

**Assessment of Partograph Utilization among Obstetrics Caregivers of Public
Hospitals in Ogun State**

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of Basic Medical and Applied Science, Lead City University, Ibadan, Oyo
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Certification

This is to certify that Mobolaji Abisola GBENRO with matriculation number LCU/PG/001545 carried out this research work titled “Assessing The Utilisation Of Partograph Among Obstetrics Care Givers: A Cross Sectional Study Of Public Hospitals In Ogun State” in the Department of Public Health, Faculty of Public Health, Lead City University, Ibadan, Oyo state, for the award of Masters Degree (M.Ph) in Public Health and that this has not been previously submitted.

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Dedication

This research work is dedicated to God Almighty

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Acknowledgement

I acknowledge the grace of God in all my endeavors, and I gratefully acknowledge the staff of the State Hospitals and Flagship Primary Healthcare Centres used in my study.

I'm grateful to my supervisor Dr. Oladele who imparted to me the knowledge, wisdom, and understanding brought into use at every stage of my project, may God in his infinite mercy grant all your heart desires. I also celebrate every lecturer in my department for imparting in me knowledge.

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“Even though the above-mentioned institutions and persons have assisted in the process of this research work, I alone stand responsible for the errors, if any, found in the work”.

Abstract

The partograph is a printed chart on which observations in labor are recorded in a graphic format by Obstetrics caregivers. Despite its importance, the partograph is poorly used. It is based on this premise that this study considered Assessment of Partograph Utilization among obstetrics caregivers. There are a few studies focusing on Obstetric caregiver related factors and health facility factors and their influence on utilization of the partograph among Obstetrics caregivers working in maternity units, but the majority of studies have been done in other parts of the world and not only in Nigeria, according to the reviewed literature. An institutional based study design was employed by this study. The study population includes all obstetric care providers working in all selected Public Hospitals. A total 419 respondents returned the instrument given to them. The findings of the study revealed that 71.79% indicated that at their last use of partograph, membrane intact was recorded, 52.5% cited unavailability of partographs as a barrier, 52.75% indicated little or no knowledge to be a barrier, 80.4% of respondents in this study indicated shortage of staff, 78.5% indicated lack of trained human power, 93.77% indicated that partographs will reduce maternal mortality. The researcher concluded that majority of the respondents have a poor level of knowledge. A statistically significant association was found between profession, usage of partograph, ever trained to use partograph, sex, marital status and knowledge of partograph. The result of the findings shows that male respondent are 3.95 less likely to use partograph compared to their counterpart who are female at (0.088, 0.726 CI). Respondent that are single are 33.3 less likely not to use partograph compared to their counterpart who are widowed/separated at (0.007, 0.125 CI). There should be continuous education of obstetrics care providers on the benefit of routine utilization of partograph.

Keywords: Partograph, Utilization, Caregiver

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Chapter One

Introduction

1.1 Background to the Study

Labour, the process of giving birth, is often a difficult time for many pregnant women. The process requires adequate management by midwives and obstetricians for pregnant women to have a safe delivery. One of the tools recommended by the World Health Organization (WHO) and utilized by midwives to effectively manage labour is the partograph. Partograph is derived from the Latin word partum (childbirth) + graph, which means 'labour curve'. The partograph is a printed chart on which observations in labour are recorded in a graphic format to provide midwives and obstetricians information about the progress of labour and to monitor maternal or fetal wellbeing¹.

Partograph is a monitoring tool for the active stage of labour, which allows the trained health worker attending to the mother in labour to monitor the progress of labour, the mother, and the fetus, and to have a clear means of tracking labour progress with "alert" and "action lines" signaling when labor is complicated². The partograph consists of three parameters, namely fetal condition, maternal condition, and the progress of labor. The aim of the partograph is to provide a pictorial overview of labor and to alert midwives and obstetricians to deviations in maternal or fetal well-being and labor progress. It has been documented that a partograph could constitute a legal document and act as an avenue for identifying accountability in midwifery practice⁵.

The partograph or partogram has been established as the "gold standard" labor monitoring tool universally. The partograph is an "easy-to-use" tool, but if not used correctly, it will affect the outcome of labor.

