

**FACTORS AFFECTING PARTOGRAPH UTILIZATION IN
KIRYANDONGO DISTRICT: A CASE STUDY OF MIDWIVES
IN LOWER HEALTH UNITS**

**BY
MUSIIME AGNES
BMS/0256/102/DU**

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DECLARATION

I, Musiime Agnes, hereby declare that this research report is my original work and has never been submitted to any institution of learning for any academic award.

Signature.....Date:

APPROVAL OF SUBMISSION

This is to certify that the research study entitled ‘**Factors affecting partograph utilization in Kiryandongo District: A case of midwives in lower health units**’ has been done by the student under my supervision. I therefore recommend her for submission

Supervisor;

DR. MULWANA JOHNE

Signature.....Date.....

DEDICATION

This research is dedicated to my family, my husband Mr Mugabe Rogers, and our 4 children Ampeire Kore, Ahumuza Gamaliel, Akorabirungyi Berachah & Arinde Gracious for their tremendous support and marvelous joy that gives me the courage to take on the realities of life.

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LIST OF ABBREVIATIONS

CAO;	Chief Administration Officer
DHO;	District Health Officer
WHO;	World Health Organisation
SD;	Standard Deviation
SPSS;	Statistical Package for Social Sciences
UBOS;	Uganda Bureau of Statistics
ICM;	International Confederation of Midwives
EmONC;	Emergency Obstetric and Neonatal Care
H/C;	Health Centre
HSSP;	Health Sector Strategic Plan
MOH;	Ministry of Health
PFP;	Private For Profit
PNFP;	Private Not For Profit

OPERATIONAL DEFINITIONS

Midwife

A midwife is “a person who has successfully completed a midwifery education programme which is duly recognized in the country where it is located, and which is based on the ICM Essential Competencies for Basic Midwifery Practice and the framework of ICM Global Standards for Midwifery Education; who has acquired the requisite qualifications to be registered and/ or legally licensed to practice midwifery and use the title ‘midwife’; and who demonstrates competency in the practice of midwifery”.

Skilled birth attendant

Refers to “an accredited health professional - such as a midwife, medical doctor or nurse - who has been educated and trained to proficiency in the skills needed to manage normal (uncomplicated) pregnancies, childbirth and immediate postnatal periods, and in the identification, management and referral of complications in women and new-born. In this study, a skilled birth attendant refers to a trained staff providing obstetrical care to a pregnant mother in labour and postpartum periods as well as caring for a new born.

Obstetric labor

Obstetric labour is “a physiological process whereby the conceptus is expelled out from the uterus and delivered. It is also known as partition or confinement” (Sellers, 2012). In this study, the term labour and obstetric labour will be used interchangeably. Midwives who will participate in the current study are those who attend pregnant mothers in labour.

Partogram

The partogram also called partograph or cervicograph(Asibong et al., 2014), is defined as “a composite graphical record of key data (maternal, foetal and progress of labour) during labour entered against time on a single sheet of paper”. In the present study the partogram used in selected health facilities, is the one modified by WHO in 2000 (Magon, 2011), whereby the latent phase was excluded, and the active phase commences at 4 cm dilatation.

The aim of this study is to determine factors affecting the utilization of the partogram in labour wards.

ABSTRACT

Background: Uganda is still one of the developing countries with high maternal mortality ratio, currently estimated at 336/100,000 live birth. World health organization (WHO) recommends using the partograph to monitor labor and delivery, with the objective to improve health care and reduce maternal and fetal morbidity and death. The present study therefore, examined the extent of utilization of partogram among midwives in Kiryandongo lower health units.

Methods: A descriptive quantitative and cross-sectional research design was used in this study. Data was collected from 60 midwives using a self-administered questionnaire. A statistical package for social sciences (SPSS 21.0) was used to capture and analyze data.

Results: The mean age of participants was 31.1 years (SD=7.6), with majority (88.3%) certificate holders. 57 (95%) of the respondents knew what the partograph is and all 60(100%) knew the function of a partograph. Only 53 (88.3%), knew the function of alert line but all (100%) knew what action line means. However, only 20 (33.3%) were using the partograph properly. Challenges included, understaffing where all (100%) reported working one midwife per duty and lack of in-service training on how to use the partogram. Factors that were found significant on the use of partogram, included, professional qualification ($P=0.001$), years of professional experience ($P=0.033$) and in-service training received ($P=0.000$).

Conclusion and recommendations: A significant percentage of midwives in this study had fair knowledge of the partogram. However, a large percentage of participants were reported to poorly complete the partogram. Years of professional experience, having received in-service training on managing pregnant mothers in labour and qualification level were found to be predictors for the likelihood for the proper use of partogram. The key recommendations therefore, include, improving staffing of midwives, training of midwives on job on how to use the partogram and a continuous monitoring team on partogram utilization. Further research is required to assess the use of the partogram in other primary, secondary and tertiary level facilities to establish pattern of utilization and documentation which would help to improve monitoring of pregnant mothers in labour and hence reduce maternal and neonatal mortality rates.

CHAPTER ONE: INTRODUCTION

1.1 Background

Partograph is a monitoring tool for active stage of labor, which allows the trained health worker attending to the mother in labor to monitor the progress of labor, the mother, and the fetus, and to have a clear means of tracking labor progress with ‘alert’ and ‘action lines signaling when a labor is complicated (Zelellw, Tegegne, & Getie, 2016). The partograph consists of three parameters namely fetal condition, maternal condition and the progress of labor (Ollerhead & Osrin, 2014a). The aim of the partograph is to provide a pictorial overview of labor, to alert midwives and obstetricians to deviations in maternal or fetal well-being and labor progress (Bedwell, Levin, Pett, & Lavender, 2017). It has been documented that partograph could constitute a legal document and also act as an avenue for identifying accountability in midwifery practice (Yisma, Dessalegn, Astatkie, & Fesseha, 2013).

As a result of the belief that partograph usage was applicable in both the developed and developing countries, its use was introduced worldwide by the World Health Organization (Ollerhead & Osrin, 2014a). Partograph use can be highly effective in reducing complications arising from prolonged labor for the mother (postpartum hemorrhage, sepsis, uterine rupture and its sequelae) and the newborn (death, asphyxia, and infections) (Asibong et al., 2014).

The outcome of any pregnancy is largely dependent, on intrapartum care. Poor intrapartum care remains the major cause of maternal morbidity and mortality worldwide (Gans-Lartey, O’Brien, Gyekye, & Schopflocher, 2013). Since 1987, global efforts have been focused on reducing maternal and neonatal mortality and morbidity associated with intrapartum care, particularly in the developing countries. Many programs and tools have been developed to monitor and manage women in labor, one of which is the use of the partograph that was developed by Philpott in 1971 and was later modified by the World Health Organization (Yisma, Dessalegn, Astatkie, & Fesseha, 2013).

