their babies at home after discharge. The PNC mothers reportthat thenurse midwife played themost important role in their PNC while in hospital and suggest improvements in their care in response to concerns 75.2% and provision of linen 51.8%.

CHAPTER 6
SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

Summary

Clinicians practicing post natal care at Jaramogi Oginga Odinga Teaching and Referral Hospital are mainly young Nurses, clinical officers and doctors less than 30yrs of age (55%). 75% of them are females and majority are trained at diploma level. They desire to improve their post natal care knowledge through study of the guidelines, reading books, training and mentorship by the senior colleagues in the profession. Because of the high work load, the clinicians focus more on care of the mother in labor and once safe delivery is achieved less attention are given to the post natal mother.

Clinician practices of post natal care within the first 24 hours at JOOTRH are mainly in response to what they perceive to be of great danger to the post natal mother. This is clearly indicated by clinician response for vaginal bleeding, involution, blood pressure and & pulse rate assessments, however, assessment of respiratory rate and psychological status are least in their priorities at 76% and 74% respectively for clinician questionnaire responses and at 25% and 0.5% respectively for documented care. Only 25% (31) of the mothers documented care had assessment for bladder emptying which is a practice that ensures involution is achieved adequately. This is most likely related to the fact that majority of the clinicians have only short experience in maternity of less than 5years.

Counseling of the mothers on danger signs is perceived by the clinicians to be more of nurses' duty than as combined force of all the clinicians providing post natal care.

Clinician, mother's response and documented care indicated that home visiting is not practiced by clinicians at JOOTRH maternity; neither do they work with the existing staff in the health system to ensure it is done for safety of the post natal mother.

Documentation of counseling services to the post natal mother is rarely done although mother's responses indicate that they do get some counseling from the clinicians.

First examination of the newborn is performed occasionally leaving the newborn at risk of complications of birth. However, temperature checks, cord care and immunization with BCG and birth polio are routinely adhered to. despite the insufficient knowledge on danger signs passed to the mothers by the clinicians, mothers still felt that they are well prepared to take care of themselves and their babies.

Conclusion

Post natal care at JOOTRH maternity is mainly provided by nurses and medical officer interns who focus on vaginal bleeding, involution, blood pressure, pulse and the baby breast feeding and body temperature. The mothers who have undergone caesarean delivery receive PNC with special focus on the state of the operation site and blood loss per vagina. Mothers are observed for at least 24 hours before they are discharged. Counseling on danger signs and passing of health messages is often not documented and forms the major gap in post natal care of the mother. New born care has a focus on immunization with BCG and birth polio, temperature checks and cord care. Documented care clearly states the focus on vaginal bleeding, involution, blood

pressure and pulse rate but lacking important aspects of assessment such as bladder care, respiratory rate, and psychological state, state of breast and skin color of the baby. No arrangements are made for home visiting using the health system structures. The mother leaves the hospital while she is not adequately prepared to handle complications at home and detect danger signs.

Post natal mothers report that they are adequately prepared to handle complications at home but evidence in this study show that they are inadequately prepared.

Recommendations

- Further study should be conducted to determine the lack of documentation of PNC by medical officers attached to the department of obstetrics and gynecology at JOOTRH.
- Further study on how shortage of skilled birth attendants affects their practices of post natal care should be conducted to determine the minimum number required for the current work load.
- Dissemination and use of guidelines in maternity unit should be monitored by hospital administration to ensure the existing gaps are sealed.
- More experienced midwives should be deployed to the department to ensure mothers receive the recommended PNC and mentor the younger midwives.
- Have a regular training program in comprehensive emergency maternal obstetric and neonatal care and basic maternal and neonatal obstetric care for all staff working in maternity unit.
- Clearly define the role of the obstetrician in post natal care and institute measures that will ensure they are involved in PNC as the senior most care providers.

- Include home visiting as part of PNC in JOOTRH.
- Health messages and counseling on danger signs should be documented on patient's notes by clinicians.

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APPENDIX I

CONSENT FOR CLINICIANS

This study is being conducted by Ephraim Kayi Odeny MSc (Nursing) student at the University of Eastern Africa Baraton. It is intended to the practices of clinicians on post natal care as guided by the WHO post natal care guidelines and Kenya national guidelines on quality obstetric and peri natal care. As a clinician delivering services in this unit you are requested to participate by giving your responses to the questions that will be administered by a research assistant. Your responses will be treated with confidentiality and will only be used for the intended purpose of this study. The questionnaire will be serialized and will not have your name. In addition the researcher will observe the way you provide services to the post natal mothers and the records documented in the patients file. If you accept to participate, you will have to sign a consent form before we proceed. You are at liberty to withdraw your participation at any stage of the investigation.

