

**COMPETENCE OF MIDWIVES IN PREVENTION AND
MANAGEMENT OF POSTPARTUM HAEMORRHAGE
AT KIAMBU DISTRICT HOSPITAL LABOUR WARD,
KIAMBU COUNTY.**

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for the award of Master of Science degree in nursing
(Obstetrics nursing and Midwifery) of the University of
Nairobi.**

2015

DECLARATION

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DEDICATION.

This work is dedicated to my family.

My husband Josphat for financial support, patience, prayers and encouragement kept me going throughout the study period.

To my daughters, Sharon and Winnie for being there for me and bearing with me during the study period.

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TABLE OF CONTENTS

DECLARATION-----	II
CERTIFICATE OF APPROVAL-----	III
DEDICATION-----	IV
ACKNOWLEDGEMENTS-----	V
TABLE OF CONTENTS -----	VI
LIST OF TABLES-----	X
LIST OF FIGURES-----	XI
ABBREVIATIONS-----	XII
DEFINITION OF TERMS-----	XIII
ABSTRACT-----	XIV
CHAPTER ONE: INTRODUCTION	
1.1 Background information-----	1
1.2 Statement of the problem-----	2
1.3 Justification-----	3
1.4 Study objectives-----	4
1.4.1 Broad objective-----	4
1.4.2 Specific objectives-----	5
1.5 Research questions -----	5
1.6 Research hypothesis -----	5
1.7 Expected benefits-----	5
1.8 Research variables -----	6
1.8.1 Independent variables-----	6
1.8.2 Dependent variables-----	6
1.9 Theoretical framework -----	6
1.10 Conceptual framework -----	8

CHAPTER TWO: LITERATURE REVIEW

2.1	Introduction-----	9
2.2	Prevention of PPH-----	9
2.3	Active management of third stage of labour-----	10
2.4	Management of PPH-----	13

CHAPTER THREE: RESEARCH METHODOLOGY

3.1	Introduction-----	14
3.2	Study design-----	14
3.3	Study area-----	14
3.4	Target population-----	15
3.5	Sample size determination-----	15
3.6	Sampling method-----	16
3.7	Sampling interval-----	17
3.8	Inclusion criteria-----	17
3.9	Exclusion criteria-----	17
3.10	Study instruments-----	17
3.11	Pre-testing-----	17
3.12	Selection and training of research assistants-----	18
3.13	Study procedure-----	18
3.14	Data management-----	19
3.14.1	Data cleaning and entry-----	19
3.14.2	Data analysis and presentation-----	20
3.15	Dissemination of findings-----	20
3.16	Ethical considerations-----	20
3.17	Study limitation-----	21

CHAPTER FOUR: RESULTS

4.0 Introduction-----	22
4.1: Socio demographic characteristics of the respondents-----	22
4.1.1 Professional qualification-----	23
4.1.2: Duration worked in a labour ward setting-----	24
4.1.3 Training attended by the respondents-----	25
4.2 Knowledge on prevention of postpartum haemorrhage-----	26
4.2.1 Use of prophylactic uterotonic agents, the prophylactic drug of choice, the dose and timing of administration -----	28
4.2.2 Timing for administration of uterotonic-----	29
4.2.3 Performing uterine massage and timing-----	30
4.2.4 Prevention of postpartum haemorrhage-----	31
4.3. Knowledge on management of PPH-----	32
4.3.1: Causes of PPH-----	33
4.3.2: First response on diagnosing PPH-----	34
4.4 Skills on handling PPH-----	35
4.5 Institutional factors-----	36
4.5.1 Ratio of patients to staff on duty appropriate-----	37
4.6 Results from the observation checklist-----	38
4.7: Association of socio demographic characteristics of midwives and the AMSTL practice-----	39
4.8: Association of knowledge and skills on prevention and management of PPH and competence of AMSTL practice-----	40

CHAPTER FIVE: DISCUSSION, CONCLUSION AND RECOMMENDATIONS.

5.0: Introduction-----	42
5.1: Socio demographic characteristics of the midwives-----	42

5.2: Knowledge on prevention and management of PPH-----	43
5.3: Skills in handling PPH if it occurs-----	45
5.4: Conclusion-----	46
5.5: Recommendations-----	46
References -----	48

Appendices:

1. A: Consent form information sheet for midwife-----	51
B: Consent form approval sheet for midwife-----	53
2 A: Ridhaa ya kushiriki katika utafiti-----	54
B: Ridhaa ya kushiriki-----	56
3. Questionnaire -----	57
4. Observation checklist-----	63
5. Approval letter from UON/KNH ethics committee-----	65
6. Letter of permission from Kiambu District Hospital-----	66

LIST OF TABLES

Table 1: Causes of maternal deaths at Kiambu District Hospital for (2010-2014).....	4
Table 2: Socio-demographic characteristics of the midwives.....	23
Table 3: Components of active management of third stage of labour.....	26
Table 4: Use of prophylactic uterotonic agents, drug of choice, the dose and timing of administration	29
Table 5: Prevention of PPH.....	31
Table 6: Causes of PPH.....	33
Table 7: Institutional factors.....	36
Table 8: Association of socio demographic characteristics of midwives and the AMSTL practice	39
Table 9: Association between knowledge and skills on prevention and management of PPH and competence of AMSTL practice.....	40

LIST OF FIGURES

Figure 1: Conceptual framework.....	8
Figure 2: Flow chart for management of Post partum haemorrhage.....	13
Figure 3: Years worked in a labour ward setting.....	24
Figure 4: Training attended by the respondents.....	26
Figure 5: Components of active management of third stage of labour.....	27
Figure 6: Timing of administration of uterotonic drug.....	29
Figure 7: Performing uterine massage and timing.....	30
Figure 8: Recognizing PPH after delivery.....	32
Figure 9: First response on diagnosing PPH.....	34
Figure 10: Skills on managing PPH.....	35
Figure 11: Overall score of the observation checklist.....	38

ACRONYMS/ABBREVIATIONS

AAFP -American academy of family physicians

AMSTL-Active management of third stage of labour.

AJM- African journal of midwifery

AOM-Association of ontario midwives

BeMOC-Basic emergency obstetric care

CCT- Controlled cord traction

CeMOC-Comprehensive emergency obstetric care

ERC- Ethics and research committee

ECHN- Enrolled Community Health Nurse

FIGO-International Federation of Gynecology and Obstetrics.

ICM-International council of midwives.

KDH- Kiambu District Hospital

KNH- Kenyatta National Hospital

KRCHN-Kenya Registered Community Health Nurse

PATH-Program for Appropriate Technology in Health

POPPHI-Prevention of post partum haemorrhage initiative

RCOG-Royal College of Obstetricians and Gynaecologists

PPH -post partum haemorrhage.

SPSS-Statistical package of social scientists.

UON-University of Nairobi

WHO-World health organization

OPERATIONAL DEFINITIONS

Postpartum haemorrhage: Blood loss of 500mls or more from the genital tract after vaginal delivery or any blood loss resulting in significant change of maternal condition.

Maternal mortality: The death of a woman while pregnant or within 42 days of termination of pregnancy, irrespective of the duration and site of the pregnancy, from any cause related to or aggravated by the pregnancy or its management but not from accidental or incidental causes.

Midwife: A responsible and accountable professional who works in partnership with women to give the necessary care during labour, delivery and the postpartum period.

Skilled birth attendant: An obstetrician, nurse or other care professional who provides basic and emergency healthcare services in collaboration with the midwife during labour, delivery and the postpartum period.

Prophylactic uterotonics: Drugs used for prevention of PPH.

Therapeutic uterotonics: Drugs used for management of PPH.

Third stage of labour: Period immediately after delivery of the baby up to the delivery of the placenta.

Competence: the knowledge and skills of midwives in prevention and management of PPH.

Active management of third stage of labour: A combination of three interrelated but independent processes- Intramuscular oxytocin 10 IU within one minute of delivery of the baby, controlled cord traction on the uterus for delivery of the placenta and uterine massage quarter hourly for two hours.

ABSTRACT:

Introduction: Post-partum haemorrhage (PPH) is a leading cause of maternal mortality worldwide and is responsible for 34% of maternal deaths in Africa. It is defined as blood loss of more than 500 ml following vaginal delivery or more than 1000 ml following caesarian delivery. Blood loss can occur during the first 24 hours (primary PPH) or from 24 hours up to 6 weeks after delivery (secondary PPH). Primary PPH classified by site is either placental or extra-placental bleeding. Secondary PPH is abnormal or excessive bleeding from the birth canal between 24 hours and 6 weeks postnatal.

Objectives: To establish midwives competencies in prevention and management of PPH: the knowledge and skills the midwives possess in prevention and management of PPH.

Study design: Descriptive study.

Setting: The study was conducted at labour ward of Kiambu district hospital.

Methods: After approval by UON/KNH ethics and research committee and permission from Kiambu District Hospital management, the principal investigator and one research assistant collected data by use of structured questionnaire and an observation checklist after obtaining consent from eligible participants. Data was stored in a password protected computer and a flash disc under the safe custody of the principal investigator. Data was analyzed by use of statistical package of social and scientists (SPSS) version 20.0.

Study results: During the study period from July to August 2015, 22 midwives working at Kiambu district hospital labour ward filled the questionnaire and 18 of this were observed while conducting deliveries. All midwives were females, 90.9% were KRCHN, 59.1% had worked in a

labour ward setting for 0-4 years and 68.2% were trained on active management of third stage of labour (AMSTL) which is key in prevention of PPH. Knowledge on components of AMSTL was 100% for administration of uterotonics, 95.5% for controlled cord traction and 86.4% for uterine massage. 77.3% had knowledge that administration of uterotonic should be within a minute of delivery of the infant but on observed deliveries only 13.6% managed to administer within this time. Uterotonic supplies were always present and physiological management of third stage of labour was not practiced. Competence on AMSTL practice on observed deliveries was 44.4%.

Conclusions: This study has yielded new knowledge on midwives knowledge and skills on prevention and management of PPH. Midwives had adequate knowledge on prevention of PPH (overall 90%) but need improvement in actual performance (skills) since majority of the mothers missed the preventive benefit associated with administration of prophylactic uterotonic within a minute of delivery of the infant.

Recommendations: Ensuring that midwives get current updates through the continuous professional development programme and availing guidelines on active management of third stage of labour at the labour ward would go a long way in improving performance.

CHAPTER ONE: INTRODUCTION

1.1 Background

Post-partum haemorrhage (PPH) is defined as blood loss of more than 500mls after a vaginal delivery or more than 1000mls after a caesarean section, it is the leading cause of maternal mortality worldwide and is responsible for 34% of maternal deaths in Africa. (Tako et al 2011).

Primary PPH is when it occurs during third stage or within 24 hours of delivery, secondary PPH when it occurs after the 24hrs up to 6 weeks postpartum. Most of the time, the midwife may be the only professional present when a haemorrhage occurs thus his or her prompt, competent action is crucial in controlling blood loss and reducing the risk of maternal morbidity or death (Fraser, et al 2006).

According to ICM (1992) a midwife is a person who, having been regularly admitted to a midwifery educational programme, duly recognized in the country in which it is located, has successfully completed the prescribed course of studies in midwifery and has acquired the requisite qualifications to be registered and/or legally licensed to practice midwifery(Fraser,et al 2006).

Among the Millennium development goals is to reduce maternal mortality by three-quarters by 2015. For this to be achieved, maternal deaths due to PPH must be significantly reduced.

Therefore, health workers in developing countries need to have access to appropriate medications and to be trained in relevant procedures (WHO, 2012).

Competencies refer to the discreet knowledge, skills, attitudes and experience required for individuals to perform their jobs correctly and proficiently (King and Sherrat, 2008).According to ICM (2010), competencies refers to the knowledge, skills and behaviours required of the midwife for safe practice in any setting. A midwife must be able to offer the necessary

supervision, care and advice to women in antenatal, labour and the postpartum period (Fraser et al, 2006).