Globally, it is of paramount importance that all pregnant women in labor be monitored by a trained and skilled health worker utilizing a partograph to ensure birth without any complications (Chaturvedi, Upadhyay, De Costa, & Raven, 2015). For instance, a feasibility study on partograph

use by practitioners in India found that overall performance of health workers was poor (11.1%) and except correct recording of fetal condition, the most did not score well in the plotting of the other partograph components (Chandhiok et al., 2015).

In Africa, clinical audit of intrapartum care at the Korle-Bu teaching hospital in Accra Ghana found 50% reduced incidences of postpartum hemorrhages following an introduction of the routine use of the partograph in the management of labor (Gans-Lartey et al., 2013). In Nigeria, a study to evaluate knowledge and utilization of the partograph among obstetric care givers in south west Nigeria found that only 32.3% used the partograph to monitor women in labor and partograph use was reported significantly more frequently by respondents in tertiary level compared with respondents from primary/secondary levels of care (82.4% vs. 19.3%; $X^2 = 214.6$, $p < 0.0001$) (Fawole, Hunyinbo, & Adekanle, 2010).

In East Africa, a rapid assessment of partograph utilisation in selected maternity units in Kenya concluded that, the partograph was available in most units. However, accurate recording of parameters to monitor the fetus, the mother and progress of labour as recommended was mostly not done. Shortage of staff, lack of knowledge, lack of team work, lack of supplies and negative attitude among healthcare providers were some of the obstacles noted to hamper partograph use (Qureshi, Sekadde-Kigundu, & Mutiso, 2010).

In Uganda, studies about factors affecting Partograph utilization are scanty but a few studies have shown lack of sufficient knowledge, inadequate supplies and under staffing as the major hindrance factors. A study in Mbarara university teaching hospital about uterine ruptures found that among other causes, incorrect use of partograph contributes to 12% of the total causes (Mukasa et al., 2013). Another study in western Uganda about Improving Partograph Documentation and Use by Health Workers of Bwera Hospital found that a few partographs filled were either partially filled or incorrectly filled (Aliona Masika, Peter Katongole, & Govule, 2015).

Thus, to understand the factors affecting utilization of partograph among midwives in Kiryandongo district, this study was needed.

1.2 Problem statement

Uganda is still one of those developing countries with high maternal mortality ratio, currently estimated at 336/100,000 live births (UBOS, 2016). World health organization (WHO)

recommends using the partograph to monitor labor and delivery, with the objective to improve health care and reduce maternal and fetal morbidity and death (Markos & Bogale, 2015). Only 70% of deliveries in rural Uganda are assisted by skilled attendants with Bunyoro sub region where Kiryandongo belongs having a low percentage of 57% of skilled birth attendance (UBOS, 2016).

Consequently, due to this shortage of skilled birth attendants, it is not rare that midwives encounter difficulties while using the partograph. In addition, there is limited literature highlighting midwives' knowledge and use of partograph in health facilities of Uganda. Therefore, there is a need to determine the utilization of the partograph among midwives in Kiryandongo district, focusing on the lower health facilities, where human resources are insufficient to safely assist deliveries.

1.3 Significance of the study

It has been shown that the use of a partograph can be highly effective in reducing complications from childbirth (Opoku & Nguah, 2015). Therefore, findings from this study will highlight the factors affecting the utilization of partograph, in order to improve maternal health through provision of quality care to pregnant mothers during labor.

The results from this study will contribute to understanding the extent of utilization of partograph among midwives. It may also serve as basis for health policy-makers to instill good management practices in the healthcare delivery system, with respect to improvement of quality of care in labor and early post-partum wards. In addition, the findings from this study could provide baseline information for further studies on the use of partograph and quality care in the labor and early post-partum wards in Kiryandongo Health facilities and Uganda in general.

1.4 Objectives of the study

1.4.1 Main objective of the study

The main objective of this study was to describe factors affecting the utilization of partograph among midwives, in Kiryandongo district lower health units.

1.4.2 Specific Objectives

1. To assess the knowledge and practice of partograph among midwives, in Kiryandongo district lower health units.
2. To identify the challenges facing midwives with regards to the utilization of partograph in maternity wards in Kiryandongo lower Health units.

3. To determine the factors that facilitates the use of partograph among midwives, in Kiryandongo district lower health units.

1.5 Research questions

1. What is the knowledge and use of partograph among midwives in maternity wards of Kiryandongo lower health units?
2. What are the challenges facing midwives with regard to utilization of the partograph in labor wards of Kiryandongo lower health facilities?
3. What factors influence the use of partograph by midwives in maternity wards in Kiryandongo lower health units?

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

This chapter explores a number of studies that have been conducted in Africa and overseas pertaining to utilization of partograph. Rowe (2014) ascertains that literature review includes both theoretical and empirical sources that document the current knowledge of the problem. These authors continued that the theoretical component consists of theories, models and conceptual frameworks while the empirical component consists of sources from various studies published in journals, books and theses. Therefore, the literature for the present study was gleaned from published journal articles, textbooks, published reports, newsletters and internet search on partograph. The review is organized and presented into four headings namely: knowledge on utilization of partograph and use of partograph, nurses and midwives and their challenges/limitations with regards to utilization of partograph and finally, a description of Patricia Benner's model of nursing practice as a conceptual framework that guided this study.

2.2 Knowledge on utilization of the partograph.

Partograph is a universal tool for monitoring of labor (Bedwell et al., 2017). Wakgari, Amano, Berta, & Tessema, (2015) after conducting a cross-sectional quantitative study in Ethiopia reported that, the use of the partograph is a well-known best practice for quality monitoring of labor and subsequent prevention of obstructed and prolonged labor. However, a number of cases of obstructed labor still occur in health facilities due to poor quality of intrapartum care. For effective monitoring of pregnant mothers in labor, the researcher recommended that pre- service and on-job training for obstetric care givers on the use of partograph should be given emphasis. Such recommendation is also in use in Uganda as reported by a study on improving Emergency Obstetric and Neonatal Care (EmONC) Practices through Retrospective Analysis of Intrapartum Stillbirth Data at the Fort Portal Regional Referral Hospital, Southwestern Uganda (Radomsky et al., 2017).

The source of knowledge on partograph was identified in the study conducted by Chandhiok et al., (2015). The authors highlight that Life Saving Skill training workshop was reported as the primary source of knowledge by one-third of those aware of the partograph and these individuals generally had fair and good levels of knowledge. Zelellw et al. (2016) in a cross-sectional study to assess Knowledge and Attitude of Obstetric Care Providers on Partograph and its associated factors in

East Gojjam Zone, Northwest Ethiopia, 86.2% of respondents had partograph training while in school of midwifery, 13% said they were not trained in the midwifery school. The source of knowledge on partograph needs to be determined in Uganda.

With regards to the knowledge of different components of the partograph, Ollerhead & Osrin (2014) in a cross-sectional quantitative study to assess the barriers to and incentives for achieving partograph use in obstetric practice in low-and middle-income countries affirms that knowledge of the function of both alert line and action line were poor. Results from the same study reveal that there was no statistically significant difference between respondents from hospitals and health Centers regarding correctly mentioning at least one component of the partograph [Crude OR = 2.3 (95% CI: 0.44, 11.50)]. The present study will be conducted in lower health units of Kiryandongo district to assess factors affecting partograph utilization among midwives from lower health facilities.