CONSENT

I …….. Agree to participate in this study and to willingly provide information regarding the care I provide to post natal mothers in the maternity ward. The details of the study has been explained to me and I have understood that I may withdraw at any stage of the investigation including information I will have already provided without giving reasons and without explanation of any kind.

Signed …… Date……

Witness …… Date ……..

APPENDIX II

QUESTIONNAIRE FOR CLINICIANS

Section1. Socio Demographic data

No	Question		Coding category
Q1	What is your age in completed years	1 2 3 4 5 6 7 8 9 10	<19 20-24 25-29 30-34 35-39 40-44 45-49 50-54 55-59 60 and above
Q2	Sex	1 2	Male Female
Q3	What is your highest level of education?	1 2 3 4 5	Certificate Diploma Bachelor's degree Master's degree PHD
Q4	What is your title	1 2 3 4 5 6 7 8	Enrolled nurse /midwife Registered nurse / midwife Nurse intern Clinical officer intern Medical officer intern Medical officer Obstetrician gynecologist Other (specify)…… ……..
Q5	Do you hold any leadership position in maternity department?	1 2 3 4 5	Nurse in charge Maternity unit manager Medical officer in charge Obstetrician/gynecologist in charge/ Head of division None of the above
Q6	How long have you been working in maternity? (including Previous facilities)	1 2 3 4	<1 year 1-5 years 6-10 years >10 years

Section 2. Level of staffing & operation

No	Question		Coding category
Q1	There are adequate clinicians in the hospital for provision of post natal care	1 2 3 4	Strongly agree Agree Disagree Strongly disagree
Q2	How can the situation be improved?	1 2 3 4 5	Training Improved supervision Developing management protocols Improved scheduling Employment of more staff
Q3	What can you do as an individual to improve the care?	1 2 3 4	Access WHO and NGQOPNC guidelines Read more about post natal care from books Learn More from my superiors Other …….
Q4	I usually spend more time with a mother in labor than a post natal mother	1 2 3 4	Strongly agree Agree Disagree Strongly disagree

Section 3. Availability/awareness/training on post natal care guidelines

No	Question		Coding category
Q1	Are you aware of any guidelines on post natal care?	1 2 3	WHO guidelines Kenya national guidelines for quality obstetric and peri natal care (NGQOPNC) Other ……
Q2	Are you aware whether there are any of the guidelines in maternity unit?	1 2	Yes (specify where) N0
Q3	Have you ever been trained/ oriented on Post Natal care apart from professional training?	1 2	Yes No (skip to Q5)
Q4	If yes for Q3 , where?	1 2 3	Workshop/seminar On job training –this facility On job training – other facility Other (specify)……
Q5	Do you think post natal care	1	Strongly agree

	has been given the right attention by clinicians in this department?	2 3 4	Agree Disagree Strongly disagree
Q6	Explain your answer for Q 5		

Section4. Post natal care practices – mother care

Q1	In your daily practice of postnatal care of the mother in the maternity ward do you always check for:	1 2 3 4 5 6 7 8 9 10 11	Vaginal bleeding – Agree/disagree Uterine contraction- Agree/disagree Episiotomy care- Agree/disagree Fundal height- Agree/disagree Temperature – Agree/disagree Heart rate- Agree/Disagree Blood pressure – Agree/ disagree Bladder emptying- Agree/disagree Psychological/Emotional status- Agree/disagree Condition of the breast – Agree/disagree HIV status – Agree/disagree
Q2	Do you take time to pass health promotion messages to the mother on:	1 2 3 4 5 6	Nutrition – Agree/disagree Personal hygiene- Agree/disagree Family planning – Agree/disagree Safe sex- Agree/disagree Use of ITN- Agree/disagree Gentle exercise – Agree/disagree
Q3	You assist the mother & her family to develop personal post natal care plan	1 2	Agree Disagree
Q4	You normally prepare your clients (Post natal mothers) to handle possible complications at home?	1 2	Agree Disagree
Q5	You always document everything you have done for your patients	1 2 3 4	Strongly Agree Agree Disagree Strongly disagree
Q6	Given your level of responsibility in this department what step do you take when you notice above examinations/health messages are not done	1 2 3	Personally perform the examinations/activities Instruct someone to perform them Find out reasons why and ensure patient safety by ensuring they are performed
Q6	What is the commonest reason for not performing such examinations in the department?	1 2 3	Shortage of clinicians They are not part of daily emphasis lack of equipment