1.2 Statement of the problem

Postpartum haemorrhage is the leading cause of maternal deaths globally (27%), followed by infections (11%), unsafe abortions (8%), high blood pressure during pregnancy (pre-eclampsia and eclampsia) (14%), obstructed labour (9%), blood clots/embolism (3%) and pre-existing conditions related to pregnancy and childbirth(28%)(Say et.al 2014).

A study done in central Kenya by Muchemi and Gichogo (2011) established the leading causes of maternal mortality in Kenya to be antenatal and postpartum hemorrhage, eclampsia, sepsis, ruptured uterus, and obstructed labor. Therefore establishing whether midwives have the knowledge and skills required to prevent or manage PPH if it occurs will be a step towards achieving the MDG no. 5 of improving maternal health by reducing the maternal deaths by $\frac{3}{4}$ by 2015.

Maternal death is mostly preventable and much more needs to be done to provide care to pregnant women (Say et.al 2014).PPH contributes to a higher proportion of maternal mortality in developing countries, especially in rural settings with limitations in infrastructure, availability of skilled birth attendants (SBAs), and uterotonics for prevention and management of PPH(Deepak, et al 2013)

Maternal mortality ratio for Kenya was estimated at 488 per 100,000 live births according to Kenya Demographic Health Survey of 2009 and these results indicate that maternal mortality remains high in Kenya (KDHS, 2008-9).

The fifth Millennium Development Goal is to reduce the maternal mortality ratio by 75 percent between 1990 and 2015. Currently the proportion of births managed by health professionals and the proportion delivered in a health facility are 44 percent and 43 percent, respectively (KDHS 2008-09).

Kiambu District Hospital handles on estimate 6,000 vaginal deliveries yearly and out of this at least 100 mothers develop PPH. In 2014, a total of 6290 vaginal deliveries were conducted, with 91 of the mothers developing PPH (Kiambu maternity register, 2014).

1.3 Justification

PPH is one of the obstetric emergencies that can be prevented if the correct skills are employed yet it remains the leading cause of maternal mortality globally. Prevention and management of PPH is crucial to averting this reality in an effort to achieve the millennium development goal number five of improving maternal health. This can be achieved if the midwives have the knowledge and skills required to prevent and manage PPH if it occurs. Midwives independently manage the antepartal, intrapartal, postpartum, and gynecological care of essentially normal women and their normal newborns. In care, the midwife is the primary care giver and co-ordinates the activities of the various paramedical personnel (Fraser et al, 2006)

For a period of five consecutive years prior to this study, (2010-2014), Kiambu District Hospital maternity records reviewed that a total of 38 maternal deaths occurred, 34 of them were reviewed and the causes in table 1.

Table 1: causes of maternal deaths at Kiambu District Hospital for (2010-2014)

Year	PPH cases	Maternal deaths	Causes of the maternal deaths						
			PPH	Anaemia	Eclampsia	APH	Sepsis	HIV	?cause
2010	110	10	5	3	1	0	0	0	0
2011	31	6	3	0	1	0	0	0	0
2012	60	11	6	0	0	2	1	1	1
2013	55	9	6	0	1	0	1	0	0
2014	91	2	1	1	0	0	0	0	0
Totals	347	38	21	4	3	2	2	1	1

From the table, PPH is the most common cause of maternal deaths (55%), followed by anaemia (10.5%) and eclampsia (8%). Other causes include APH, sepsis and HIV (Kiambu maternity register, 2014).

1.4 Study objectives

1.4.1 Broad objective.

To establish competence of midwives in prevention and management of postpartum haemorrhage at Kiambu district Hospital.

1.4.2 Specific objectives

1. To determine the socio demographic characteristics of the midwives
2. To determine midwives knowledge on prevention and management of postpartum haemorrhage.

3. To assess midwives skills on prevention of PPH.

1.5 Research questions.

1. What Knowledge do midwives working at Kiambu District Hospital possess for prevention and management of PPH.?

2. Do midwives working at Kiambu District Hospital have the necessary skills for prevention and management of PPH?

1.6 Research hypothesis

Competence of midwives does not influence prevention and management of PPH.

1.7 Expected benefits

Upon study completion, results can be utilized to improve on the current guidelines on prevention and management of PPH thus improving quality of care offered during labour and delivery. The results also contribute to the body of knowledge for midwifery practice and practicing midwives.

1.8 Research variable

A variable can be defined as an image, perception or concept that can be measured hence capable of taking on different values.

1.8.1 Dependent variable.

Prevention and management of PPH

1.8.2 Independent variables.

Midwives socio-demographic factors: Age, gender, professional qualifications, training and experience.

Competence: knowledge and skills

Institutional factors: Supplies, personnel and transport.

1.9 Theoretical Framework

The study used Dorothea Orem's model (parker, 2005). Self Care Deficit theory, one of the theories in Orem's model assumes that individuals take care of themselves when they are able, but when they are not able the nurse provides the assistance needed. The role of midwives entails working with the mothers from preconception to postpartum period.

Orem identifies five methods of helping that can be used: Acting for or doing for another, guiding and directing, providing physical or psychological support, providing and maintaining an environment that supports personal development and teaching.

Skilled birth attendants have the role of ensuring safe delivery by equipping themselves with the necessary knowledge and skills acquired through training and continuous professional development to keep abreast with current knowledge and technology. Midwives have a role of maintaining and controlling the positions and movements of mothers in labour since this improves the woman's experience and the outcome of labour (Fraser et al, 2006).

The theory identifies three nursing systems:

1. Wholly compensatory system; this is represented by a situation in which the individual is unable to engage in those self care actions hence depends on others for their continued existence and wellbeing. The role of midwife is to do all the activities of self care for the woman in pregnancy, labour and delivery. Pregnancy, labour and delivery are considered

normal thus the wholly compensatory applies in cases of complications e.g. if postpartum haemorrhage occurs and the woman develops shock.

2. Partially compensatory system; this is represented by a situation where both the nurse and the patient perform health care measures where the patient or the nurse may have a major role to play in the performance of care measures. The midwife collaborates with the mother in labour and assists when necessary e.g. assisting in feeding and emptying the bladder during labour.
3. Supportive educative system; in this system the person is able to perform or can and should learn to perform required measures of self care but cannot do so without assistance. The mother does all the care and the role of the midwife is to support her as a self care agent in terms of knowledge and skills. The midwife provides support and teaches the woman in labour on non-pharmacological methods of pain control e.g. breathing and relaxation exercises. The midwife may rub the woman's back during and if necessary, between contractions.

1.10 Conceptual framework

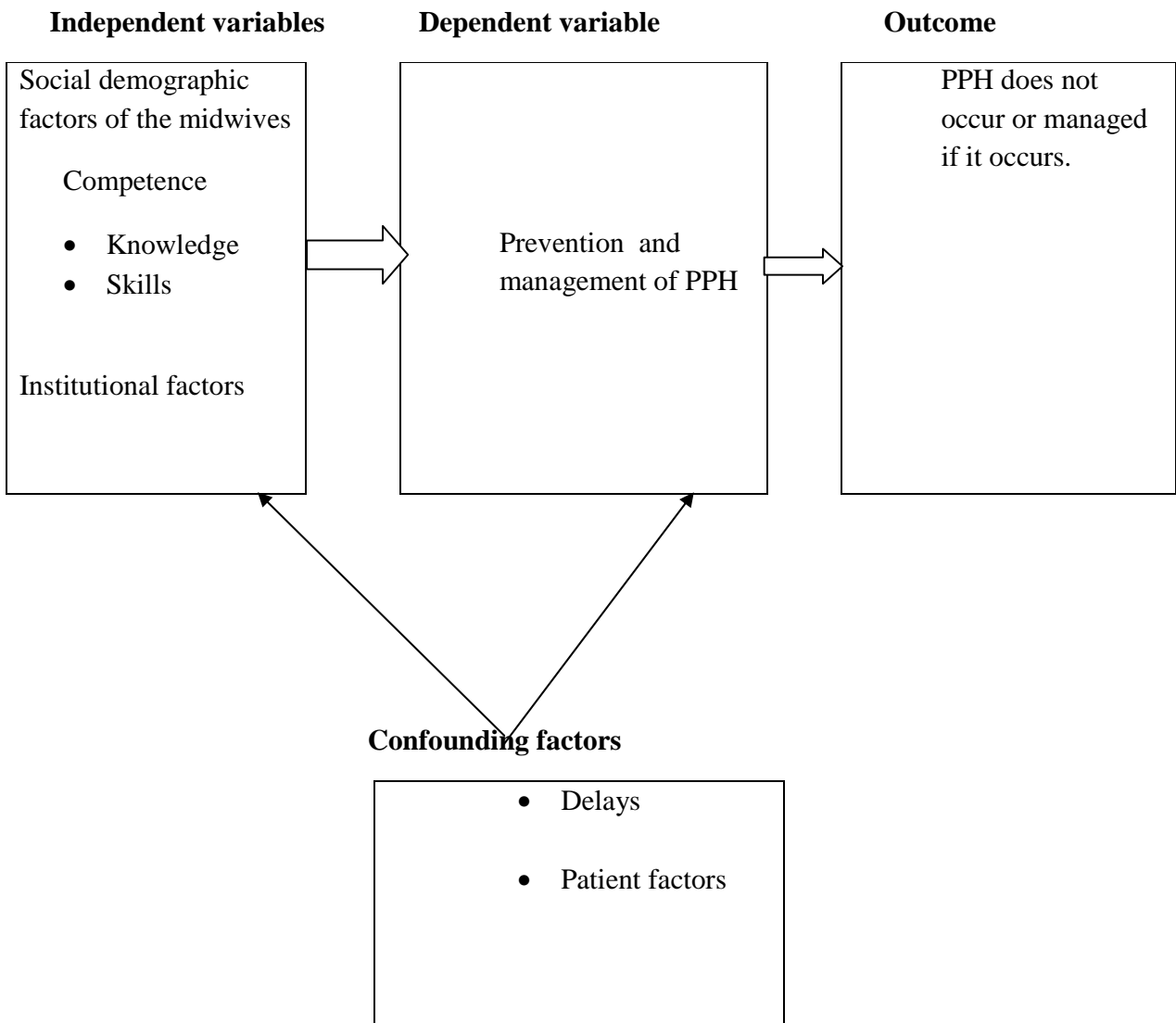


Figure 1: conceptual framework.

CHAPTER 2: LITERATURE REVIEW.

2.1 Introduction

PPH is defined as a blood loss of 500 mls or more within 24 hours after vaginal birth. It is the leading cause of maternal mortality in low-income countries and the primary cause of nearly one quarter of all maternal deaths globally. Most deaths resulting from PPH occur during the first 24 hours after birth (WHO, 2012). For clinical purposes any blood loss that has the potential to produce hemodynamic compromise is considered a PPH. The midwife plays a central role in prevention and treatment of postpartum hemorrhage (Versaevel and Darling, 2006).

ICM (2010) recognizes the midwife as a responsible and accountable professional who works in partnership with women to give the necessary support, care and advice during pregnancy, labour and the postpartum period, to conduct births on the midwife's own responsibility, and to provide care for the newborn and infant. Midwives provide an essential role in ensuring safe maternity care and their presence at a birth is key, but their skills and abilities are more important than their presence (Floyd, 2013).

2.2 Prevention of PPH.

Prevention of postpartum hemorrhage should begin in the antenatal period. Midwives should be able to assess women's risk factors at every antenatal visit and then partner with the women to plan care that is most appropriate. The antenatal risk factors include: Body mass index > 30 kg/m², previous postpartum hemorrhage, antepartum hemorrhage, placental abruption, placenta previa, multiple pregnancy, previous uterine surgery, anaemia, maternal age, uterine fibroids and history of retained placenta (Ward, 2012).

A study done by Tako et al (2014) on risk factors to PPH established that age and multiparity increased the risk of primary PPH, multiparity increased the risk fourfold and this compared well with another study done in Nigeria.

2.3 Active management of third stage of labour.

Active management of the third stage of labour is the cornerstone for the prevention of PPH and is associated with a substantial reduction in the occurrence of PPH when compared with expectant (physiological) management (WHO, 2012).

PPH is one of the few obstetric complications which has an effective preventive intervention. The active management of the third stage of labor (AMTSL) is an intervention with three components: administration of an uterotonic drug immediately following delivery, controlled cord traction, and fundal massage following delivery of the placenta (Deepak et al., 2013).