The above studies revealed that even though midwives may have good knowledge of the partograph, there is poor utilization of the partograph in monitoring women in labor in health facilities. Though the utilization of partograph is part of pre-service education program of midwives, the reality on the field may be affected by different factors which are subject to findings in the present study.

2.3 Use of partograph

The utilization of partograph requires skills, as part of the Safe Motherhood Initiative. WHO's partograph clearly differentiates normal from abnormal progress in labor and identifies those women likely to require intervention. Its use in all labor wards is recommended (Asibong et al., 2014). Findings from the study on knowledge and utilization of the partograph among midwives in the Niger Delta region of Nigeria, inferred that despite midwife's good knowledge of the partograph, there was poor utilization in labor monitoring in both centers. Assessment of utilized partograph charts revealed that only 37.5% in Federal Medical Centers and 32.6% in Niger Delta University Teaching Hospital were properly filled (Opiah, Ofi, Essien, & Monjok, 2012).

The problem of filling the partograph was also felt in the study conducted by Fawole, Adekanle, & Hunyinbo (2010) in Southwestern Nigeria where by high proportions of incompletely recorded parameters on the partograph were identified. Likewise, Okokon et al. (2014) in a study conducted

in Calabar, South-South Nigeria only 18, 85% partograph were found to be correctly filled. Such poor level of utilization is yet to be determined in Kiryandongo.

Similarly, Zelellw et al (2016) in a cross sectional study analyzed the utilization of the partograph in primary health facilities in East Gojjam Zone, Northwest Ethiopia. Gross deficiencies have been highlighted in relation to knowledge about normal characteristics during labor. Hence, in Kiryandongo, there is a need to ascertain the extent to which midwives use this tool to monitor pregnant mothers in labor.

Furthermore, a gap in quality of using partograph has been the subject of discussion in the study by Aliona Masika et al., (2015) conducted in Bwera hospital, Kasese. Adesola, Omolola, Adekemi, & Audu (2014) confirms poor use of partograph during labor and recommend training of health workers on partograph use, provision of guidelines and adequate resources.

Underwood et al., (2014) confirm insufficient skills by findings from a study conducted to assess the improving partograph training and use in Kenya using the partopen digital pen system. The ability to monitor pregnant mothers during labor using the partograph continues to be the subject of discussion by many authors. For instance, Yisma, Dessalegn, Astatkie, & Fesseha (2013) in their study using criterion based audits of medical care and services, reported that, overall quality of care was poor with non-use of partograph. A need for development of clinical guidelines and protocols was felt. There is no study that has focused on partograph as a major contributor to efficient and effective labor management in different health institutions in Rwanda, particularly focusing on both rural hospitals and health centers. Hence, findings from this current study are vital in improving efficiency in labor management.

Likewise, Ollerhead & Osrin (2014) conducted a cross sectional study to understand Barriers to and incentives for achieving partograph use in obstetric practice in low- and middle-income countries: a systematic review. Their findings showed that only 32.3% used the partograph to monitor women in labor. Partograph use was reported significantly more frequently by respondents in tertiary level compared with respondents from primary/secondary levels of care. The health system in Rwanda is no different from Nigeria, and the partograph is more likely to be well used in secondary and tertiary level than in primary level

Though, in some developing countries a paper based partograph still needs improvement, in order to improve its utilization, in some other countries technology has been advanced to monitor pregnant mothers during labor. Nunes, Ayres-de-Campos, Figueiredo & Bernardes (2013) in a review article entitled “An overview of central fetal monitoring systems in labour” assert that a variety of systems for centralized viewing of fetal signals during labor are currently available, allowing simultaneous monitoring of multiple tracings in one or more locations. This system displays maternal vital signs, and an electronic partograph is available in majority of these systems. Underwood, Sterling & Bennett (2013) present the “PartoPen Maternal Health Monitoring System” in their paper. As explained by the authors, the goal of the PartoPen project is to increase the effectiveness of the partograph, using an interactive digital pen with custom software, together with partograph forms printed with a background dot pattern that is recognized by the pen (Underwood *et al.*, 2013). In Rwanda, a printed paper form of partograph is in use in different health facilities but its proper utilization has been assessed by the present study.

2.4 Challenges/limitations in the utilization of partograph

As presented earlier in this study, the partograph is a form on which labor observations are recorded to provide an overview of labour, aiming at alerting obstetrical care providers to deviations in labour progress as well as maternal and fetal well-being. When deviations in labour progress are recognized earlier and corrected, complications are prevented and normal labour and delivery can occur. Byukusenge *et al.*, (2016) reported that the use of the partograph during labour was affected by factors such as lack of knowledge, lack of training of obstetric care givers on the use of the partogram and lack of positive attitude towards the use of the partogram.

In addition to the above, Asibong *et al.* 2014) in a cross-sectional study involving observations; recorded reviews and interviews, concluded that the poor use of partogram during labour is mainly affected by health input factors. The researchers recommended training of health workers on partogram use, provision of guidelines and adequate resources.

Qureshi *et al.*, (2010) in a rapid assessment of partograph utilisation in selected maternity units in Kenya, use of the partogram for labour monitoring among various categories of primary health care workers where a total of 242 partographs of women in labour were plotted over a 1-year period. From these results, the authors concluded that lower cadres of primary health care workers can be

effectively trained to use the partogram with satisfactory results, and thus contribute towards improved maternal outcomes in developing countries with scarcity of skilled attendants.

With regards to in-service training; Byukusenge et al., (2016), in a study to estimate systematically the inflow and outflow of health workers in Muhima Hospital, Rwanda, suggests that pre-service training needs to be expanded as well as combined with other measures to increase health worker inflow and reduce the rate of outflow. Moreover, in the study conducted by Souza et al., (2015) to assess effectiveness of a planned teaching program on knowledge and skill in the use of partograph among nurses working in maternity units, inferred that the planned teaching program was effective to improve knowledge and skills on partogram.

Similarly, Mandiwa & Zamawe (2017) observed inadequate use of partogram associated with lack of trained personnel. This could be also applicable to Rwanda where only 70% of deliveries in rural areas like Kiryandongo are assisted by skilled health care attendants (UBOS, 2016).

CHAPTER THREE:

METHODS

3.1 Introduction

This chapter presents the research design and methodology employed by the study to address the objectives and questions under study. It begins with a description of the study design, the target population, study setting, data collection and analysis and validity as well as reliability. The last section of the chapter provides ethical issues related to the study.

3.2 Study design

This study adopted a descriptive quantitative and cross-sectional research design to gather information on utilization of partogram among midwives in Kiryandongo lower Health units.

3.3 Population and sample

The study population and sample included all midwives who provide obstetrical care to pregnant mothers during labour in the study area. According to Grove, Burns & Gray (2013); the entire population may be the target of a study when the population is small and well defined. There is a total of 65 midwives working in Kiryandongo lower health units. Therefore, the sample size will be 65.