		4	insufficient training
Q7	Who should counsel the mother on danger signs, breast feeding, nutrition, hygiene, family planning, etc	1 2 3	Nurse/ midwife Clinical officer Doctor
Q8	I always ensure post natal mothers are observed in the maternity unit for at least 24 hours before discharge	1 2	Agree Disagree
Q9	Post natal follow up appointments are made before client is discharged?	1 2 3 4	Strongly agree Agree Disagree Strongly disagree
Q10	If yes when do they attend the clinic?	1 2 3	2 weeks 6 weeks 6 months
Q10	Is there a program by your department to conduct home visits for antenatal mothers at six weeks?	1 2 3	Program in place Program not in place Program in place but not implemented

Section 5. Danger signs in the baby

No	Question		Coding category
Q1	Assessment of the Baby is part of post natal care?	1 2 3 4	Strongly Agree Agree Disagree Strongly disagree
Q2	In post natal care of the baby, I always check for the following danger signs	1 2 3 4 5 6	Breast feeding – Agree/disagree Convulsion – Agree/ disagree Fever – Agree/disagree Respiratory rate- Agree/disagree Jaundice – Agree/ disagree infected cord – Agree/disagree
Q3	I always teach the mother to delay bathing until 24 hours after birth	1. 2	Agree disagree
Q4	First examination of the newborn is always performed in this unit	1 2	Agree Disagree
Q5	In my daily practice I perform examination of the baby	1 2	Agree Disagree
Q5	I teach the mother on how to identify danger signs in the baby and what action to take	1 2	Agree disagree

APENDIX III

CHECK LIST FOR DOCUMENTED CARE (PATIENT FILE)

No	Procedure		Performance
1	Per vaginal bleeding/ lochia loss		Nurse midwife Nurse intern Clinical officer intern Medical officer intern Medical officer Obstetrician /gynecologist
2	Fundal height/Involution		Nurse midwife Nurse intern Clinical officer Medical officer intern Medical officer Obstetrician gynecologist
3	State of perineum/ episiotomy		Documented /not documented
4	State of C/S wound		Documented/ not documented
3	Pulse rate		Documented / not documented
4	BP		Documented/ not documented
5	Temperature		Documented / not documented
6	Respiration		Documented / not documented
7	Urine void		Documented/ not documented
8	Condition of breast		Documented / not documented
9	Counseling on nutrition, danger signs of mother and baby ,breast feeding, cord care, family planning ,return to sexual activity		Documented / not documented
11	Folic acid and iron supplementation		Documented / not documented
12	Prophylactic antibiotic		Documented /not documented
13	Assessment of psychological state		Documented / not documented
14	HIV status		Documented / not documented
15	Linkage for home visiting		Documented/ not documented
	Danger signs on baby		Documented/ not documented
1	Temperature		Documented / not documented
2	Respiratory rate		Documented/ not documented
3	Apex Beat		Documented/not documented
4	Not breast feeding		Documented/not documented
5	Convulsions		Documented / not documented
6	Jaundice		Documented / not documented
7	Spontaneous movement		Documented / not documented
8	Comprehensive examination of baby		Documented / not documented
9	Cord care		Documented / not documented
10	Delay in bathing up to 24 hours		Documented / not documented
11	immunization		Documented / not documented

APENDIX IV

CONSENT FORM FOR MOTHERS

Introduction

My name is Ephraim Kayi Odeny; I'm a post graduate student at the University of Eastern Africa Baraton. As part of my degree program, I'm conducting a study to assess the practices by clinicians on post natal care in Jaramogi Oginga Odinga Teaching and Referral Hospital. You have been randomly selected to participate.
I would like to kindly request your consent to participate but before you decide to participate or not, I would like to explain what it is.

The objective of the study is to assess the clinician practices in line with the Kenya national guidelines for quality obstetric and perinatal care and world health organization's guidelines on post natal care at Jaramogi Oginga Odinga Teaching and referral hospital. As a participant, you will be asked questions to verify what the clinicians did for you during your stay and whether you are prepared for the care of yourself and your baby at home. You may also be followed up at home for a home visit to determine your state of health and provide further care. This will inform the stakeholders on the use of guidelines and need for further training of clinicians and revision of guidelines to provide better care.
There will be no benefits (material, monetary or otherwise) for you but the information you give will help in completion of this study and improve service provision through improved service provision, training and revision of guideline.
There are no risks involved in participating in this study, the information you give is anonymous and will be kept in confidence.
You are free to decline to answer any question or discontinue your participation at any stage of the interaction; however your honest response to these questions will enable the researcher to understand how you were treated by the clinicians.
If you have any questions during and after the study you can contact:
Ephraim Kayi Odeny 0722291946 email ephraim.odeny@gmail.com
Dr Jackie Obey – 0771276360 Ethical committee UEAB
Dr. Wafula - 0723245127 Ethical Committee JOOTRH
Do you have any questions?

Consent

I have read/ explained to the details of the study and I have understood. I hereby consent to participate voluntarily in this study.