2.3.1 Administration of an uterotonic drug.

Injectable oxytocin has been recommended for routine use in the active management of the third stage of labour for all mothers in labour, but this requires skills, injection safety and sterile equipment. Training for skilled providers should ensure competency in safe injection and infection-prevention practices, as well as competency in active management of the third stage of labour as a routine in all childbirths (Mathai et al., 2007).

A Cochrane data base systematic review done by Westhoff et al (2013) on prophylactic oxytocin for the third stage of labour to prevent PPH concluded that administration of prophylactic of oxytocin at any dose reduced the risk of PPH and the need of therapeutic uterotonics. To achieve maximal benefit providers may opt to implement a practice of giving prophylactic oxytocin as

part of the active management of the third stage of labour at a dose of 10 IU given as an IV bolus.

Mfinanga et al (2009) in a national survey in Tanzania on health-facility based active management of third stage of labour observed correct practice of AMSTL in only 7% of the 251 deliveries, but when the administration of prophylactic oxytocin was relaxed to within three minutes, the percentage increased to 17%, an indication that providers lacked knowledge on active management of third stage of labour.

2.3.2. Controlled cord traction (CCT).

This component of active management is sometimes overlooked in the research on third stage management. During controlled cord traction, the mother may be asked to push to assist expulsion especially when the cord is beginning to separate and the midwife wishes to use minimal traction in facilitating expulsion. When the placenta begins to appear at the introitus, the non-dominant hand continues to guard the uterus by applying suprapubic pressure slightly toward the umbilicus until the placenta is completely expelled. (Versaevel and Darling, 2006).

A systematic review done by Hofmeyr et al (2015) to evaluate the effects of controlled cord traction during the third stage of labour, either with or without conventional active management concluded that CCT can reduce the risk of manual removal of the placenta in some circumstances, and evidence exists that CCT can be offered routinely during the third stage of labour if the birth attendant has the necessary skills.

2.3.3. Uterine massage

Uterine massage is done immediately after delivery of the placenta and membranes until it is firm. This stimulates uterine contractions and helps to prevent PPH. After the massage, it is important to ensure that the uterus does not relax again. Uterine massage should be done every fifteen minutes for two hours, therefore it is necessary to teach the woman how to massage her own uterus and ask her to call if her uterus is soft (POPPHI, 2007).

2.3.4. Skills for prevention and management of PPH.

WHO (2014) has categorized the skills for preventing and managing of PPH into general and specific. The specific include: identification of the risk factors to PPH, management of the third stage of labour, massaging the uterus and expelling clots after delivery of the placenta, suturing perineal tears and episiotomies, repair of cervical tears and manual removal of the placenta.

2.4 Management of PPH

Diagnosing PPH begins with the recognition of excessive bleeding followed by methodic examination to determine its cause. Early recognition, systematic evaluation and treatment, and prompt fluid resuscitation minimize the potentially serious outcomes associated with postpartum haemorrhage (Anderson and Etches 2007). Figure 1 shows the steps in managing PPH putting into consideration the causes.

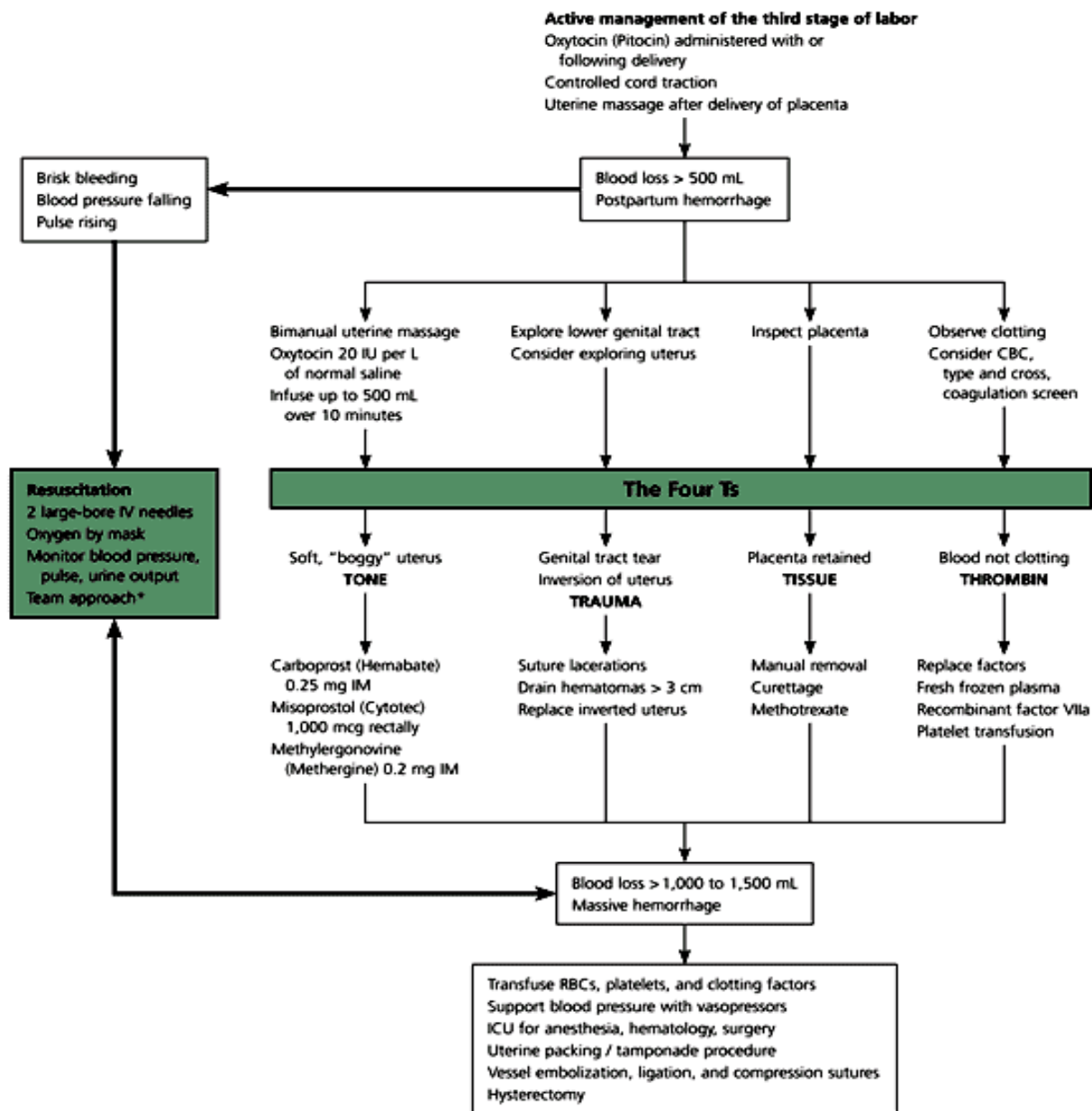


Figure 2. Adopted from Anderson and Etches, 2007

Algorithm for management of postpartum hemorrhage. Many of the steps involved in diagnosing and treating postpartum hemorrhage must be undertaken simultaneously. Although the steps in maternal resuscitation are consistent (bold arrows) other actions may differ based on the actual cause. (IV = intravenous; IU = international units; CBC = complete blood count; IM = intramuscularly; RBC = red blood cells; ICU = intensive care unit)

CHAPTER 3: RESEARCH METHODOLOGY

3.1 Introduction

This chapter deals with methodology i.e. the procedures that will be used in conducting the study. It includes study design, study area, study population, sample size, sampling method, pre-test study, data collection tools, data analysis and presentation.

3.2 Study design

A descriptive study to establish the midwives competence in prevention and management of PPH.

3.3 Study area.

The study was conducted at Kiambu level four District Hospital, Kiambu County. It is located along kiambu road approximately 15 kilometers from Nairobi. The Hospital was built by Colonial Government under the County Council in 1925, was under a European heading ten members of staff. In 1956, Tuberculosis (TB) wing was built in order to isolate TB patients.

After Independence in 1963, the Kenya Government took over the Hospital Administration from Colonial County Council through the Central Government and the Local Government. In 1969; the late Mzee Jomo Kenyatta laid the foundation stone for a new Maternity wing, Out-Patient department and Paediatric ward. In 1970, the Ministry of Health took over the full control of the Hospital, including the T.B. wing from the Local Government. In 1984, his Excellency President Daniel Arap Moi officially opened Nyayo Wards with a capacity of 144 beds. In 2013 a modern maternity wing was completed with a capacity of 100 beds.

Currently, the Hospital is one of the county teaching and referral Hospitals, with a bed capacity of 393 beds and catchment population of 101,596 people. Of this, 28,305 are women of child bearing age (15-49 years) and 2,794 estimated pregnant women.

Kiambu Maternity unit has a bed capacity of 100 beds, admits on average 25 patients and conducts on average 500 vaginal deliveries monthly. It also serves clients from neighboring counties like Nairobi, Murang'a and Machakos. Currently the staffs working at Kiambu labour ward are 26 midwives, 3 medical officer interns, 1 medical doctor and 1 obstetrics and gynecology consultant.

3.4 Target population.

The study population was midwives working at Kiambu District Hospital during the months of July and August.

3.5 Sample size determination.

The following formula by Fisher et.al (1998) was used to calculate the sample size (Mugenda & Mugenda 1999).

$$n=Z^2pq/d^2$$

Where,

n=the desired sample size (if the target population is >10,000).

z=95% confidence interval (1.96).

p=the proportion in the target population estimated to have the characteristics being measured (assumed to be 50%).

$$q=1-p$$

d=the level of statistical significance

$$n = (1.96)^2 (0.5) (0.5) / (0.05)^2 = 384.16$$

Since the study population of 26 midwives is less than 10,000, the alternative formula was used as follows

$$nf = n / (1 + n/N)$$

Where,

nf =Desired sample population (when population is less than 10,000)

n =Desired sample size (when population is more than 10,000)

N= the estimate of the population size

$$384.16 / (1 + 384.16/26)$$

$$= 384.16 / 14.81$$

$$= 25.9$$

$$= 26$$

All the 26 midwives were included.

3.6 Sampling method

The study used purposive sampling of all midwives in KDH labour ward. All midwives who met the inclusion criteria were included in the study.

3.7 Sampling interval

Sampling interval was calculated by dividing the total study population by sample size i.e.

Sampling interval $n = \text{total study population} / \text{sample size}$

$$= 26 / 26$$

$$= 1$$

Estimated sample interval is approximately 1. Therefore, all midwives who met the inclusion criteria were included in the study.

3.8 Inclusion criteria

The study included all midwives who had worked for at least three months at Kiambu District Hospital labour ward at the time of study and consented to participate in the study.

3.9 Exclusion criteria

This study excluded those midwives who were on leave during the study period, those who had worked for less than a month and those who did not consent to participate in the study.

It also excluded other skilled birth attendants working in labour ward.

3.10 Study instruments/tools

A structured questionnaire (appendix 3) and an observation checklist (appendix 4) were used to aid in data collection.

3.11 Pre-testing of study instruments

The study tools were pre-tested in the labour ward of Mama Lucy District Hospital, Nairobi County. Pre-testing was done by administering the questionnaire to 4 midwives selected

randomly to represent 10% of the actual population recommended for pre-testing the questionnaire to ensure validity (Czaja & Blair, 2005) and 8 observation checklists to help refine the study tools for reliability and validity. The pre-test helped the researcher to reorganize the questions, make them better understood and yield the intended meaning. The results were not part of the study findings.

3.12 Selection and training of research assistant.

One research assistant was identified to assist in the collection of data. She was a qualified registered nurse with midwifery knowledge and experience, working at Kiambu district Hospital. The researcher explained to her the purpose of study, objectives and the benefits of the study and also trained her on how to use the data collection tools prior to data collection.

3.13 Study procedure

For this study data was collected by use of a questionnaire and an observation checklist.