The partograph is an inexpensive tool designed to provide a continuous pictorial overview of labor and has been shown to improve outcomes when used to monitor and manage labor. It is a single sheet of paper that includes information about the fetal heart rate, uterine contraction, any drugs used, and other important factors that could help avoid extensive descriptive notes.

With its use, there is no need to record labour events repeatedly as it helps predict deviation from normal progress of labour and supports timely and proven intervention⁶. It also helps to facilitate responding to the person conducting labour. Since a prolonged latent phase is relatively infrequent and not usually associated with poor perinatal outcomes, the usefulness of recording the latent phase of labour in the partograph has been questioned. Moreover, differentiating the latent phase from false labor is often difficult. To alleviate these disadvantages, a modified WHO graph was introduced and incorporated the removal of the latent phase and defined the beginning of the active phase at 4 cm of cervical dilatation instead of 3 cm⁸.

Globally, it is of paramount importance that all pregnant women in labour be monitored by a trained and skilled birth attendant utilising a partograph to ensure birth without any complications⁹. For instance, a feasibility study on partograph use by practitioners in India found that the overall performance of health workers was poor (11.1%) and, except for the correct recording of fetal condition, most did not score well in the plotting of the other partograph components¹⁰.

However, it has been observed that despite the World Health Organization advocating and recommending that the use of partograph to monitor the process of labour be made compulsorily, the level of utilisation is still reported to be low, mostly in the developing countries, especially in primary health care centres

where most of the deliveries take place¹¹. Several factors contribute to poor utilization of the partograph by midwives and obstetricians to monitor labour.

1.2 Statement of the Problem

Ogun State operates a 3-tier health system of primary, secondary, and tertiary level of care that spread over rural and urban areas. There are 1,309 accredited health facilities disaggregated into 488 primary health facilities, 40 secondary health facilities (which include one Hansen's disease center), four tertiary hospital (one of which is a private hospital: Babcock University Teaching Hospital) and 777 private health facilities. The state is also divided into five health zones namely Abeokuta, Ijebu ode, Ilaro, Ota and Remo health Zones.

The primary health care (PHC) level is designed to provide general health services of a preventive, promotive, curative and rehabilitative nature to the population. It is the entry point to the health care system. Health facilities are static or mobile structures where different types of health services are provided by various categories of health workers. These health facilities are in different groups and called different names depending on the structure (building), staffing, equipment, services rendered, and by ownership. Based on the Ward Health System, the three recognized facility types are: (i) Health Post (ii) Health Center /Clinic (iii)

Primary Health Centers (PHCs). The secondary level provides specialized services to patients referred from Primary health care level for medical, surgical, pediatrics, obstetrics and gynecological care management and community health services. Secondary health care is available at the LGAs as defined by the authority of the state. Supportive services such as laboratory, diagnostics, blood bank, rehabilitation, and physiotherapy are provided at the secondary health care

level. The tertiary level is the apex of the health care delivery. It is called the third level of the health system in which specialized consultative care are provided usually as the referrals from primary and secondary health facilities In the state. There are advanced diagnostic support services, specialized intensive care unit and medical personnel.

In Ogun State for example maternal mortality ratio is 179 per 100,000 live births and in Nigeria maternal mortality ratio (MMR) is 917 deaths per 100,000 live births, compared with 533 maternal deaths per 100,000 births in Sub-Saharan Africa.

Among the five major causes of maternal mortality (hypertension, haemorrhage, infection, obstructed labour, and unsafe abortion), the middle three (haemorrhage, infection, obstructed labour) are highly correlated with prolonged labour. To be more specific, postpartum hemorrhage and postpartum sepsis are very common when labour is prolonged beyond 18–24 hours. However, use of partograph has been found to be effective in preventing complications associated with prolonged labour.

Partograph utilisation has been identified as a significant factor due to a lack of knowledge in completing the partograph, years of experience working in maternity, a lack of on-the-job training, and a lack of resources. If nurses working in maternity wards used a partograph correctly in managing women in labour, there should be no complications which may lead to neonatal and maternal mortality. However, non use of partograph and poor documentation are some of the major problems in most of the health facilities that offer maternity services in developing countries.