Name of participant _____
Signature of participant _____ Date_____

Name of researcher/ research assistant _____
Signature _____ date _____

APPENDIX V

QUESTIONAIRE FOR THE POST NATAL MOTHER ON DISCHARGE

Serial No ……

Client study number…….

Section 1 Demographic information

No	Question		Coding category
1	What is your age bracket?	1 2 3 4 5	10 -15 yrs 16 -20yrs 21-30 yrs 31 -40 yrs 41- 50 yrs
2	What is your marital status?	1 2 3 4 5	Single Married Separated Widow Divorced
3	What is your highest level of education?	1 2 3 4 5 6 7 8 9	Primary incomplete (indicate class) Primary completed Secondary school incomplete (indicate) Secondary completed College certificate College diploma Bachelors degree Masters degree PHD
4	What is your occupation?	1 2 3 4	Unemployed In formal employment Casual work Business
5	What is your income bracket per month?	1	Ksh 1000- 5000 Ksh 6000 -10, 000 Ksh 11,000 – 15000 Ksh 16,000 – 20,000 > 21,000
6	How many previous births have you had?	1 2 3	None (skip to Q 8) One Two

		4 5 6	Three Four Other (specify
7	How many are alive?	1	No…….
8	Mode of delivery	1 2 3 4	SVD Breach Assisted vaginal delivery Caesarean section
9	How long did you stay in hospital after delivery?	1 2 3 4 5	<12 hrs 13 -24 hrs 25 -48 Hrs 49 – 72 hrs >72 hrs
10	If more than 24 hours why?	1 2 3 4	Lack of user fee Child in new born unit Mother developed complications Caesarean section

Sec 2: Post Natal care Knowledge information

No	Question		Coding category
Q1	After how long did you initiate breast feeding?	1 2 3 4 5	Within one hour Within 6 hours Within 12 hours Within 24 hours Other (specify)
Q2	Were you assisted/ shown how to breast feed by the health worker?	1 2	Yes No
Q3	Were you advised on exclusive breast feeding?	1 2	Yes No
Q4	Were you advised on when to resume sex?	1 2	Yes No
Q5	Were you advised on signs that you should report on yourself?	1 2	Yes No
Q6	Which of the following was mentioned by the health worker?	1 2 3 4 5 6 7 8 9	Engorged breast/ cracked nipples Fever/ abdominal pain/ foul smelling discharge (infection) Extreme tiredness(Anemia) Heavy vaginal bleeding (PPH) Urinary or fecal incontinence (Obstetric fistula) Severe sadness, unable to take care of baby or thoughts of harming self (Postpartum Depression) Severe headache, blurred vision, high Blood pressure (Pre-eclampsia) Convulsions or fits (Eclampsia)
Q7	Were you told where to go for care	1	Yes

	in case you notice the signs above?	2	No
Q8	Did the health care provider talk to you about continuing with your previous drugs & sleeping under ITN (antimalarial /antibiotics/ARVs)	1 2	Yes No
Q8	Were you counseled by the health worker about family planning?	1 2	Yes No
Q9	Were you advised on Nutrition and fluid intake?	1 2	Yes No
Q10	Were you advised on how to maintain personal hygiene? (care of episiotomy/ C/S wound)	1 2	Yes No
Q11	Were you advised on adequate rest and sleep?	1 2	Yes No
Q12	Were you advised on frequent emptying of bladder?	1 2	Yes No
Q13	Were you advised about pelvic floor exercises?	1 2	Yes No
Q14	When were you told you should be coming back to the clinic for your personal check up?	1 2 3 4 5	Not advised After 1-2 weeks Anytime if danger signs present 4-6 weeks after birth 4-6 months after birth

Baby care

Q15	Were you advised on delay of first bath for 24 hours	1 2	Yes No
Q16	Were you shown how to do cord care?	1 2	Yes No
Q17	Were you shown how to Bath the baby and maintain hygiene?	1 2	Yes No
Q18	Were you advised on danger signs for the baby?	1 2	Yes No
Q19	Which of the following was mentioned by health worker as danger signs?	1 2 3 4	Baby refuses to feed/ poor suckling Baby feels very hot or very cold Difficulty breathing(grunting, wheezing, fast breathing, blueness of extremities) Wet cord with blood, pus or swelling
		5 6 7 8	Swollen eyes, pus from eyes or ears Yellow body, eyes or palms Lethargy/ floppy Diarrhea
Q20	Was your child immunized? (BCG & birth polio)	1 2	Yes No
Q21	Were you advised about subsequent	1 2	Yes No