Questionnaire: This was a structured questionnaire with sections on socio demographic characteristics of the midwives, knowledge on prevention and management of PPH, knowledge on skills they possess on management of PPH if it occurs. It was a self administered questionnaire to be filled on average 10-15 minutes by each midwife who consented to participate in the study.

Observation checklist: This was to observe the actual skills (practice) midwives employed during second and third stage of labour with interest on the components of active management of third stage of labour and was to be filled by the researcher or the assistant as observed. For the checklist to be administered, the midwife monitored a mother in active phase of labour with singleton pregnancy at term with no bad obstetric history. Mother's in labour gave written

informed consent for observations to be done and on average each observation took 30minutes during the second and third stage of labour.

The researcher and research assistant introduced themselves to the ward in-charge of Kiambu District Hospital labour ward and provided a copy of authentication from KNH/UON-ERC and from the hospital administration. The ward in charge then introduced the researcher to midwives on duty who in turn introduced the research assistant and briefed them about the study. Each midwife was then approached individually by the researcher or the assistant for written informed consent only after reading the consent information sheet for details about the study, any question and all concerns addressed. Once written informed consent was obtained, the midwife then filled 10-15 minutes questionnaire. For every midwife who filled a questionnaire, the same midwife was observed while conducting three deliveries and the same code used in the questionnaire was used for the observation checklist. Midwives were aware of being observed, however to minimize bias, they were not allowed to have details of the observation checklist. All questionnaires and observation checklists were kept under lock and key for security and confidentiality of obtained information.

3.14 Data management

3.14.1 Data collection, cleaning and entry

Data collection was done from 28th July to 24th august 2015. The researcher or assistant checked the questionnaires for completeness and any information missing obtained from the respondent before moving to the next respondent. The researcher or assistant ensured the observation checklist was complete and retained the same code for each midwife. The data was coded and entered into the SPSS program for analysis.

Data collected in this study was stored in a password protected computer and backed up in a flash disc. The flash disc was under the safe custody of the principal investigator. Each entry had a code to ensure confidentiality of the study participants.

3.14.2 Data analysis and presentation

During data collection, coding was done to ensure accuracy during data analysis. Data was analyzed using descriptive and inferential statistics. Descriptive analysis of each demographic variable was conducted by calculating mean (SD) for continuous variables like age and frequency distribution of categorical factors like sex and training. The main outcomes of knowledge and skills were described and appropriate frequency distribution of responses presented using either tables, figures, pie charts, bar graphs or frequency tables.

3.15 Dissemination of findings

A comprehensive report was written to include all recommendations and suggestions/conclusions and disseminated to various stakeholders including University of Nairobi, Kiambu District Hospital management and labour ward staff and Ministry of medical services. The obtained information is to be shared in scientific conferences and published in medical and nursing journals.

3.16 Ethical considerations

Approval to carry out the study was obtained from UON/KNH ethics and research committee (P236/04/2015, appendix 5) and Kiambu District Hospital administration (appendix 5). A written informed consent was obtained from those participating in the study after explanation about the study.

Confidentiality was maintained by ensuring that no names appeared in the questionnaires. Anonymity of participants was ensured through coding of questionnaires and observation checklist. There was no coercion to participate in the study and participants were free to opt out without consequences. All information collected was kept confidential to be shared with relevant parties.

3.17 Study limitations

Time factor was a major limitation. The study was conducted in line with other course work. It was therefore necessary to balance between the two to meet the deadlines of both the study and other academic needs.

While doing the observations, hawthorne effect occurred as midwives become more aware of being observed.

The study was on midwives only so generalization is limited to practicing midwives and not to other skilled birth attendants who also play a role on prevention and management of PPH.

CHAPTER FOUR: RESULTS

4.0 Introduction.

This chapter presents the results of the study. Data was collected in the months of July and August 2015. In total 22 midwives participated in filling of the questionnaires and 18 midwives were observed as they conducted each three deliveries hence in total 54 deliveries were observed. The findings are presented and interpreted based on the objectives of the study.

4.1: Socio demographic characteristics of the respondents.

More than half 63.6% (n = 14) of the respondents were aged between 35-44 years, 18.2% (n =4) were aged between 25-34 years, 13.6% (n =3) were aged between 45-54 years while 4.5% (n =1) were aged less than 25 years. All the respondents 100% (n =22) were female midwives with majority of them 72.7% (n =16) married, 18.2% separated (n =4), while the same percentage of 4.5% (n =1) and 4.5 % (n =1) were divorced. All the respondents 100% (n =22) had college level of education and most 90.9% (n =20) were trained at diploma level while the rest 9.1% (n =2) were trained at certificate level. For the professional qualification, 90.9% (n =20) were Kenya registered community health nurses while 9.1% (n =2) were enrolled community health nurses. For the professional qualification, 90.9% (n =20) were Kenya registered community health nurses while 9.1% (n =2) were enrolled community health nurses as summarized in Table 2.

Table 2: Socio-demographic characteristics of the midwives

Variables	Frequency n =22	Percentage (%)
Age in years		
<25	1	4.5
25-34	4	18.2
35-44	14	63.6
45-54	13.6	13.6%
Gender		
Females	22	100
Marital status		
Married	16	72.7
Single	4	18.2
Separated	1	4.5
Divorced	1	4.5
Level of education		
College	22	100

4.1.1 Professional qualification.

For professional qualification, majority 20(90.9%) were Kenya registered community health nurses with the rest 2(9.1%) being enrolled community health nurses.

4.1.2: Duration worked in a labour ward setting.

Slightly more than half 13(59.10%) of the respondents had worked in a labour ward setting for 0-4 years while 9(40.9%) had worked for 5-9 years as shown in figure 3.

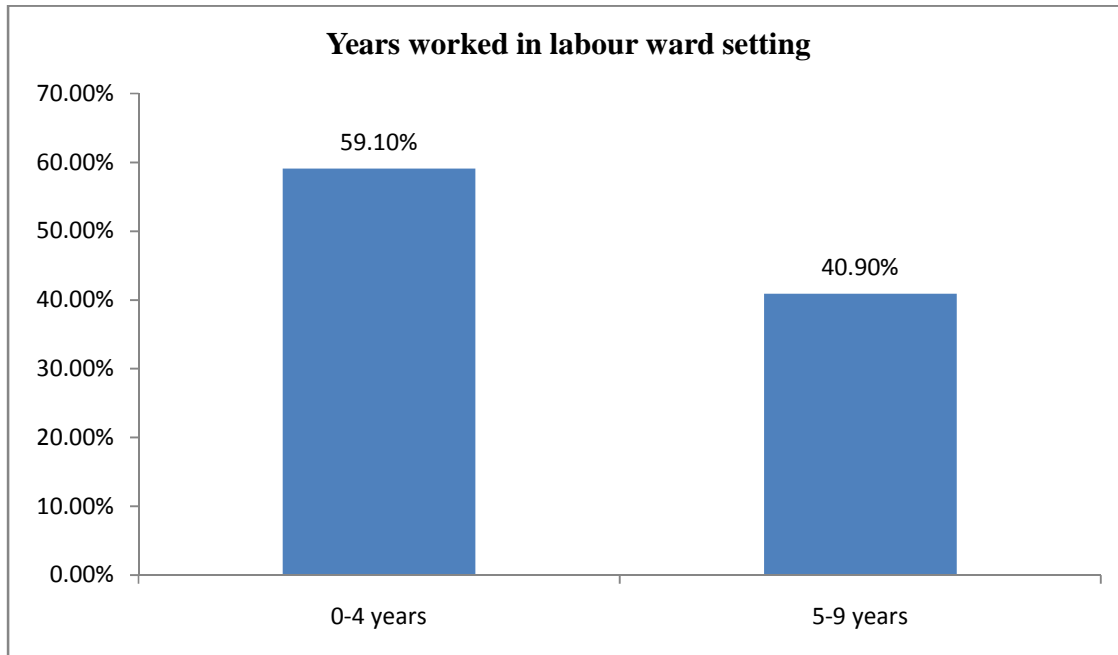


Figure 3: Years worked in a labour ward setting

4.1.3 Training attended by the respondents.

On training the respondents were to indicate whether they have ever been trained on listed items.

Some had been trained on more than one item meaning more than one response was obtained.

Percentages are taken to total responses as some respondents gave more than one response.

Majority were trained on CeMOC 19 (86.4%) and BeMOC 18 (81.8%), followed by PMTCT 16 (72.7%) and AMSTL 15 (68.2%), FP 8 (36.4%) and the least 7 (31.8%) had been trained on ARV as in figure 4.

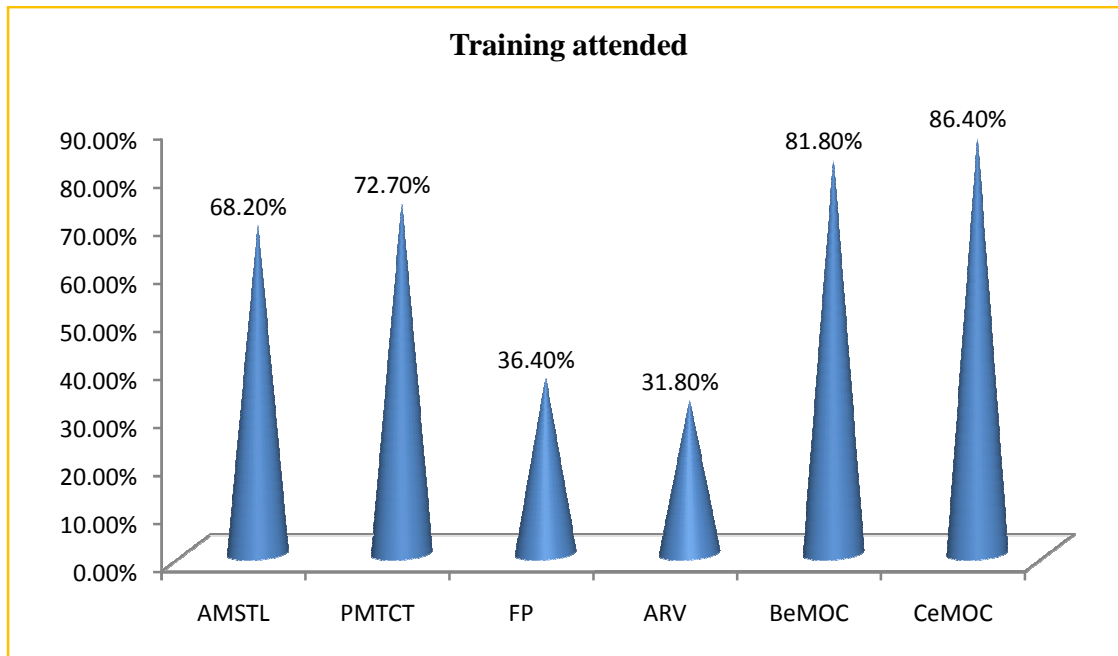


Figure 4: Training attended by the respondents.

4.2 Knowledge on prevention of postpartum haemorrhage

On components of active management of third stage of labour, all the respondents 100% (n =22) ticked true for administration of uterotonic, more than half 54.5 % (n =12) false for early cord clamping and cutting and 45.5 %(n =10) as true. Almost all of the respondents 95.5 %(n =21) ticked true for controlled cord traction as a component while the rest 4.5% (n =1) ticked false. Majority of them 86.4% (n =19) as true for uterine massage and the rest 13.6% (n =3) as false as in table 3 and figure 5.