1.3 Justification of the Study

The researcher chose to study the use of partograph for labour monitoring because it is an inexpensive tool which, if used correctly, can detect complications which could lead to death, hence reducing neonatal and maternal mortality. Obstetric caregivers were chosen in this study because they work in maternity and therefore use partograph while monitoring women in labour. Utilization of the partograph is related to improved maternal outcomes during labour; hence, the World Health Organization recommends it be used universally during labour¹⁴. Management of labour as early as possible has a good impact on maternal and foetal outcomes¹⁵. The percentage of obstetric caregivers using partograph in public health facilities has not been documented in NDHIS. The utilisation of partograph is a basic requirement to achieve the reduction of incidence of maternal mortality as recommended by the World Health Organisation (WHO). As there have been few studies conducted on factors affecting the utilisation of partographs in Ogun State, this study will be part of a baseline assessment of knowledge and practice of partograph among obstetrics caregivers in public hospitals in Ogun State. This study is part of the steps in creating key indicators/barriers and facilitators of partograph use in the early identification of abnormal progress of labour and prompt interventions in labour monitoring and management among obstetric caregivers in Ogun state Public Hospitals.

Assessing midwives' practical utilization of partograph and its determinants has great value in designing appropriate intervention strategies to provide quality maternity care. Correct utilization of the partograph will stem prolonged and/or obstructed labour in all settings, thus significantly reducing the sequelae of maternal and fetal morbidity and mortality^{18, 14}.

1.4 Aim and Objectives of Study

The study's aim is assessment of partograph utilization among obstetric caregivers in public hospitals in Ogun State.

Specific Objectives are:

- i. assess the knowledge of partograph among obstetrics caregivers in public hospitals in Ogun State.
- ii. to evaluate the utilization of partograph for monitoring labour among obstetrics caregivers in public hospitals.
- iii. association between Knowledge and Utilization of partograph.
- iv. identify the barriers and facilitators of partograph use among obstetric caregivers in public hospitals in Ogun State.

1.5 Research Questions

The following research questions will guide this study:

- i. What is the level knowledge of partograph among obstetric caregivers (OCG) in public hospitals in Ogun State?
- ii. What is level of the utilization of partograph for monitoring labour among obstetrics caregivers in public hospitals?
- iii. What is the association between Knowledge and Utilization of partograph?
- iv. What are the barriers and facilitators of partograph use among obstetric caregivers in public hospitals in Ogun State?

1.6 Significance of the study

It has been shown that the use of a partograph can be highly effective in reducing complications from childbirth¹⁹. Therefore, findings from this study will facilitate the assessment of the utilization of partograph in order to improve maternal health through the 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 a basis for promoting good management practices in the healthcare delivery system with respect to the improvement of quality of care in labor and early post-partum wards by health policymakers. 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 postpartum wards in Ogun State health facilities in general.

1.7 Scope of the Study

The study assessed the knowledge, utilization and barriers of obstetrics caregivers such as nurses, midwives, CHEW, etc. on partograph usage during labour in selected public hospitals across Ogun State. Knowledge and utilization were the main independent variables of the study, while partograph utilization was the dependent variable. A researcher-developed questionnaire was used as an instrument for data collection while frequency count, percentages, and chi-square X^2 were used as data analysis tools for the research questions and hypotheses framed for the study.

1.8 Limitation of the Study

Unwillingness of health workers to accept participation in the study and filling of research instrument was the major limitation encountered on the study but the researcher pacified them to ensure they did not just participate but also fill the research instrument of the study.

1.9 Operational Definition of Terms

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 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 member providing obstetrical care to a pregnant mother in labour and postpartum periods as well as caring for a newborn.

Partogram also called a partograph, 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"²¹. In the present study, the partogram used in selected health facilities is the one modified by World Health Organisation (WHO) in 2000, 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.

Utilisation: Midwives use the partograph correctly to monitor the progress of labour as recommended by the institution, ministry of health, and world health organization.