	immunizations?		
Q22	Were you advised on importance of growth monitoring?	1 2	Yes No
Q23	Were you advised on when to return the baby to clinic?	1 2 3 4	After 2 weeks After 6 weeks When danger signs present Other (specify) ……
Q24	Were you advised to ensure baby sleeps under ITN?	1 2	Yes No
Q25	How will you rate the care given to you from delivery to discharge	1 2 3 4 5	Excellent Very good Good Fair Unsatisfactory
Q26	Are you adequately prepared to take care of yourself / baby at home?	1	Yes No Explain your answer …….
Q27	Which of the following health care providers was very helpful to you during your stay?	1 2 3 4	Nurse in charge Nurse/midwife Clinical officer Doctor
Q28	How did you identify them according to those categories?	1 2 3 4	Name tag They introduced themselves I asked them about their positions Other (specify) ……..
Q29	What would you suggest to be improved with regards to care for mothers and their babies in this unit?	1 2 3 4 5 6 7	Communication Food & fluid provisions Education on danger signs Environmental hygiene Provision of linen Response to concerns Other (specify)…….

APPENDIX VI

CONSENT FOR MOTHERS IN LUO

An iluonga ni Ephraim Odeny, atimo tiegruok mar rito jotuo e mbalariany mar Baraton. Atimo nonro mar ngeyo kaka jogo matimo thieth e hospital mar Jaramogi (Rassia) timo thieth ne mine ma onyuol kod nyithindgi kaluwore gi chenro ma oketi gi duol mar thieth mar sirkal mar Kenya kod duol mar thieth moriwo piny ngima. Kaka mama ma onyuol e hospital ka ibiro penji kit thieth ma otimni kod kaka oiki mondo iritri kod nyathini bang ka isewuok e od thieth kod kaka inyalo ngeyo ka in kod ranyisi masiemo ni ngimani kod mar nyathi rach mondo idog e od thieth. Bende biro dwarore mondo olimi e odi mondo omed rango kaka ngimani chal kendo med timoni thieth kaka owinjore.

Onge chudo moro amora kata mich ma ibiro miyi kuom duoko penjogi to kata kamano, duoko ma ichiwo biro konyo e loso chenro ma tayo thieth mar joma mine monyuol kendo keto kare yor thieth mowinjore e Kenya kod piny mangima.

Nonro ni ok nyal keloni hinyruok moro amora e ngimani, weche duto ma iwacho gin siri kendo onge ngato machielo ma biro ngeyo nikech nyingi ok ondikie. Inyalo weyo duoko penjo moro amora kaka wuok e nonro ni sama iyiero mar timo kamano.

Ka in kod penjo moro amora to inyalo gocho ne joma oket nembnigi mag simo piny ka

Ephraim Odeny 0722291946- Jatim nonro

Dr. Jacky Obey – 0771276360 Jatelo mar weche nonro Mbalariany mar Baraton

Dr. Carolyne Wafula- - 0723245127 Jatelo mar weche nonro Od thieth mar Rassia

AYIE

Asesomo/ Osepimna kit nonro ma itimo kendo ayie ni abiro bet achiel kuom joma itimo nonro kuome.

Nyinga …….

Seyi …… Tarik …….

Janeno ……..

Tarik……..

APPENDIX VII

PENJO MAG JOMA MINE MOSENYUOL

No mar form……

Namba mar mama moyie Nonro …….

Migawo motelo

No	Question		Coding category
1	Hiki nitiere e tieng mane?	1 2 3 4 5	10 -15 yrs 16 -20yrs 21-30 yrs 31 -40 yrs 41- 50 yrs
2	Nonro mari mar kend?	1 2 3 4 5	Pok okenda Okenda Okenda to wagwenyore Chi liel Wawere gi jaoda
3	Isomo nyaka kanye?	1 2 3 4 5 6 7 8 9	Ok atieko primar (nyis clas) Atieko primar Ok atieko sekondar (nyis clas) Atieko sekondar Atimo certificate course Diploma Degree Masters PHD
4	Tiji mapile en ango?	1 2 3 4	Aonge tich Jua Kali Atimo Kibarua Business
5	Pesa ma inwango e dwe rom nade?	1	Ksh 1000- 5000 Ksh 6000 -10, 000 Ksh 11,000 – 15000 Ksh 16,000 – 20,000 > 21,000
6	Isenyuol didi ka waweyo masani?	1 2 3 4 5 6	None (skip to Q 8) One Two Three Four Other (specify
7	Nyithindo adi mangima?	1	No…….
8	Ne inyuol gi yo mane	1 2	Wi Nyathi owuok mokungo Nyathi owuok gi tiende/ siandane

		3 4	Oywa nyathi Oyanga ogol nyathi
9	Isebet e od thieth ndalo adi?	1 2 3 4 5	Tin ne seche apar gi ariyo Seche 13 -24 Seche 25 -48 Seche 49 – 72 Moloyo seche72
10	Ka isebet moingo seche 24, en nikech ango'?	1 2 3 4	Aonge pesa mar thieth Nyathina nitiere e nasari Ne an kod tuo mobiro bang nyuol Ne oyang'a