Table 3: components of active management of third stage of labour

Variables	Frequency n =22	Percentage (%)
Administration of uterotonics		
True	22	100
False	0	0
Early cord clamping and cutting		
True	10	45.5
False	12	54.5
Controlled cord traction		
True	21	95.5
False	1	4.5
Uterine massage		
True	19	86.4
False	3	13.6

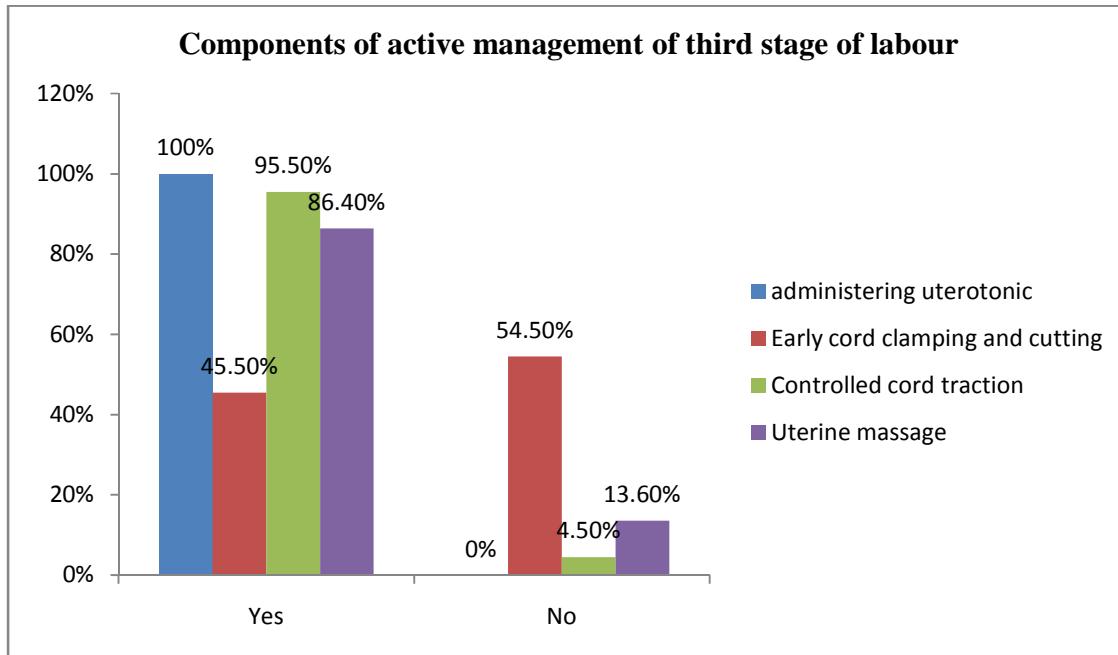


Figure 5: Components of active management of third stage of labour.

4.2.1 Use of prophylactic uterotonic agents, the prophylactic drug of choice, the dose and timing of administration.

All the respondents 100 % (n =22) agreed that prophylactic uterotonics are used, the uterotonic drug of choice was oxytocin and the dose was 10i.u. However on the timing of administration, majority of them 77.3% (n =17) said the usual dose is administered within one minute of delivery of the infant while the rest 22.7% (n =5) said it is administered at the delivery of anterior shoulder as in table 4.

Table 4: Use of prophylactic uterotonic agents, the prophylactic drug of choice, the dose and timing of administration.

Variables	Frequency n =22	Percentage %
Prophylactic uterotonics used		
Yes	22	100
Prophylactic drug of choice		
Oxytocin	22	100
Dose for the choice		
10i.u	22	100
Timing for administration of uterotonic		
At the delivery of anterior shoulder	5	22.7
Within one minute of delivery of the infant	17	73.3

4.2.2 Timing for administration of uterotonic

On timing of administration of uterotonic, majority of the respondents 17(73.3%) replied it's administered within one minute of delivery of the infant with the rest 5(22.7%) that it's administered at the delivery of anterior shoulder as shown in figure 6.

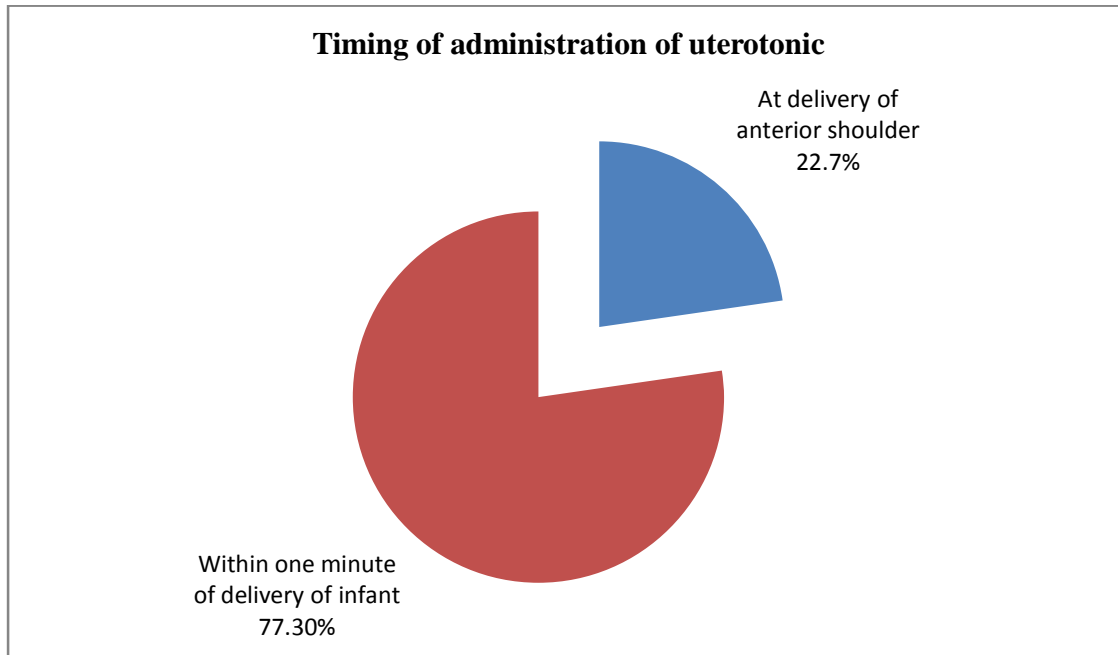


Figure 6: Timing of administration of uterotonic drug.

4.2.3 Performing uterine massage and timing

All the respondents 22(100%) agreed that they usually perform uterine massage with the majority 21(95.5%) indicating the timing to perform uterine massage as after delivery of the placenta while only 1(4.5%) indicating the timing as after delivery of the baby as in figure 7.

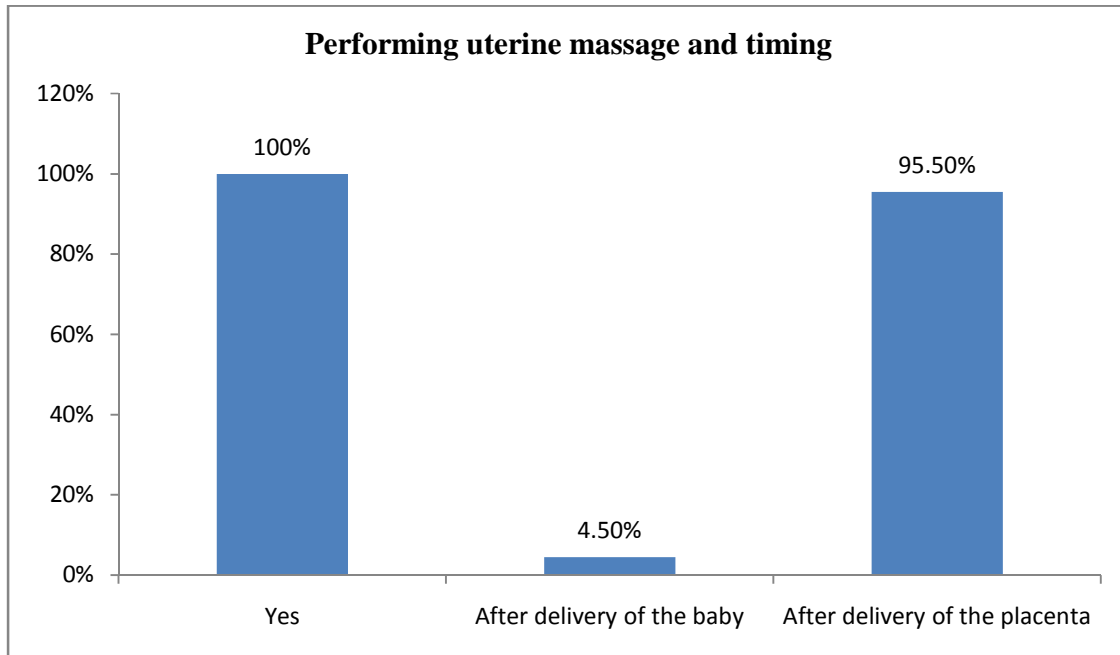


Figure 7: Performing uterine massage and timing.

4.2.4 Prevention of postpartum haemorrhage.

On a likert scale, respondents were to indicate against the statements on their contribution to prevention of PPH as strongly agree, disagree, neutral, agree or strongly agree. Responses were then grouped into three i.e. yes (for agree and strongly agree), no (for disagree, strongly disagree and neutral) for analysis as in table 5.

Table 5: Prevention of PPH.

Variable	Frequency n =22	Percentage %
Newborn suckling on a breast plays an important role in preventing postpartum hemorrhage		
Yes	22	100
Active management of 3rd stage of labor is evidence based, effective care		
yes	21	95.5
No	1	4.5
Active management of 3rd stage of labor should be routine in low-risk women		
Yes	13	59.1
No	9	40.9
Physiological management of 3rd stage of labor should be routine in low-risk women		
Yes	9	40.9
No	13	59.1
I believe that I can predict which women require active verses expectant management(physiological)		
Yes	12	54.5
No	10	45.4

4.3. Knowledge on management of PPH

On how to recognize PPH, majority of the respondents 9(40.9%) was by measuring blood loss after delivery, followed by 8(36.4%) through soaked linen after delivery and the least 5(22.5%) was by observing maternal vital signs as in figure 8.

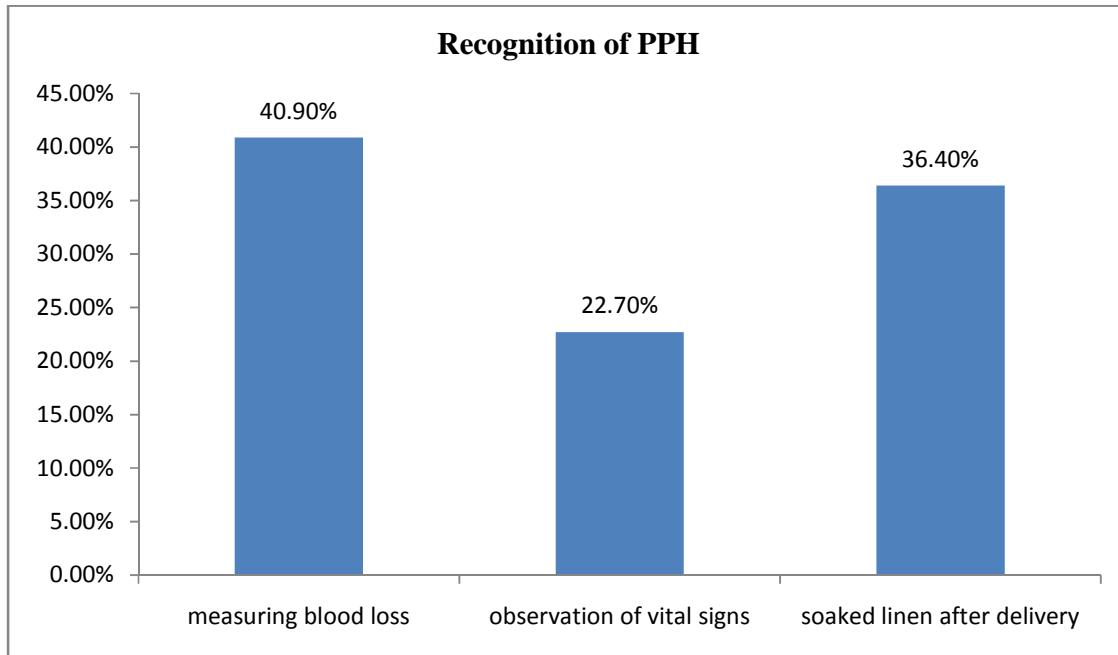


Figure 8: Recognizing PPH after delivery.

4.3.1: Causes of PPH

On what causes PPH, all the respondents 22(100%) agreed that uterine atony, trauma/lacerations to birth canal and retained placenta cause PPH, Majority 19(86.4%) also agreed that thrombolytic disorders causes PPH, only 2(9.1%) responded false to thrombolytic disorders as a cause of PPH with the remaining 1(4.5%) not knowing it as a cause as in table 6.