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Chapter Two

Literature Review

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- 2.1.2 Outcome of Labour by Skilled Birth Attendant
- 2.1.3 Maternal Mortality Ratio
- 2.1.4 Priorities for Reducing Maternal and Perinatal Mortality
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- 2.2.4 Barriers and facilitators of partograph use among obstetric caregivers

2.3 Conceptual Framework

2.4 Summary of Gaps in Literature

2.1 Conceptual Review

2.1.1 Obstetric Caregivers

Obstetric Care is a branch of medicine that specializes in the care of women during pregnancy and childbirth and in the diagnosis and treatment of diseases of the female reproductive organs. It also specializes in other women's health issues, such as menopause, hormone problems, contraception (birth control), and infertility. Obstetric caregivers play an important role in the care of pregnant patients¹⁴². It is their duty to ensure that the labor has a positive outcome for both mother and fetus, it is therefore important that the health workers caring for pregnant women are intimate with the causes of maternal and fetal mortality, as well as what can be done in to avert them.

Obstetric caregivers also assist in the reduction of the increasing rate of global maternal and foetal morbidity and mortality rate, as well as to promote reproductive health in general. It is therefore important that precedence is placed on giving those in this field good quality education so they are well equipped, this in addition to having fully functioning health facilities will definitely result in a drastic reduction of maternal and newborn deaths²².

2.1.2 Effect of Proper Care by Obstetrics Caregivers

The result of any pregnancy relies generally on intrapartum care. Poor intrapartum care is the number one cause of both maternal and newborn deaths²³. Close to 1000 deaths are recorded daily connected with pregnancy and birth²⁴. A review shows that the larger part of these deaths from pregnancy-related causes is Africans, which account for more than 10% of the world's population and 17.00%

of its births²⁵. In 2010, almost 300,000 maternal deaths were recorded worldwide, with Sub-Saharan Africa and Southern Asia accounting for 85% of these deaths²⁶. The overall maternal mortality ratio (MMR) was estimated by the 2018 Nigeria Demographic and Health Survey to be 512 deaths for every 100,000 live births for the seven years preceding the survey, with a confidence interval for the 2018 MMR ranging from 447 to 578 deaths for every 100,000 live births²⁷.

In order to safeguard against complications such as obstructed labor, which can lead to prolonged labor, uterine rupture, post-partum hemorrhage, and puerperal sepsis, the World Health Organization proposed the Partograph as a simple technology for use by obstetricians and obstetric care providers to monitor the progress of labor. Preventing protracted labor and early diagnosis of irregular progress will lower maternal and perinatal mortality.²⁸

Global efforts have been centered on lowering maternal and newborn mortality and morbidity related to intrapartum care, particularly in developing nations since 1987. The usage of partograph, created by Philpott in 1971 and later refined by the World Health Organization, is one of many programs and tools that have been designed to monitor and manage women in labor²⁹. The partograph is thought to be a beneficial tool for optimizing maternity care because it enables medically trained practitioners to graphically record intrapartum information so that labor abnormalities can always be detected early for prompt attention³⁰.

In Bangladesh for example studies reveals that, using the partograph can greatly decrease complications from protracted labor both to the mother and the baby, like postpartum hemorrhage, sepsis, uterine rupture, and its after effects (mortality,

asphyxia, infections, etc.)^{31,32} . The partograph's implementation also necessitates the establishment of an operational referral system with key obstetric functions, which will boost the efficacy and efficiency of maternity care. The partograph has been shown to be a useful tool for tracking labor in addition to being a potential legal document and a way to establish accountability in midwifery practice³³.

The World Health Organization then authorized partograph use universal given that it was considered that it had the potential to detect abnormal labor and track labor to a successful second stage in both developed and developing settings³⁴.

In November 2011, the Maternal Health Task Force and the Fistula Care initiative brought together specialists in New York to evaluate the usefulness of the partograph, identify obstacles to its usage, devise solutions to these obstacles, and decide on the direction of future study³⁵. The experts included obstetric care givers, physicians, researchers, clinical educators, managers of health services, and representatives of professional associations. Based on findings and consensus from the meeting and drawing on available evidence, the argument was put forth that problems with the partograph might result more from the contextual challenges of fragile health systems than from deficiencies in the tool itself. Those present advocated for a different approach to assessing the value of the partograph (and other labour monitoring tools) using “realist review” methodology, which aims to provide a greater understanding of the barriers to its effective use and to aid in developing more effective training and implementation strategies.