Sec 2: Ngeyo kuom ritruok bang Nyuol

No	**Question**		**Coding category**
Q1	Ne ichako dhodho nyathi bang seche adi?	1 2 3 4 5	Ei saa achiel mokwongo Ei seche 6 Ei seche 12 Ei seche 24 Seche mamoko…….
Q2	Bende ne onyisi kaka onego idhodh nyathi gi jachiw thieth?	1 2	Ee Ooyo
Q3	Bende nende opuonji ni nyathi ok onego mi chiemo moro mak mana dhothkuom dueche auchiel mokwongo?	1 2	Ee Ooyo
Q4	Bende ne opuonji seche ma owinjori ichak nindo gi jaodi?	1 2	Ee Ooyo
Q5	Bende ne onyisi ranyisi ma ka ineno kuomi to onego idhi e od thieth?	1 2	Ee Ooyo
Q6	En mane kuom ranyisi gi mane jachiw thieth opuonji ni ka ineno to idhi e od thieth?	1 2 3 4 5 6 7 8 9	Thuno mokuot to lit kata mobarore Del maliet/ ich maremo/ tutu mangwe wuoke duongni (infection) Olo mangeny(Anemia) Remo mawuok mathoth e duongni Lach kata oko maduong mawuok kende (Obstetric fistula) (bendo ka in gi parruok mangeny kata mar hinyo nyathi kata in iwuonn(Postpartum Depression) Wich mabero, wang malil, presa mamalo (Pre-eclampsia) Goruok piny kendo rieruok (Eclampsia)
Q7	Bende ne onyisi kama onego idhiye ka ineno ranyisigi?	1 2	Ee Ooyo
Q8	Bende jachiw thieth nende owuoyo kodi kuom tieko yedhe duto	1 2	Ee Ooyo

	mimuonyo kod nindo e bwo net mothiedhi?		
Q8	Bende nende opuonji kuom komo nyuol?	1 2	Ee Ooyo
Q9	Bende nende opuonji kuom chiemo ma onego icham kod kaka onego imodh pi?	1 2	Ee Ooyo
Q10	Bende ne opuonji kaka onego irit ler mar dendi kama nigi adhola? (care of episiotomy/ C/S wound)	1 2	Ee Ooyo
Q11	Were you advised on adequate rest and sleep?	1 2	Yes No
Q12	Bende nende onyisi ni owinjore ila ka iwinjo ka lach ohewi?	1 2	Ee ooyo
Q13	Bende nende opuonji kaka onego itim orako majiwoleche mag yor nyuol?	1 2	Ee Ooyo
Q14	Nende onyisi ni onego iduog karango e clinic mar mine ma osenyuol?	1 2 3 4 5	Ok onyisa Bang jumbe 1-2 Samoro amora ma aneno ranyisi marach Bang jumbe 4-6 Bang dweche auchiel

Rito Nyathi

Q15	Bende nende onyisi ni ok onego iluk nyathi nyaka seche 24 rum?	1 2	Ee Ooyo
Q16	Bende ne opuonji kaka onego irit pend nyathi?	1 2	Ee Ooyo
Q17	Bende n opuonji kaka onego iluok nyathi?	1 2	Ee Ooyo
Q18	Bende ne onyisi kuom ranyisi manyiso ni nyathi tuo?	1 2	Ee ooyo
Q19	Magewa kuom magi mane onyisi kuom ngima nyathi?	1 2 3 4	Nyathi tamore chiemo/ ok dhodhi Dendnyathi liet kata ngich Nyathi ok yue maber(kore ruto, yueyo matek, tiendene gi luetene mbulu) Pend nyathi ngich, nigi remo, okuot
		5 6 7 8	Wenge nyathi okuot, wuok tutu, kata ite wuok tutu Dend nyathi olokore ratong, wengene kod luetenes Nyathi ool Diep
Q20	Bende ne ochuo nyathi e bade korachwich(chanjo) kod keto yath e dhoge?	1 2	Ee ooyo