Table 6: Causes of PPH

Variable	Frequency n	Percentage %
Uterine atony		
True	22	100
Trauma/lacerations to birth canal		
True	22	100
Retained products of conception		
True	22	100
Thrombolytic disorders		
True	19	86.4
False	2	9.1
Do not know	1	4.5

4.3.2: First response on diagnosing PPH

Almost all the respondents 20(90.9%) gave their first response on diagnosing PPH as to shout for help with only 2(9.1%) responding that their first response would be to explore the cause as in figure 9.

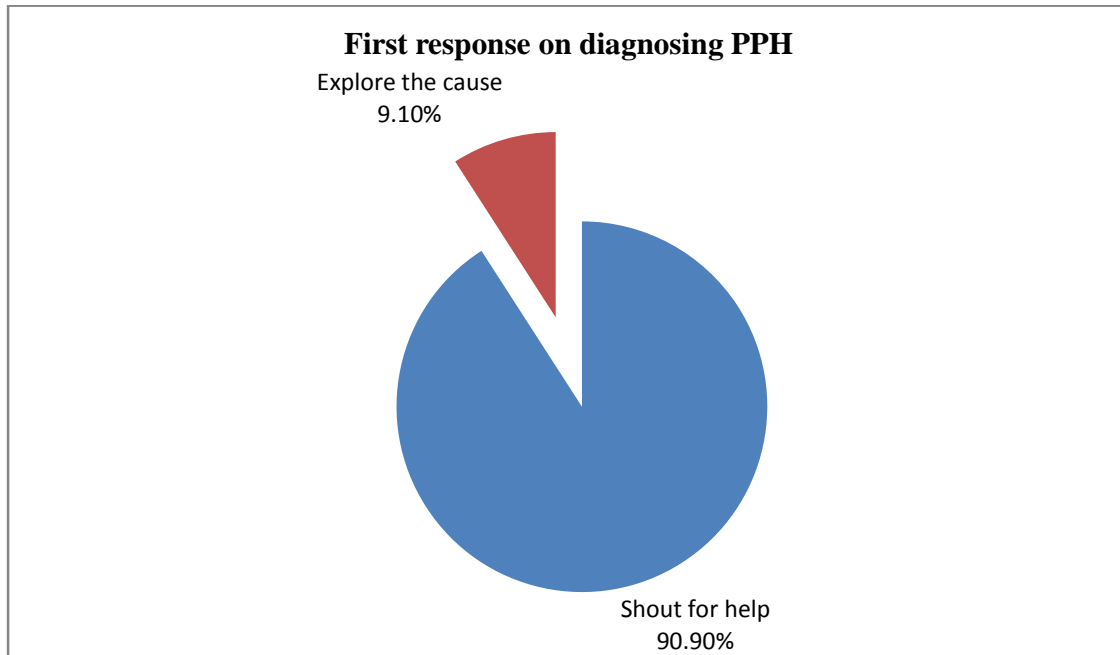


Figure 9: First response on diagnosing PPH.

4.4 Skills on handling PPH

The respondents were to indicate alongside the statements provided whether “not able to do even with assistance”, “able to do with assistance”, “able to do without assistance”. Apart from bimanual compression of the uterus where the majority 14(63.3%) felt they needed assistance, they could handle most of the other components as far as skills are concerned as in figure 10.

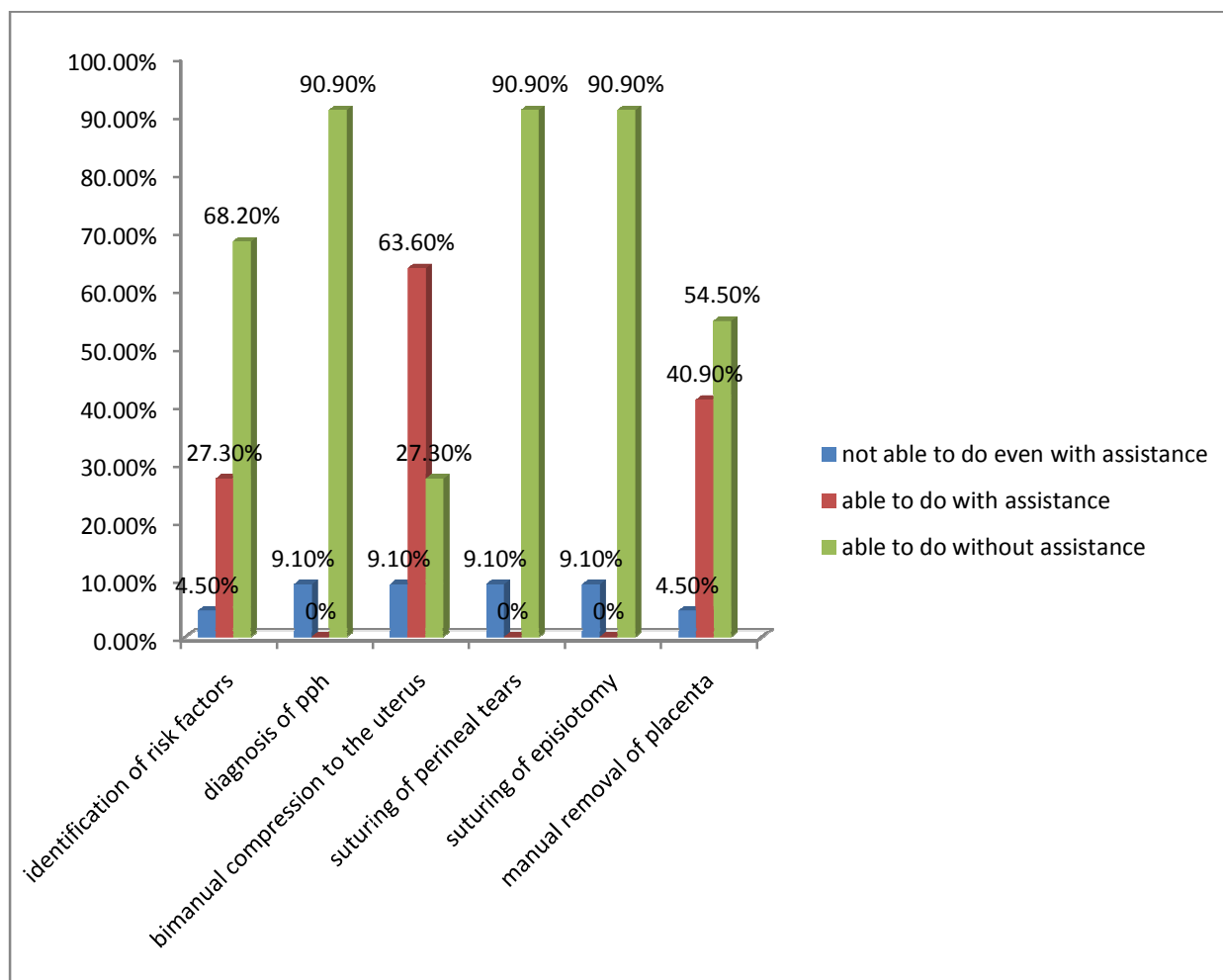


Figure 10: Skills on managing PPH

4.5 Institutional factors.

These are factors that would enhance or hinder their efforts in prevention and management of PPH. The respondents were to give any of the three responses; never, sometimes or always against the statements provided. For all of them 22(100%) uterotonic supplies were always available, for majority 19(86.4%), the supplies were always stored at recommended temperatures while only 3(13.6%) gave sometimes as the response. 16(72.7%) of the respondents replied that transport was always available in case of a referral while only 6(27.3%)gave sometimes as a response, however a greater percentage of the respondents 19 (86.4%) gave ratio of staff on duty

to patient was never appropriate with the rest 3(13.6%) as sometimes the ratio is appropriate as in the table 7.

Table 7: Institutional factors.

Variable	Never n (%)	sometimes n (%)	Always n (%)
Uterotonic Supplies available	0(0)	0(0)	22(100)
Uterotonic supplies stored at recommended temperatures in the ward	0(0)	3(13.6)	19(86.4)
Transport available in case of a referral	0(0)	6(27.3)	16(72.7)
Ratio of staff on duty to patients appropriate(1:2)	19(86.4)	3(13.6)	0(0)

4.5.1 Ratio of patients to staff on duty appropriate.

The highest percentage 19(86.4%) replied that the recommended ratio of staff on duty to patients is never appropriate with only a minority 3(13.6%) giving their response that sometimes it's appropriate.

4.6 Results from the observation checklist.

In total 18 midwives were observed as they conducted each three deliveries hence a total of 54 deliveries were observed. The observation checklist had two sections, preparation section with 8 items and the actual performance of AMSTL with 15 items. Of interest was the performance section where the results are drawn from. Scores were awarded with a maximum of 2 if competently performed, 1 if performed but not according to standards or 0 if not performed at all.

Total scores were obtained and categorized into competently performed or not competently performed using the items on section two of the actual performance of the active management of third stage of labour. The mean score was 79.1 therefore a midwife above this mean was considered to be practicing according to standard guidelines hence competent. Those with less than the mean were considered to be practicing but not according to standards hence not competent. More than half 10(55.6%) were deemed not to be practicing according to standards while the rest 8(44.4%) were deemed to be practicing according to standards as shown in figure 11.

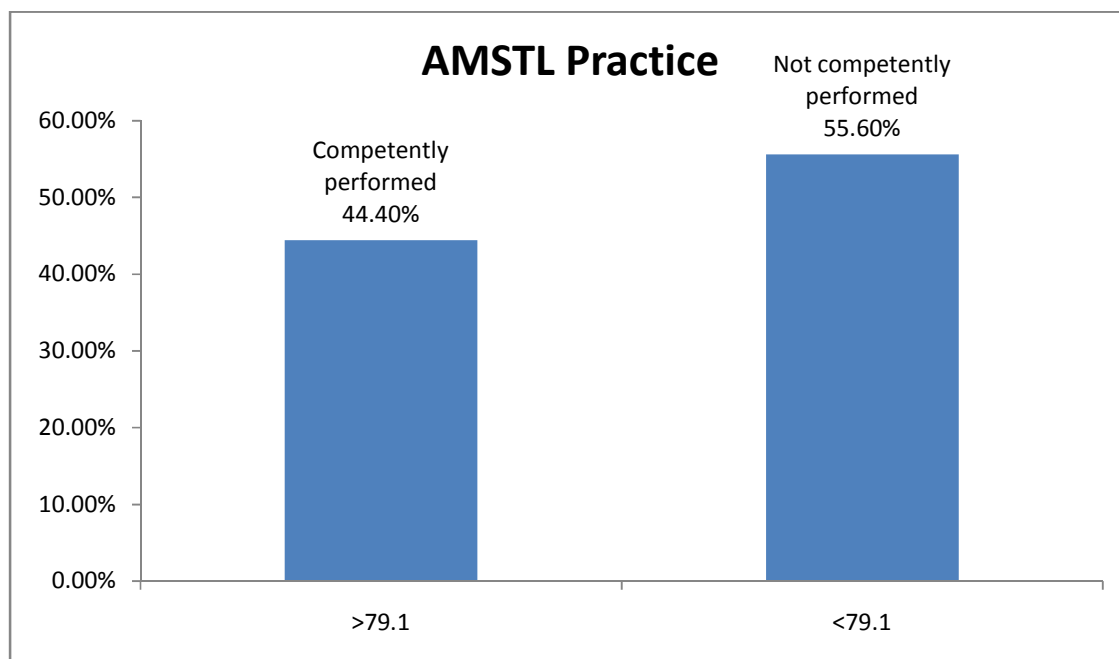


Figure11: Overall score of the observation checklist

4.7: Associaton of sociodemographic characteristics of midwives, and the AMSTL practice.

The relationship between midwives age and their AMSTL practice did not yield statistical significance; however the study highlights association between the midwives professional qualification and their AMSTL practice (p value 0.028) as in table 8.

Table 8: Association of socio demographic characteristics of midwives and the AMSTL practice.