3.4 Setting of the study

The present study was conducted in Kiryandongo District and specifically in the lower health units that conduct deliveries (Kigumba H/C, Masindi Port H/C, Panyadoli H/C, Panyadoli H/C (PNFP), Karungu H/C, Diika H/C, Mutunda H/C, Nyakadodi H/C, St. Mary's Kigumba H/C(PNFP), Nyabwengi H/C, Katulikire H/C, Apodorwa H/C, Diima H/C, Karungu H/C, Karuma H/C, Mpumwe H/C, Tecwa H/C, Kigumba Medical Centre(PFP), Kiroko H/C, Kigya H/C and Kaduku HC. Kiryandongo district, is in Bunyoro Kitara region of western Uganda. It is bordered by districts of Nwoya in the north, Nakasongora in the South, Masindi in the West and Apac in the East. The district has one Town council and It covers a 1399 M² area (National Population and Housing Census, 2014).

The 2014 national census estimated the population of the district to be 266, 197 (133701 males and 132496 females). The economy of the area is predominantly agricultural with the majority of the population dependent on subsistence farming and light agro-based industries. Hence most people earn their livelihoods in the agricultural sector in particular crop farming. Major crops grown in the

district are Cassava, Maize, G/nuts, Millet, Vegetables & Sun flower. The District was specifically selected for this study due to its rural location where cultural practices and pressures are high.

3.5 Methods of data collection

3.5.1 Data collection tool

A self- administered pretested questionnaire was used to collect data.

3.5.1.1 Variables under study

The dependent variable of this study was the use (proper /not proper use) of partograph by midwives in Kiryandongo lower health units, while the independent variables are socio-demographic variables and other important variables under study.

3.5.2 Validity and reliability

A pre-test of the data collection instrument was carried out to enhance the validity and reliability of the questionnaire.

3.5.2 Procedure for data collection

After obtaining the ethical clearance and permission from the District Health officer and the District administrative officer, the investigator in collaboration with the unit in charges made an appointment to meet with midwives. The questionnaires were given to all midwives who were willing to participate in the study after having signed a consent letter. The investigator explained to midwives the purpose and nature of the study. Confidentiality was explained to respondents before completing the questionnaire, requesting them not to include any names. They were requested to complete a questionnaire as soon as possible and return it to the investigator within 2 days.

3.6 Data analysis

The researcher used Statistical Package for Social Sciences (SPSS 21.0) to capture and analyze data. After data collection, the researcher proceeded with data entry, followed by data cleaning as well as data screening, to ensure that there were neither errors nor missing data. Data was then analyzed, and results summarize in frequency distributions of the variables under study. The relationship between dependent and independent variables (socio-demographic variables and other selected variables under study) were determined. In this case, the cross-tabulations together with the chi-square test for independence were employed for categorical variables and a p-value of <0.05 was considered significant.

3.6 Ethical clearance

An approval to conduct this study was sought from the dean faculty of clinical medicine and dentistry prior to the study. Introduction letter was given and taken to the Chief Administrative Officer through the District Health Officer for permission to collect data. Informed consent was obtained from the Health care providers who were willing to participate in the study. Confidentiality was enhanced throughout the study process, including the process of data collection and in reporting. Coding was used instead of the names of the participants hence protection of their privacy.

CHAPTER FOUR: PRESENTATION OF FINDINGS

4.1 Introduction

This chapter presents the results of the current study. A total of 65 questionnaires were distributed among midwives attending to pregnant mothers in labour in Kiryandongo lower health units, out of which 60 questionnaires were fully completed, and thus giving a response rate of 92.3%. One of the distributed questionnaires had missing data and was therefore excluded from analysis, and 4 were not returned. Hence data from 60 (N=60) self-administered questionnaires were analyzed using the Statistical Package for Social Sciences (SPSS) version 21 to capture and analyze data.

4.2 Sociodemographic data

The participants' ages ranged from 20 to 49 years, with a mean age of 31.1 years (SD=7.6). The ages were recorded into six different age groups with age interval of five years.

Most respondents were certificate holders (88.3%). Almost a half of participants (45%) had a professional experience between 0 to 4 years as shown in table 1 below.

Table 1: Distribution of demographic characteristics of respondents (N=60)

Variables	Frequencies(n)	Percentage (%)
Age group		
20-24	23	38.3
25-29	7	11.7
30-34	10	16.7
35-39	1	5.0
40-44	16	26.7
45 and above	3	1.9
Total	60	100
Professional qualification		
Certificate	53	88.3
Registered Nurses	7	11.7
Total	60	100
Years of experience		
0-4 years	27	45
5-9 years	17	28.3
10-14 years	6	10
15 years and above	10	16.7
Total	60	100

4.3 Midwives' knowledge of partogram

The results show that, all the 60 (100%) midwives studied had already used the partogram previously and 95% of them agreed that the partogram is a simple graphic recording progress of labour and salient conditions of mother and fetus against time in hours. All the respondents (100%) knew the function of the partogram as one of the tools to implement safe motherhood program. A big percentage of 95% of participants acknowledged the use of partogram in reducing maternal mortality with 100% agreeing that this tool plays a key role towards reducing newborn mortality. 88.3% of the respondents agreed that, action line of partogram plot falls on the left of the alert line, with only 11.7% disagreeing.

All the respondents(100%), agreed with the right role of action line on the partogram to take appropriate action and 66.7% of respondents were of the view that in normal labour, the minimum duration of a strong contraction is 40 seconds, while 33.3% opposed this view. Results further show

that 95% of respondents agreed that at least ten minutes are required to effectively assess adequacy of uterine contractions.

Table 2: Midwives' knowledge of the partogram (N=60)

Variables	Agree	Disagree
	Frequencies (%)	Frequencies (%)
Partogram is a simple graphic recording of progress of labour and salient conditions of mother and fetus against time in hours	57 (95%)	3 (5%)
Partogram is used to implement the safe motherhood program	60 (100%)	0 (0%)
Reduce maternal deaths	57 (95%)	3 (5%)
Reduce new born deaths	60 (100%)	0 (100%)
In a normal progress of labour, the graph/plot on Partogram should fall on the left of alert line	53 (88.3%)	7 (11.7%)
In normal labour, minimum duration of a strong contraction is 40 seconds	40 (66.7%)	20 (33.3%)
10 minutes are required to effectively assess adequacy of contractions	57 (95%)	3 (5%)
Labour is prolonged when it lasts more than 12 hours	50 (83.3%)	10 (16.7%)
The function of the action line on the partogram indicates that appropriate action must be taken	60 (100%)	0 (0%)

4.4 Characteristics of partogram utilization and challenges

As presented below in table 3, a large number of participants (95%) were of the view that it is a managerial policy that all women in labour should be monitored with a partogram and 88.3% were using the partograph routinely. All the participants (100%) considered the partogram useful in obstetric review; however, only 33.3% were using the partograph properly.