	(BCG & birth polio)		
Q21	Bende nende onyisi kuom chanjo modong?	1 2	Ee Ooyo
Q22	Bende nende opuonji kuom ber mar pimo ratil mar nyathi dwe ka dwe?	1 2	Ee Ooyo
Q23	Bende ne ochiki odiechieng monego iduogie nyathu e clinic?	1 2 3 4	Bang wige 2 Bang wige 6 Ka ineno ranyisi moro mamoko ……
Q24	Bende nende onyisi ni nyathi nyaka nind e bwo net mothiedhi?	1 2	Ee Ooyo
Q25	Inyalo thieth mane omiyi gi nyathini chakre inyuol nyaka sani ne chal nade	1 2 3 4 5	Ber mogundho Ber ahinya Ber Ber matin Ok ber
Q26	Bende oiki mondo iritri kaachiel kod nyathini maber ka isedhi dala?	1	Ee Ooyo Wachie matin kuom ma …….
Q27	Kuom jothieth mane othiedhi, en mane kuom magi mane okonyi moloyo?	1 2 3 4	Nurse ma jatelo Nurse / jakony e yor nyuol Clinical officer Doctor
Q28	Nende ingeyogi nade ?	1 2 3 4	Name tag Nende ginyisa tijgi Nende apenjogi kuom tijgi mopogore ……..
Q29	Ango ma diher mondo otim mopogore kaluwore gi thieth mar mine monyuol kod nyithindgi?	1 2 3 4 5 6 7	Yo ma iwuoyoe kodgi chiemo & gik mimadho puonj kuom ranyisi manenore Loso aluora maler Gik ma inindoe Winjo kendo tieko dwach joma tuo Machielo mopogore…….

APPENDIX VIII

Study Budget

Sno.	Item	Unit	Unit cost	Total units	Total cost
1	**Internet access**	**Gigabites**	**500.00**	**20**	**10000**
2	**Typing**	**page**	**50.00**	**70**	**3500**
3	**photocopying**	**page**	**3.00**	**700**	**2100**
4	**ERC approval**	**No**	**10,000**	**1**	**10,000**
5	**Travelling cost**	**trips**	**2,000**	**10**	**20,000**
6	**Pilot study**	**No**	**5,000**	**1**	**5,000**
7	**Research assistants**	**No**	**30,000**	**3**	**90,000**
8	**Data analysis**	**No**	**20,000**	**1**	**20,000**
10	**Thesis document**	**No**	**6000**	**4**	**24,000**
11	**Thesis defense**	**No**	**4000**	**1**	**4,000**
12	**Home visits**	**No**	**100**	**50**	**5000**
13	**Total**				**183600**

STUDY TIMELINES

Item	May 2018	Octo 2019	October 2019	Nove 2019	Dec-Jan 2020	July 2021	July 2021
Proposal doc	→						
Proposal defense	→						
ERC approval		→					
Pilot study			→				
Data collection				→			
Data analysis					→		
Summarizing findings					→		
Thesis defence						→	
Final document							→

REPUBLIC OF KENYA

NATIONAL COMMISSION FOR
SCIENCE,TECHNOLOGY & INNOVATION

Ref No: **685923**

Date of Issue: **10/October/2019**

RESEARCH LICENSE

This is to Certify that Mr.. Ephraim Odeny of University of Eastern Africa, Baraton, has been licensed to conduct research in Kisumu on the topic: AN ASSESSMENT OF POST NATAL CARE PRACTICES BY CLINICIANS AT JARAMOGI OGINGA ODINGA TEACHING AND REFERRAL HOSPITAL for the period ending : 10/October/2020.

License No: **NACOSTI/P/19/1941**

685923

Applicant Identification Number

Director General
NATIONAL COMMISSION FOR
SCIENCE,TECHNOLOGY &
INNOVATION

Verification QR Code

NOTE: This is a computer generated License. To verify the authenticity of this document, Scan the QR Code using QR scanner application.

Telegrams: "MEDICAL", Kisumu
Telephone: 057-2020801/2020803/2020321
Fax: 057-2024337
E-mail: ercjootrh@gmail.com
When replying please quote

JARAMOGI OGINGA ODINGA TEACHING & REFERRAL HOSPITAL
P.O. BOX 849
KISUMU

Ref: ERC.IB/VOL.1/595

Date: 6th August, 2019

Ephraim Kayi Odeny

Dear Ephraim,

RE: FORMAL APPROVAL OF THE PROTOCOL STUDY ENTITLED:-
AN ASSESMENT OF POST NATAL CARE PRACTICES BY CLINICIANS AT JARAMOGI OGINGA ODINGA TEACHING AND REFERRAL HOSPITAL.

The JOOTRH ERC reviewed your protocol and found it ethically satisfactory. You are therefore permitted to commence your study immediately. Note that this approval is granted for a period of one year (w.e.f. 6th August, 2019 to 6th August, 2020). If it is necessary to proceed with this research beyond approved period, you will be required to apply for further extension to the committee.

Also note that you will be required to notify the committee of any protocol amendment(s), serious or unexpected outcomes related to the conduct of the study or termination for any reason.

In case the study site is JOOTRH, kindly report to the Chief Executive Officer before commencement of data collection.

Finally, note that you will also be required to share the findings of the study in both hard and soft copies upon completion.

The JOOTRH – IERC takes this opportunity to thank you for choosing the Institution and wishes you the best in your endeavours.