Variables	Competency		Chi-square	p-value
	Competent n (%)	Not competent n (%)		
Age in years				
<25	0(0)	1(5.6)	0.409	2.890
25-34	1(5.6)	1(5.6)		
35-44	7(38.9)	6(33.3)		
45-54	0(0)	2(11.1)		
Professional qualification				
ECHN	1(5.6)	1(5.6)	0.867	0.028
KRCHN	7(38.9)	9(50)		
Duration of working labour ward in years				
0-4	3(16.7)	7(38.9)	0.168	1.906
5-9	5(27.8)	3(16.7)		

4.8: Association of knowledge and skills on prevention and management of PPH and competence of AMSTL practice.

The relationship between midwives knowledge and skills and competence on practicing AMSTL did not yield statistical significance as shown in the table 9.

Table 9: Association between knowledge and skills on prevention and management of PPH and competence of AMSTL practice.

Variables	Competence		p-value	Chi-square
	Competent n(%)	Not competent		
Knowledge on prevention and management of PPH				
Don't know	4(22.2)	3(16.7)	0.748	0.387
Knows	4(22.2)	7(38.9)		
Knowledge on skills of handling PPH				
don't know	4(22.2)	4(22.2)	0.180	0.67
Knows	4(22.2)	6(33.3)		

CHAPTER FIVE: DISCUSSION, CONCLUSION AND RECOMMENDATIONS.

5.0: Introduction.

This chapter gives a detailed discussion of the study findings and compares them with those from prior studies done for similarities or differences, gives conclusions and recommendations from the study.

5.1: Socio demographic characteristics of the midwives

From the study, all participants were of one gender (female). This may be attributed to the historical background of the profession. 63.3 % of the respondents were aged between 35-44 years. All the respondents had college level of education with most of them (90.9%) trained at diploma level and this yielded statistical significance (p-value 0.028). None of the midwives who participated was trained at degree level.

Even though duration worked in a labour ward setting did not yield statistical significance (p value 1.906), the study found out that 59.10% of the respondents had worked in a labour ward setting for 0-4 years. Majority of the midwives (68.2%) had been trained on Active management of third stage of labour (AMSTL) which is key in prevention of postpartum haemorrhage. Having a greater percentage trained was in line with a joint statement in 2004 by the International Confederation of Midwives and International Federation of Gynaecologists and Obstetricians endorsing the need for all deliveries to be attended by a caregiver trained in AMTSL (RCOG, 2011).

5.2: Knowledge on prevention and management of PPH:

Overall, the midwives had knowledge on prevention of PPH. Majority were well informed on components of the active management of third stage of labour though 13.6 % indicated that uterine massage was not a component and 45.5% also indicated early cord clamping and cutting as a component of active management of third stage. This may be indicative of lack of updates hence depending mainly on information during training period. Of those who were observed conducting deliveries, 72.2% were trained on AMSTL but only 53.8% were rated as competent in performing AMSTL. This may be partly attributed to the fact that there was no AMSTL guideline chart in labour ward. Presence of standard treatment guidelines serves to remind the midwives on the components of AMSTL and when to apply them.

All the midwives indicated they always use prophylactic uterotonics in management of third stage of labour, that the drug of choice was oxytocin and a dose of 10 IU. This was in line with WHO (2007) recommendations and Cochrane data base systematic review done by Westhoff et.al (2013). Considering prophylactic uterotonic, a Cochrane review by RCOG (2011) including seven trials comparing prophylactic oxytocin versus no uterotonic concluded that oxytocin reduced the risk of PPH by about 60% and the need for therapeutic oxytocins by about 50%.

On the timing of administration of prophylactic uterotonic, 73.3% had the knowledge that administration should be within a minute after delivery of the infant, but on deliveries observed, only 16.7% were able to administer prophylactic uterotonic within a minute after delivery. This can be partly attributed to staff patient ratio which almost all the respondents agreed that it was never appropriate and needed to be improved for better performance. According to the hospital policy, the drug of choice was oxytocin and all midwives administered the correct dose of 10 IU intramuscular to every parturient with a singleton pregnancy (100%). This had a slight difference

with a study in three maternity hospitals in Istanbul, Turkey that documented the use of oxytocics in 95% of deliveries during the third stage of labour (Stanton et. al 2009)

Even though majority could not administer oxytocin within one minute of delivery of the infant as per standards, none was administered after delivery of the placenta. This differed with a study by Mfinaga et.al (2009) that found out the extremely low rate of AMSTL was due to administration of uterotonic drug after delivery of placenta.

From the study, all the respondents agreed that they usually perform uterine massage with 95.5% indicating the timing to perform uterine massage as after delivery of the placenta with only. On observed deliveries, all midwives performed uterine massage after delivery of the placenta but none taught the mother how to do uterine massage every 15 minutes for two hours as the protocol requires indicating knowledge gap.

The study found out that 90.9% of the respondents always examined the placenta, its membranes and the umbilical cord after delivery for completeness. The remaining 9.9% cited too much workload as the hindrance to doing the examination. But on observed deliveries, no midwife examined the placenta a clear indication of a discrepancy of the responses and what is done. This may partly be attributed to workload and shortage of staff since 86.4% cited the ratio of staff on duty to patients as never appropriate.

All the midwives agreed that newborn suckling on a breast plays an important role in preventing postpartum hemorrhage, 95.5% also agreed that active management of 3rd stage of labor is evidence based, effective care, 59.1% agreed that active management of 3rd stage of labour should be routine in low-risk women but 40.9% disagreed that active management of 3rd stage of labour should be routine in low-risk women. Majority of the midwives(54.5%) disagreed that

physiological management of 3rd stage of labor should be routine in low-risk women and that they can predict which women require active versus expectant management(physiological).

On how to recognize PPH immediately after delivery, varied responses were obtained with 40.9% indicating that they measure blood loss after delivery. The rest would recognize PPH through soaked linen after delivery or by observing maternal vital signs. However, on observed deliveries, all midwives did visual estimation of blood loss but not by measuring blood loss as majority indicated. On inquiry of why measuring of blood loss was not being done, they cited challenges like too much workload and shortage of staff. RCOG (2011) points out that Visual blood loss estimation often underestimates blood loss, therefore, more accurate methods, such as blood collection drapes for vaginal deliveries and weighing swabs may be used. Written and pictorial guidelines may help staff working in labour wards to estimate blood loss.

The study found out all midwives were aware of uterine atony as the major contributing factor to PPH and on recognizing PPH, 90.9% of the midwives would shout for help. This was in line with the protocols of handling obstetric emergencies according to the Fraser et.al (2006) where communication is key when handling any obstetric emergency citing shouting for help as the first thing. On observed deliveries, if PPH occurred, the midwife shouted for help and teamwork was observed in attending to the emergency.

5.3: Skills in handling PPH if it occurs

Even though there was no statistical significance on skills versus competence of AMSTL practice(p-value 0.180), the study found out that 90.9% of the midwives could diagnose PPH, suture perineal tears and episiotomies without assistance, however,27.3 % of the midwives felt that they would require assistance in identifying risk factors to PPH.

The study found out that uterotonic supplies were always available (100%) which enabled the midwives to practice AMSTL. This differed with findings of a study done by Smith J.M et al (2014) that found oxytocin to be regularly available in 89% of facilities in a key informant interview of 37 countries. Oxytocin is relatively stable at temperatures below 30 °C and when used routinely for active management of the third stage, the rapid turnover of stock results in shorter environmental exposures. Surveys in Africa show that oxytocin is available and accessible in most health facilities and the lack of oxytocin is often due to health system failures that affect any commodity (Mathai et.al 2007). Majority of the midwives indicated that supplies were always stored at the correct temperatures mainly at room temperature.

5.4: Conclusion:

This study has yielded new knowledge on midwives knowledge and skills on prevention and management of postpartum haemorrhage. All midwives were knowledgeable but gaps were observed on actual performance on observed deliveries since many of the mothers missed the preventive benefit of prophylactic oxytocin when administered within a minute of delivery of the infant even though all mothers received active management of third stage of labour. Visual estimation of blood loss was done which grossly underestimates blood loss after delivery and puts the mothers at risk.

5.5: Recommendations

To improve on competence of midwives on prevention and management of post partum haemorrhage the following suggestions were made:

1. There is need for standard operating procedures (guidelines) on AMSTL to be availed in labour ward to serve as a reminder of the steps involved and when to undertake them.
2. The midwives require updates/training on AMSTL to help them practice as per the guidelines of AMSTL.
3. A wider scope of similar studies needs to be carried out in other facilities to enable generalization of results.

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Appendix 1A: Consent form information sheet for the midwives in KDH labour ward.

Title: competence of midwives in prevention and management of PPH

Principal Investigator: Elizabeth Mutete Mutunga.

Purpose:

The study seeks to establish midwives competence in preventing PPH and managing it when it occurs.

Procedures:

Questionnaires and observation checklist will be used to collect data. The questionnaire will contain both close-ended and open ended questions, self administered for the midwives to obtain information on knowledge on active management of third stage of labour and challenges they face when managing postpartum haemorrhage. The observation checklist will be used to obtain information on skills possessed by the midwives on management of PPH if it occurs.

Benefits:

As an individual, no personal benefits from the study but results can be used to improve standards or develop guidelines for prevention and management of PPH hence improving the quality and the outcomes of care offered to mothers in labour.

Risks:

There are minimal risks to you for participating in this study. You may be uncomfortable to answer some questions or when being observed as you offer care to patients but no major risks expected.

Confidentiality:

Confidentiality will be maintained by ensuring that no names appear in the questionnaires. Anonymity of participants will be ensured through coding of questionnaires, responses will have no identifiers and the data base system will be password protected.

Voluntary Participation and Withdrawal

As a participant in this study, you have a right to withdraw from the study anytime if you find it necessary. This will have no effect on you at all and your practice as a midwife will not be affected.

Contact Persons: In case of any concerns now or later please feel free to consult me on this mobile number 0720598140, my supervisor Professor Grace Omoni on this number 0727466460 or the KNH/UON-ERC chairman, Professor A.G.Guantai on telephone 726300-9 ext 44102 or the postal address 00202-20723 Nairobi.

Appendix 1B: Certificate of approval.

I have read the information sheet and it has also been explained to me. I have had an opportunity to ask questions about the study and all my concerns have been answered to my satisfaction. I fully understand the purpose of this study and conditions of involvement in the study. I agree to the above and give consent without coercion to participate in the study.

Name of participantSignature

Date.....

Name of investigator.....

Signature

Date.....

Kiambatisho 2A: Ridhaa ya kushiriki katika utafiti

Jina la Utafiti

Umahiri wa wakunga kuzuia na kusimamia kutokwa na damu baada ya kujifungua katika hospitali ya wilaya ya Kiambu, kata ya kiambu

Mpelelezi

Bi. Elizabeth mutunga, Shule ya Uuguzi, Chuo Kikuu cha Nairobi.

Kusudi la Utafiti

Lengo la utafiti ni kuhakikisha tathmini umahiri wa wakunga kuzuia na kusimamia kutokwa na damu baada ya kujifungua katika hospitali ya wilaya ya Kiambu.

. Utaratibu

- 1) Utachaguliwa nasibu kwa kushiriki katika utafiti huu katika hospitali ya wilaya ya Kiambu kwa kuwa una uchungu wa kujifungua mtoto wakati wa utafiti huu
- 2) Utahitajika kutia sahihi ili kushiriki katika utafiti.
- 3) Baada ya kutia sahihi, mchunguzi mkuu au msaidizi wake atachunguza unavyohudumiwa wakati wa kujifungua kwa kutumia orodha ya uchunguzi.
- 4).Uchunguzi hautaathiri huduma utakayopata
- 5) Jina lako haitaandikwa katika orodha ya uchunguzi

Faida

Hakuna faida ya moja kwa moja kwa ajili yako. Hata hivyo, itasaidia katika kuelewa umahiri walio nao wakunga na hivyo kuweza kutoa huduma bora kwa wamama wakati wa kujifungua

katika hospitali ya wilaya ya Kiambu.

Hatari

Hakuna uwezekano wa hatari kuwepo kwa sababu wakunga watakuhudumia kama kawaida.