All the respondents (100%) agreed that there is need to develop a managerial guideline concerning partograph and need to be trained on job on how to use the partogram.

Also, important to note is that all the respondents (100%) reported working one staff per duty.

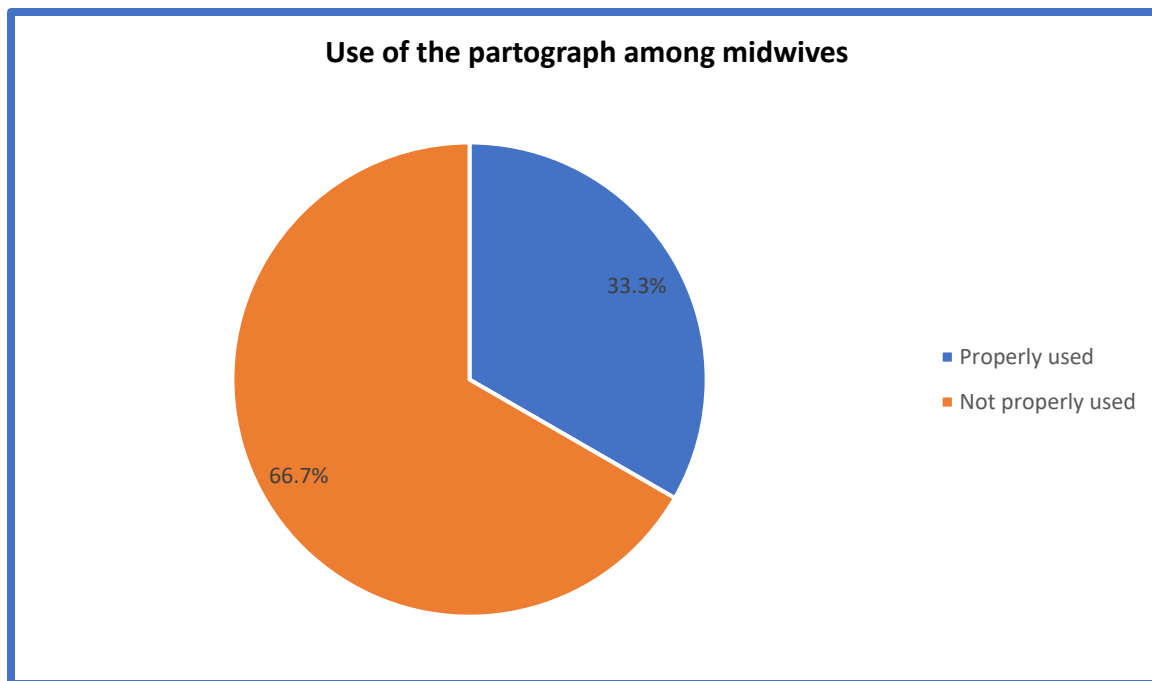
Table 3: The use of partogram and its associated challenges (N= 60)

Variables	Frequencies (n)	Percentage%
Partogram available in work place	60	100
It is a policy to monitor pregnant mothers in labour using the partogram		
Yes	57	95
No	0	0
Don't know	3	5
Total	60	100.0
How often do you use the partogram?		
Routinely	53	88.3
Rarely	3	5.0
Occasionally	4	6.7
Total	60	100.0
Partogram used in obstetrical review		
Agree	60	100
Disagree	0	0
Don't know	0	0
Total	60	100.0
Use (Properly or not properly) of partogram by midwives		
Properly used	20	33.3
Not properly used	40	66.7
Total	60	100.0
Need to develop managerial guidelines/protocol on using the partogram		
Agree	60	100
Disagree	0	0
Total	60	100.0
Need to be trained on partogram		
Agree	60	100
Disagree		0
Total	60	100.0
Number of staff working per shift		
1	60	100
2	0	0
3+	0	0

4.5 Distribution of respondents according to utilization of partogram

As presented above (refer to table 3), and in figure 1 below, it was found that only 33.3% of midwives used the partogram properly, whereas 66.7% did not use it properly. The figure below presents the distribution of participants according to the dependent variable of the present study (use of partogram).

Figure 1: Distribution of respondents according to the use of partogram among nurses and midwives (Properly used or not properly used)



4.6 Factors influencing the use of the partogram

Analysis was done to find some of the factors that affect the use of the partogram. The level of significance was set to 95%. This means that any p-value less than 0.05 indicated that there is a statistical significant association between two variables under study.

The results (as shown in table 4 below), indicated that among the factors believed to affect the use of partogram, those having a significant association with its use are only professional qualification ($P=0.001$), years of professional experience ($P=0.033$) and in-service training received ($P=0.000$).

Table 4: A summary of association between use of partogram and selected variables

Characteristics	Use of partogram		Total (%)	P-Value
	Properly used (%)	Not properly used (%)		
Qualification level				
Certificate	15 (28.3)	38 (71.7)	53 (88.3)	0.001
Diploma	5 (71.4)	2 (28.6)	7 (11.7)	
Total	20 (33.3)	40 (66.7)	60 (100)	
Years of experience				
0-4 years	10 (37)	17 (63)	27 (45)	0.033*
5-9 years	5 (29.4)	12 (70.6)	17 (28.3)	
10-14 years	2 (33.3)	4 (66.7)	6 (10)	
15 years and above	3 (30)	7 (70)	10 (16.7)	
Total	20 (33.3)	40 (66.7)	60 (100)	
In service training				
Yes	15 (68.2)	7 (31.8)	22 (36.7)	0.000*
No	5 (13.2)	33 (86.8)	38 (63.3)	
Total	20 (22.3)	40 (66.7)	60 (100)	

* Significant

CHAPTER FIVE: DISCUSSIONS, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This final chapter discusses the study's results in relation to the objectives as well as relevant literature reported from different studies and draws conclusion depending on findings.

5.2 Discussion of findings

5.2.1 Knowledge and use of partogram among Midwives

The present study focused on midwives' knowledge and use of partogram to gain an insight into how they monitor obstetric labour given the high levels of maternal and neonatal mortality in Uganda. The results indicate that 95% of all of respondents (60) knew what a partogram was and all the respondents (100%) knew its role as a tool to implement the safe motherhood program. The findings are in line with the results of the study by Radomsky et al., (2017) which did a retrospective analysis of intrapartum stillbirth data at the Fort Portal Regional Referral Hospital, Southwestern Uganda, with results showing that majority of midwives (88%) reported that a partogram is a tool of decision making in the labour ward, and (98%) confirmed that the correct use of partogram can improve the management of pregnant women in a labour ward.

Although, all the respondents (100%) knew the function of the action line, only 53 (88.3%) of the respondents knew that, in normal progress of labor, the plot/graph should be on the left of the alert line indicating poor knowledge. This indicates the need for urgent steps to improve the knowledge of midwives on the partogram through training and seminars in order to maximize the utilization and proper use of the partogram. This concurs with findings by Ollerhead & Osrin, (2014b) where 53.3 % respondents could correctly explain the function of alert line while 53 (27.2%) and 38 (19.5%) of the respondents gave incorrect explanation and didn't know the correct function of alert line at all respectively .