Yours sincerely,

WILBRODA N. MAKUNDA
SECRETARY- IERC
JOOTRH - KISUMU

OFFICE OF THE DIRECTOR OF GRADUATE STUDIES AND RESEARCH
UNIVERSITY OF EASTERN AFRICA, BARATON
P.O. BOX 2500-30100, Eldoret, Kenya, East Africa

B3252019 May 29, 2019

TO: Ephraim Kayi Odeny
School of Nursing
University of Eastern Africa Baraton

Dear Ephraim,

RE: An Assessment of Post Natal Care Practices by Clinicians at Jaramogi Oginga Odinga Teaching and Referral Hospital.

This is to inform you that the Research Ethics Committee (REC) of the University of Eastern Africa Baraton has reviewed and approved your above research proposal. Your application approval number is IERC/32/05/2019. The approval period is 29th May, 2019- 28th May, 2020.

This approval is subject to compliance with the following requirements;

i. Only approved documents including (informed consents, study instruments, MTA) will be used.
ii. All changes including (amendments, deviations, and violations) are submitted for review and approval by the Research Ethics Committee (REC) of the University of Eastern Africa Baraton.
iii. Death and life threatening problems and serious adverse events or unexpected adverse events whether related or unrelated to the study must be reported to the Research Ethics Committee (REC) of the University of Eastern Africa Baraton within 72 hours of notification.
iv. Any changes, anticipated or otherwise that may increase the risks or affected safety or welfare of study participants and others or affect the integrity of the research must be reported to the Research Ethics Committee (REC) of the University of Eastern Africa Baraton within 72 hours.
v. Clearance for export of biological specimens must be obtained from relevant institutions.
vi. Submission of a request for renewal of approval at least 60 days prior to expiry of the approval period. Attach a comprehensive progress report to support the renewal.
vii. Submission of an executive summary report within 90 days upon completion of the study to the Research Ethics Committee (REC) of the University of Eastern Africa Baraton.

Prior to commencing your study, you will be expected to obtain a research license from National Commission for Science, Technology and Innovation (NACOSTI) https://oris.nacosti.go.ke and also obtain other clearances needed.

Sincerely yours,

Prof. Jackie K. Obey, PhD
Chairperson, Research Ethics Committee

University of Eastern Africa, Baraton
29 MAY 2019
P. O. Box 2500-30100, ELDORET
Research Ethics Committee

REPUBLIC OF KENYA
COUNTY GOVERNMENT OF KISUMU

Telegrams: "PRO (MED)"
Tel: 254-057-2020105
Fax: 254-057-2023176
E-mail: kisumucoh@gmail.com

Chief Officer of Health & Sanitation
P.O. Box 721 – 40100,
Kisumu.

DEPARTMENT OF HEALTH & SANITATION

Our Ref: GN/80/VOL.I(76) **Date:** 16th October, 2019

To CEO
Jaramogi Oginga Odinga Teaching and Referral Hospital
P.O Box 849 – 40100
Kisumu

RE: ASSESSMENT OF POST NATAL CARE PRACTICES BY CLINICIANS AT JOOTRH

The above stated subject matters refers.

This is to inform you that the bearer of this letter (Mr. Ephraim Odeny) who is currently a student at School of Nursing, University of Eastern Africa Baraton, has been officially authorized by this office to carry out a research in your institution.

Kindly accord him the necessary assistance.

Thank you.

S. O. Sewe
Chief Officer
Health and Sanitation
Kisumu County

COUNTY GOVERNMENT OF KISUMU
DEPARTMENT OF HEALTH

Telephone: 057-2020801/2020803/2020321
Fax: 057-2024337
E-mail: medsuptnpgh@yahoo.com
ceo@jaramogireferral.go.ke
Website: www.jaramogireferral.go.ke
When replying please quote
ERC.IB/VOL.I/600
Ref: .....

JARAMOGI OGINGA ODINGA TEACHING &
REFERRAL HOSPITAL
P.O. BOX 849-40100
KISUMU

Date 18th October, 2019

Ephraim Kayi Odeny

Dear Ephraim

RE: PERMISSION TO COLLECT DATA

Following approval of protocol titled "An Assessment of Post Natal Care Practices by Clinicians at Jaramogi Oginga Odinga Teaching and Referral Hospital", you are hereby permitted to proceed with the activity.

Thank you.

Yours sincerely

CHIEF EXECUTIVE OFFICER
JARAMOGI OGINGA ODINGA TEACHING &
REFERRAL HOSPITAL(JOOTRH)
P.O. BOX 849-40100, KISUMU
DATE:.....

DR. OKOTH P.J.
CHIEF EXECUTIVE OFFICER
JOOTRH – KISUMU