Siri

Matokeo ya utafiti huu yatajadiliwa pamoja nawe. Habari yoyote nyingine isipokuwa hii itazingatiwa siri na kutumika tu kwa madhumuni ya utafiti. Utambulisho wako utakuwa siri na kutumika tu kwa madhumuni ya utafiti. Utambulisho wako utakuwa siri kama sheria inavyohitaji.

Haki ya kujiondoa au kukataa

Kushiriki kwako ni kwa hiari lakini muhimu kwa mafanikio ya utafiti huu. Una uhuru kukataa au kujiondoa wakati wowote bila ya kuathiri huduma utakayopata.

Maswali

Iwapo una swali, maoni au ufafanuzi wowote , tafadhali usisite kuwasiliana na wafuatao:

- 1.Elizabeth mutunga kupitia nambari ya simu 0720598140.
2. Mwenyekiti KNH/UON-ERC, SLP 20723 Hospitali ya Taifa ya Kenyatta, Nambari ya simu 2726300-9 Ugani 44102

Kiambatisho 2B: Ridhaa ya kushiriki

Nimesoma na kuelezwa kikamilifu na kuelewa asili ya lengo la utafiti huu, maswali yangu yote kuhusu utafiti huu yamejibiwa kikamilifu na kwa uhuru najipa ridhaa ya kushiriki.

Jina ya aliyeshiriki Sahihi.....

Tarehe

Mimi mtafiti, kwa kikamilifu nimeeleza maelezo muhimu ya utafiti huu kwa mtu ambaye saina yake imewekwa juu.

Sahihi ya mpelelezi/msaidizi wa utafiti

Tarehe

Appendix 3: Questionnaire

Code:.....

Date:.....

Instructions

1. Please do not write your name on the questionnaire
2. Please tick one most appropriate response on the brackets provided
3. Where no responses provided, please write on the spaces provided.

SECTION A: DEMOGRAPHIC CHARACTERISTICS

Q1. What is your age in years?

1. <25 []
2. 25-34 []
3. 35-44 []
4. 45-54 []
5. >55 []

Q2. What is your gender?

1. Male []
2. Female []

Q3. What is your marital status now?

1. Married []
2. Single []
3. Separated []
4. Divorced []

Q4. What is your highest level of education?

1. O level []
2. A level []
3. College []
4. University []

SECTION B: TRAINING AND EXPERIENCE

Q5. What is your highest level of training?

- 1. Certificate []
- 2. Diploma []
- 3. Degree []
- 4. Masters []
- 5. PhD []

Q6. What is your professional qualification?

- 1. EM-Enrolled midwife []
- 2. ECHN-Enrolled community health nurse []
- 3. RM- registered midwife []
- 4. KRCHN-Kenya registered community health nurse []
- 5. Any other specify.....

Q7. How many years have you worked in a labour ward setting?

- 1. 0-4 years []
- 2. 5-9 years []
- 3. 10-14 years []
- 4. 15-19years []
- 5. >20years []

Q8. How long have you worked in KDH labour ward?

- 1. Less than 1 year []
- 2. 1-2 years []
- 3. 3-4 years []

4. More than 5 years []

Q9. Have you ever been trained on the following? (Tick all training attended)

1. AMSTL- Active management of third stage of labour []

2. PMTCT-Prevention of mother to child transmission []

3. FP-family planning []

4. ARV-antiretroviral therapy []

5. BeMOC-Basic emergency obstetric care []

6. CeMOC-Comprehensive emergency obstetric care []

SECTION C: KNOWLEDGE AND ATTITUDE ON PREVENTION OF PPH

For questions 9 to 12, on the components of active management of labour, please indicate true (T), false (F) or I do not know (DK)

Component	True(T)	False(F)	Do not know(DK)
	1	2	3
Q10. Administration of a uterotonic			
Q11. Early cord clamping and cutting			
Q12. Controlled cord traction			
Q13. Uterine massage			

Q14a). Are prophylactic uterotonic agents used in management of third stage of labour?

1. Yes []

2. No []

b) If no, please give reasons.....

c) If yes, which prophylactic drug of choice is commonly used?

- 1. Oxytocin []
- 2. Ergometrine []
- 3. Misoprositol []
- 4. Combination []

Q15. What is the dose for your choice above.....

Q16. When is the usual dose of the uterotonic drug administered?

- 1. At delivery of anterior shoulder []
- 2. Within one minute after delivery of infant []
- 3. After delivery of placenta []
- 4. At the first sign of excessive blood loss []

Q17a). Do you perform uterine massage?

- 1. Yes []
- 2. No []

b). If yes above, what is the timing to perform uterine massage?

- 1. After delivery of the baby []
- 2. After delivery of the placenta []

c). If no above, please indicate the reasons.....

Q18a). Do you always examine the placenta, its membranes, and the umbilical cord after delivery for completion?

1. Yes []

2. No []

b). If no above, give reason(s).....

For questions 19 to 23, please indicate your response against the columns provided

Variable	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
	1	2	3	4	5
Q19. Newborn suckling on a breast plays an important role in preventing postpartum hemorrhage					
Q20. Active management of 3rd stage of labor is evidence based, effective care					
Q21. Active management of 3rd stage of labor should be routine in low-risk women					
Q22. Physiological management of 3rd stage of labor should be routine in low-risk women					
Q23. I believe that I can predict which women require active verses expectant management					

SECTION D: KNOWLEDGE ON MANAGEMENT OF PPH

Q24. How would you recognize PPH immediately after delivery?

1. Measuring blood loss after delivery []

2. Observing maternal vital signs []

3. Soaked linen after delivery []

4. Any other specify.....

For questions 25 to 28, on causes of PPH please indicate True (T), False (F) OR I do not know (DK)

Cause	True(T)	False(F)	Do not know
	1	2	3
Q.25 Uterine atony			
Q. 26 Trauma/lacerations of the birth canal			
Q.27 Retained products of conception			
Q28. Thrombolytic disorders			

Q29. What would be your first response on diagnosing PPH?

1. Shout for help []

2. Explore the cause []

3. Arrest the bleeding []

4. Any other, specify.....

SECTION E: SKILLS IN HANDLING PPH

For questions 30 to 35, indicate your response in the columns provided

Variable	Not able to do even with assistance	Able to do with assistance	Able to do without assistance
	1	2	3
Q30. Identification of risk factors to PPH			
Q31. Diagnosis of PPH			
Q32. Bimanual compression to the uterus			
Q33. Suturing of perineal tears			
Q34. Suturing of episiotomy			
Q35. Manual removal of placenta			

SECTION F: INSTITUTIONAL FACTORS

For questions 36 and 39, please indicate response as: Never (1), sometimes (2) or always (3)

Variable	Never	Sometimes	Always
	1	2	3
Q36. Uterotonic Supplies available			
Q37. Uterotonic supplies stored at recommended temperatures in the ward			
Q38. Transport available in case of a			

referral			
Q39.Ratio of staff on duty to patients appropriate(1:6)			

Appendix 4: AMSTL observation checklist.

Code.....

Date.....

(This modified checklist has been adopted from POPPHI (2007), participant’s notebook)

Rating scale: 1-Needs improvement

2-Competently performed

0-Not Performed

Demographic information of the patient

Age.....Parity.....Gravida.....IP.NO.....

Emotional support	1	2	3
1.Explains to the woman and her family what will happen			
2. Provides emotional support and reassurance, and keeps the woman and her family informed throughout birth.			
Preparation			
3. Prepares uterotonic drug (oxytocin is the uterotonic of choice) and other essential equipment for the birth before onset of second stage of labor.			
4. Wears a clean plastic or rubber apron, rubber boots, and eye goggles.			
5. Washes hands thoroughly with soap and water and dries them with a clean, dry cloth (or air dries hands).			
6. Wears sterile surgical or HLD gloves on both hands			
7. Asks the woman to empty her bladder when second stage is near (catheterizes only if the woman cannot urinate and bladder is full).			
8. Assists the woman to assume the position of her choice (squatting, semi-sitting).			
Step 1: Administration of a uterotonic drug			
9. Palpates the uterus to make sure no other baby is present.			

10. If no other baby is present, administers uterotonic drug within one minute			
Step 2: Controlled cord traction			
12. Places the palm of the other hand on the lower abdomen just above the woman's pubic bone.			
13. Keeps slight tension on the cord and awaits a strong uterine contraction.			
14. Applies gentle but firm traction to the cord during a contraction, while at the same time applying counter traction abdominally.			
15. Waits for the next contraction and repeats the action if the maneuver is not successful after 30-40 seconds of controlled cord traction.			
16. As the placenta delivers, holds it in both hands.			
17. Uses a gentle upward and downward movement or twisting action to deliver the membranes.			
18. If the membranes tear, gently examines the upper vagina and cervix.			
19. Places the placenta in the receptacle (e.g., kidney basin) provided.			
Step 3: Uterine massage			
20. Immediately massages the fundus of the uterus through the woman's abdomen until the uterus is contracted (firm).			
21. Ensures the uterus does not become relaxed (soft) after stopping uterine massage.			
22. If the uterus becomes soft after massage, repeats uterine massage.			
23. Teaches the woman how to massage her uterus.			

Appendix 5: Approval letter from UON/KNH ethics committee



UNIVERSITY OF NAIROBI
COLLEGE OF HEALTH SCIENCES
P.O BOX 19676 Code 00202
Telegrams: varsity
(254-020) 2726300 Ext 44355

KNH/UON-ERC

Email: uonknh_erc@uonbi.ac.ke
Website: <http://erc.uonbi.ac.ke>
Facebook: <https://www.facebook.com/uonknh.erc>
Twitter: @UONKNH_ERC https://twitter.com/UONKNH_ERC



KENYATTA NATIONAL HOSPITAL
P.O BOX 20723 Code 00202
Tel: 726300-9
Fax: 725272
Telegrams: MEDSUP, Nairobi

Ref: KNH-ERC/A/316

20th July 2015

Elizabeth Mutete Mutunga
H56/67862/2013
School of Nursing Sciences
University of Nairobi

Dear Elizabeth

RESEARCH PROPOSAL – COMPETENCE OF MIDWIVES IN PREVENTION AND MANAGEMENT OF POSTPARTUM HAEMORRHAGE AT KIAMBU DISTRICT HOSPITAL LABOUR WARD, KIAMBU COUNTY (P235/04/2015)

This is to inform you that the KNH/UoN-Ethics & Research Committee (KNH/UoN-ERC) has reviewed and **approved** your above proposal. The approval periods are 20th July 2015 – 19th July 2016.

This approval is subject to compliance with the following requirements:

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

For more details consult the KNH/UoN ERC website www.erc.uonbi.ac.ke



Protect to discover

Appendix 6: Letter of permission from kiambu District Hospital

MINISTRY OF HEALTH

Telegrams: "MEDICAL", Kiambu
Telephone: Kiambu (office) 2022191
When replying please quote
Email address:
kiambudistricthospital@yahoo.com



KIambu DISTRICT HOSPITAL,
P. O. Box 39,
KIambu.

Ref No: KBU/ACC.7/VOL V/130

Date: 28th July 2015

Elizabeth M Mutunga
School of Nursing Sciences
College of Health Sciences
UNIVERSITY OF NAIROBI

RE: PERMISSION TO CARRY OUT RESEARCH

Your request on the above referenced matter is hereby acknowledged.

The ethical approval from the KNH/UON-ERC, Ref KNH-ERC/A/3/6 of 20th July is also noted allowing you to conduct research titled "Competence of midwives in prevention and management of post partum hemorrhage at Kiambu District Hospital, Kiambu County.

I am glad to inform you that your request has been favourably considered. Liaise with the maternity unit as you embark on the research. Finally ensure you provide us with a copy of the approved results and recommendations at the end of your research.

A handwritten signature in blue ink, appearing to read "D. Kariuki", written over a horizontal line.

DR. DAVID KARIUKI
MEDICAL SUPERINTENDENT
KIambu DISTRICT HOSPITAL

MEDICAL SUPERINTENDENT
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P. O. Box 39 - 00900,
KIambu
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