This study, however, shows higher knowledge compared with a study done in East Gojjam Zone, Northwest Ethiopia (Zelee et al. 2016), in which about 119 (16.6%) of the respondents could explain the function of alert line, while 175 (24.3%) could explain the function of action line. This could be due to differences in the approaches of pre-service training of midwives in Uganda and Ethiopia. This result implies that knowledge of midwives on partogram may be inadequate for better

utilization of partogram in health institutions where the study was conducted. This also relates to another study conducted in Ethiopia (Wakgari et al., 2015).

Despite the fair knowledge of the partogram among the participants, there was poor utilization in labour monitoring considering that WHO recommended its widespread use for all women during labour (Radomsky et al., 2017). Less than half of participants (33.3%) were found to properly use the partogram compared to 66.7% who were found not properly using the partogram. Several and similar studies in Africa confirmed the low utilization of the partogram (Opiah, Ofi, Essien, & Monjok, (2012), Okokon et al. (2014), and Zelellw et al (2016). Inadequate knowledge and improper utilization of this simplified tool could be part of the reason for the high maternal mortality in developing countries especially in Africa (Underwood et al., 2014). This requires the need for regular pre-service and on-job training of nurses and midwives on use of the partogram to safely monitor pregnant mothers in labour.

5.2.2 Challenges facing midwives during utilization of partogram

With respect to professional qualification of respondents in the present study, the findings confirm the problem of shortage of skilled birth attendants in Uganda. All the respondents who participated in this study (100%), reported working one staff per shift of duty. Most respondents were enrolled midwives (certificate). According to Asibong et al. (2014), midwives form the bulk of the skilled birth attendant in all levels of health care. Their knowledge on partographic labour monitoring is thus a significant factor for prevention of obstructed labour.

The present study suggests regular pre-service training of midwives and deployment of skilled birth attendants in rural health facilities. To buttress this, Mandiwa & Zamawe (2017), in the study to evaluate health workers' training on use of the partogram reported that lower cadres of primary health care workers can be effectively trained to use the partogram with satisfactory results, and thus contribute towards improved maternal outcomes in developing countries with scarcity of skilled attendants. The majority of midwives who participated in this study reported the need to develop managerial guidelines/protocols on how to use the partogram to ensure its proper utilization.

The above suggestion aligns with the overall objective of human resource for health under the Ministry of Health of Uganda as stipulated by the third Health Sector Strategic Plan (HSSP III) which is to ensure availability of an adequate, equitably distributed, qualified, motivated and productive workforce responsive to the country's changing needs and demands (MoH, 2010). In contrast to previous studies (Byukusenge et al., 2016) and (Asibong et al. 2014) on the problem of non-availability of partogram in health facilities, all participants (100%) in the present study reported availability of partogram in their health institutions.

5.2.3 Factors that facilitate the use of partogram among midwives

Although all the midwives interviewed in this study had formal training on how to use the partogram, the impact of such training was not reflected in their performance; the tool was poorly utilized. Results from the present study revealed a statistical significant association between the utilization of partogram and whether the midwives had received in-service training, the number of years of experience, as well as the professional qualification.

Results from the present study revealed that, there was a significant relationship between the use of partogram and whether midwives who participated in this study received in-service training (p -value = 0.000). This is in line with literature confirming this relationship (Opiah, Ofi, Essien, & Monjok, 2012). The fact of being trained in the management of pregnant mothers in labour has been as well a strong predictor in the use of the partogram. These findings are confirmed by the results from Okokon et al. (2014), where more obstetric care givers who had not been previously trained on the partograph had lesser odds of utilizing the partograph compared to those who had been previously trained.

The number of years of professional experience was also another predictor to the proper use of partogram. The results revealed that the more years of professional experience midwives have in practice, the more likely they are to properly use the partogram. There was a significant relationship between the years of professional experience of nurses and midwives and their use of the partogram ($P=0.033$). This finding is similar to findings from the study of Fawole, Adekanle, & Hunyinbo (2010), in South Nigeria, which found support for the relationship between knowledge and years of professional experience.

Finally, another factor found to influence the use of partogram was the professional qualification. This is closely linked to the shortage in midwifery workforce, and yet registered midwives

(diploma) are not enough to attend effectively to pregnant mothers in labour country wide. Mandiwa & Zamawe (2017) confirm the relationship between the professional qualification and the utilization of partogram. The present study suggests regular formal training combined with in-service training of nurses and midwives for a better monitoring of pregnant mother in labour.

5.3 Conclusion of the study

In summary, a significant percentage of midwives in this study have fair knowledge of the partogram and why it is necessary to use it in the management of labor. However, despite fair knowledge, a large percentage of participants poorly completed the partogram. Years of professional experience, having received in-service training on managing pregnant mothers in labour and qualification level were found to be both predictors for the likelihood for the proper use of partogram. The findings in this study could be useful in designing professional continuing education programs for nurses and midwives as well as formulating policies that may influence delivery of care to pregnant mothers in labour.

5.4 Limitations of the study

The sample size was part of the limitations for the present study. The study was only conducted in 21 health facilities in Kiryandongo district. This implies that the findings cannot be generalized to the whole country since it is limited to some health facilities in the Kiryandongo district. Moreover, the methodology especially the quantitative design used in this study to describe factors affecting the utilization of partogram, generated data that could not assess the quality in documenting the partograph and determine the outcomes of the mother and the newborn. Therefore, below recommendations are made to improve delivery of care to pregnant mothers in labour.

5.5 Recommendations

Despite the limitations, the findings may be useful to health care professionals, program managers and policy makers. The key recommendations therefore concern shortage of staff members, shortage of midwives, training of midwives and a call for further research.

- Human resource shortage (particularly midwives) is a longstanding problem but there is a need for appropriate deployment and improved commitment to their work.
- The scientific process based on process of assessment, planning, implementing and evaluating health care delivery is required in midwifery practice. This implies that actions

need to be based on knowledge and evidence. Hence, it is important that midwives are empowered with necessary knowledge and skills that are linked to job responsibilities and roles. Thus, the emphasis of training of midwives in partographic labour monitoring should be mandatory in all schools of nursing and midwifery and Periodic workshops and seminars should be organized for nurses and midwives and other.

- Further research is required to assess the use of the partogram in other primary, secondary and tertiary level facilities to establish pattern of utilization and documentation which would help to improve monitoring of pregnant mothers in labour and hence reduce maternal and neonatal mortality rates.

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ANNEX

ANNEX I: CONSENT FORM

Research Title: Factors affecting partograph utilization in Kiryandongo District: a case of midwives in lower health units'

The study has been described to me in a language that I understand, and I freely and voluntarily agree to participate. My questions about the study have been answered. I understand that my identity will not be disclosed and that I may withdraw from the study without giving a reason at any time and this will not negatively affect me in any way.

Participant's Initials:

Participant's Signature:

Date:

Should you have any questions regarding this study or wish to report any problems you have experienced related to the study, please contact the study supervisor:

DR MULWANA JOHNE

Faculty of Clinical Medicine and Dentistry,

Department of Obstetrics & Gynecology - KIU Western Campus

P. O. Box, 71,

Ishaka, Bushenyi

ANNEX II: QUESTIONNAIRE ON PARTOGRAM

Dear Respondent,

I am **Musiime Agnes**, undergraduate student at KIU Western Campus doing Medicine and surgery. I am carrying out a study to describe Factors affecting partograph utilization in Kiryandongo District: a case of midwives in lower health units'.

The research is purely for the academic purpose. It will however provide data to describe factors affecting the utilization of partogram among midwives during labour monitoring. This may be useful and contribute to the improvement of the quality of care for women in labour. Participation to this study is strictly voluntarily and anonymity will be respected.

I solicit your cooperation to participate in this research. You are required to fill this questionnaire with the options that best represent your response.

Information provided will be treated with confidentiality.

SECTION A: Demographic Characteristics: Tick as applicable.

1. Age: in Years as at last birthday

2. Sex: Female Male ☐

3. Professional qualification/ Educational level

1. Diploma midwife ☐

2. Certificatemidwife ☐

4. When did you qualify from pre-service training?

This year ☐

Two years ago ☐

Three years ago ☐

Four years ago ☐

Five years ago ☐

and more

5. Did you receive any in service training in the management of a pregnant mother in labour?

1. Yes No ☐

If yes answer the following question

6. In service training received in management of pregnant mother in labour

Emergency Obstetric and Neonatalcare (EmONC)

Advanced Life Support in Obstetrics

None of the above

☐
☐
☐

7. Years of experience:.....(Years)

8. Your place of work Health Center ☐

9. What is your unit/ward of practice?

Antenatal Clinic Family planning ☐ Labour ward ☐

Post natal ward ☐

Other units (Specify) :.....

10 What is the average number of nurse-midwife per shift in your unit while working in labourward?

- 1 per shift ☐
- 2 per shift ☐
- 3 per shift ☐
- 4 per shift ☐
- 5 per shift ☐
- 6 or more per shift ☐

SECTION B: *Knowledge on the Partogram: Tick as applicable.*

10. Have you ever used a Partogram before?

Yes

No

☐

11. For you, the partogram may be defined as:

11.1. A chart for monitoring of labour by doctors: Yes ☐ No

☐

11.2. A complex tool with pictorial overview of labour for the use by midwives: Yes No ☐

11.3. A simple graphic recording of progress of labour and salient conditions of mother and fetus against time in hours: Yes No

☐

12. Did you receive any training on the use of partogram? Yes No

13. If yes, where did you train on the use of partogram?

13.1. From a colleague Yes ☐ No ☐

13.2. From a medical doctor Yes ☐ No ☐

13.3. From school Yes ☐ No ☐

13.4. From in –service training Yes ☐ No ☐

14. Are you willing in service training on the use of Partogram?

Yes ☐ No ☐

15. Indicate your understanding about the partograph by choosing YES or NO:

Questions	Yes	No
16.1 The Partograph is one of the tools for implementing safe motherhood		
16.2. The partograph will reduce maternal deaths		
16.3. The partograph will reduce new born deaths		
16.4. In a normal progress of labour, the graph/plot on the Partograph should fall on the alert line		
16.5. In a normal progress of labour, the graph/plot on Partograph should fall on the left of alert line		
16.6. In a normal progress of labour, the graph/plot on Partogram should fall on the right of alert line		
16.7. In normal labour, a woman has got 3 contractions in every 10 minutes		
16.8. In normal labour, minimum duration of a strong contraction is 40 seconds		
16.9. You require 10 minutes to effectively assess Adequacy of contractions		

16.10. Progress of labour is assessed by the degree of cervical dilatation and descent of the presenting part		
16.11. Labour is prolonged when it lasts more than 12 hours		

16. The following are functions of the action line on the Partograph

16.1. Indicates appropriate action must be taken: Yes ☐
No ☐

16.2. Allows time for the woman to be adequately assessed for appropriate intervention

Yes ☐ No ☐

16.3. Continuous observation till delivery: Yes No ☐

17. In your hospital/practice, you usually enter information onto the Partogram?

17.1. Upon diagnosis of labour: Yes ☐ No ☐

17.2. While the woman is still in labour: Yes ☐ No ☐

17.3. After delivery of the baby: Yes ☐ No ☐

SECTION C: Characteristics of Partogram utilization: *Tick as applicable.*

18. Is the Partogram available in your labour ward? Yes No

19. Is the Partogram used to monitor patients during labour in your hospital/Health Center?

Yes ☐ No ☐

20. If *Yes* how often is it used?

Routinely ☐ Rarely ☐ Occasionally ☐

21. Is the Partograph used to monitor every woman in your hospital/Health Center

Yes ☐ No ☐

22. How often is it used once active phase of labour started?

Once/30 Minutes Once/Hour Once/4 Hours Once /6 Hours Once/12 Hours

☐

23. Do you consider Partogram useful in obstetric review?

Yes

No

I don't know

☐

24. Is it a managerial policy that all women in labour should be monitored with a Partogram?

Yes

No

I don't know

☐

25. The following diagnosis/assessment, can be made with the Partogram

25.1.	Fetalwell being	Yes	<input type="checkbox"/>	No	<input type="checkbox"/>
25.2.	Maternal wellbeing	Yes	<input type="checkbox"/>	No	<input type="checkbox"/>
25.3.	Progression of the labour	Yes		No	<input type="checkbox"/>
25.4.	Medication used during labour	Yes		No	<input type="checkbox"/>

SECTION D: Factors affecting utilization of the Partogram in labour monitoring: *Tick as applicable.*

27. Do you consider non-availability of the Partogram a problem in monitoring of labour?

Yes

No

☐ ☐

28. Do you think managerial guidelines/protocols developed for each unit can facilitate effective use of partogram. Yes No ☐

ANNEX III: BUDGET

Items	Estimated expenditure(Ugandan shillings)
Stationery	30,000
Photocopying, printing and binding	200,000
Modem	120,000
Transport	300,000
Air time	30,000
Accommodation	80,000
Meals and refreshments	80,000
Research assistants	220000
Miscellaneous	100,000
Facilitation	50,000
Computer	1,000,000
Grand total	2,210,000

ANNEX IV: WORKPLAN

Activities	Date			Responsibility
	January 2018	February 2018	March 2018	
Proposal writing and approval				Researcher and Supervisor
Collecting introductory letter from faculty of Clinical Medicine and Dentistry				Researcher
Field visiting and orientation and seeking permission for research study				Researcher and research assistants
Training of research assistants				Researcher
Data collection				Researcher and research assistants
Data analysis and report writing				Researcher and research assistants
Report approval submission				Supervisor

ANNEX V: INTRODUCTORY LETTER



OFFICE OF THE DEAN
FACULTY OF CLINICAL MEDICINE & DENTISTRY

02/01/2018

TO WHOM IT MAY CONCERN

RE: MUSIIME AGNES (BMS/0256/102/DU)

The above named person is a fifth year student at Kampala International University pursuing a Bachelor of Medicine, Bachelor of Surgery (MBChB) Programme.

She wishes to conduct her student research in your community.

Topic: Factors affecting partograph utilization in Kiryandongo district. A case of midwives in lower health units

Supervisor: Dr. Mulwana Johnie

Any assistance given will be appreciated.

S.O. Akib

Dr. Akib Surat O
Assoc Dean FCM&D



"Exploring the Heights"

Assoc. Prof Ssebuufu Robinson, Dean (FCM & D) 0772 507248 email: ssebuufu@gmail.com
Dr. Akib Surat Associate Dean FCM & D) email: doctorakib@yahoo.com

ANNEX VI: ACCEPTANCE LETTER

KAMPALA INTERNATIONAL UNIVERSITY (WC)

P.O BOX 71,

ISHAKA BUSHENYI MUNICIPALITY,

BUSHENYI DISTRICT,

1 / 03/ 2018

THE CHIEF ADMINISTRATIVE OFFICER,

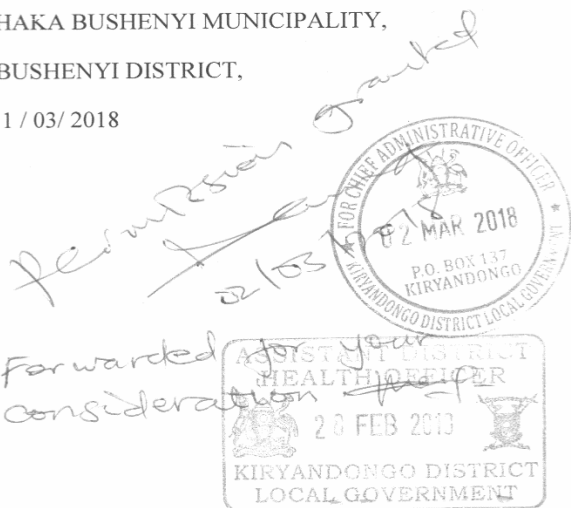
KYIDYANDONGO DISTRICT,

THROUGH;

THE DISTRICT HEALTH OFFICER;

KYIDYANDONGO DISTRICT,

DEAR SIR/ MADAM;



RE: REQUEST FOR PERMISSION TO CONDUCT RESEARCH

I humbly ask for permission to conduct research in Kyidyandongo district lower health units. I am Musiime Agnes a fifth year medical student in Kampala International University pursuing bachelor of Medicine, Bachelor of surgery. I have been attached to Kyidyandongo Hospital by the University since 12/ 10/ 2017 for clinical practice, knowledge and skills acquisition. For that matter having rotated in maternity ward, I got interested in finding out if there could be some factors affecting partograph utilization in the lower Health Units, this case study shall be among midwives in these lower Health Units.

Thanks for your consideration.

Yours faithfully... *Musiime Agnes*

MUSIIME AGNES

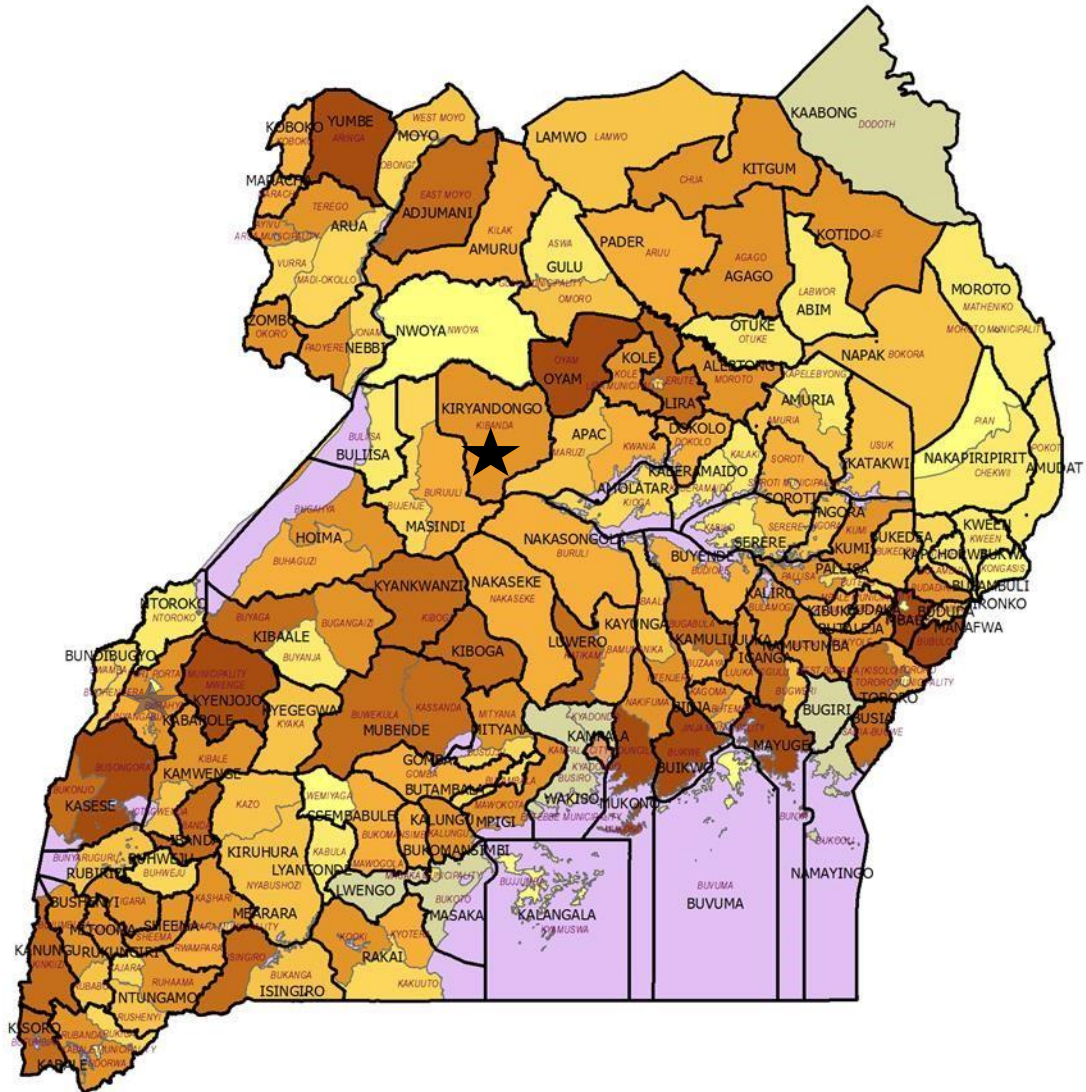
Attached are the copies of;

The introduction letter, and the questionnaire.

ANNEX VII: MAP OF KIRYANDONGO DISTRICT



ANNEX VIII: MAP OF UGANDA SHOWING KIRYANDONGO DISTRICT



KEY:



Location of Kiryandongo District