2.1.3 Maternal Mortality Ratio (MMR)

From 1990 to 2015, there were 13.6 million maternal-related deaths globally. The 2000 Ethiopia Demographic and Health Survey reported that Ethiopia's maternal death rate was 871 per 100,000 live births. Despite a modest dip to 673 in 2005, there was a slight uptick to 676 in 2011³⁶. The estimated global rate of maternal death in 2013 was 210 per 100,000 live births. With 510 per 100,000 live births, Sub-Saharan African nations account for the highest percentage of this³⁷. About 303,000 maternal deaths occurred during and after pregnancy or childbirth in 2015. 99 percent of deaths occurred in underdeveloped nations, with just 546 deaths per 100,000 live births (66 percent) occurring outside of Sub-Saharan Africa³⁸.

Ethiopia had a maternal death rate of 412 per 100,000 live births in 2016³⁹. A preventive cause of maternal mortality resulted in the deaths of almost 295,000 women in 2017. (MM). Most of these deaths (94%) occurred in low- and middle-income nations, with Sub-Saharan Africa (SSA) and Southeast Asia (SEA) accounting for a combined 86 % and SSA alone for nearly 66 %. Whereas the maternal mortality rate (MMR) decreased by 60% in SEA between 2000 and 2017, it only declined by 40% in SSR. Ethiopia's MMR in 2016 was 412/100,000 live births, as well as its neonatal mortality rate was around 30 per 1000 live births, according to the Ethiopian Demographic and Health Survey (EDHS)⁴¹. Any time during pregnancy, childbirth or the postpartum period can result in maternal morbidity and mortality. Pre-eclampsia and eclampsia during pregnancy, difficulties during labour, bleeding during labor and delivery, an infection following childbirth, and abortion are all potential causes of MM⁴².

There are workable measures, including the use of partographs, available to lessen the calamity of maternal mortality. A preprinted paper called a partograph is used to chart the progress of labor and the differences seen in the mother and fetus as labor progress. It was first used in 1950; its use became an international standard method in 1987 in Nairobi, Kenya, and in 1994, the World Health Organization declared its essential use in all settings for enhancing labor management and lowering maternal and foetal mortality⁴⁰. It was, also demonstrated that in labor monitored by partograph prolonged labour was reduced from 6.4 to 3.4 %, augmentation was reduced from 20.7 to 9.1 %, emergency caesarean section was reduced from 9.9 to 8.3 %, and stillbirths were reduced from 0.5 to 0.3 %⁴⁰.

2.1.4 Priorities for Reducing Maternal and Perinatal Mortality

Globally, pregnancy and childbirth-related problems such hemorrhage, hypertensive disorders, sepsis, and abortion account for approximately 70% of maternal deaths⁷⁵. More than 85% of newborn deaths are caused by preterm birth complications, hypoxia, intrapartum perinatal mortality, and neonatal infections⁷⁶. Studies have shown that effective, high-quality care can considerably lower the number of maternal deaths, stillbirths, and early neonatal deaths during this crucial time⁷⁷. Consequently, the moment of delivery and the period immediately following are particularly crucial for the survival of the mother, the fetus, and the newborn, and they give a chance to boost the return on investments for better care. The number of maternal deaths, antepartum and intrapartum-related stillbirths, and early neonatal deaths is projected to decline dramatically with effective prevention and management of conditions in late pregnancy, childbirth, and the early newborn period⁷⁸.

Therefore, increasing the standard of curative and preventive treatment during this crucial time could have the most effects on the survival of the mother, the fetus, and the infant. The following subject areas are viewed as high priority for evidence-based approaches in regular and emergency care in light of the most up-to-date statistics on burden and impact. Routine postpartum care, such as labor monitoring and newborn care during the first week after birth includes Pre-eclampsia, eclampsia, and its complications; prolonged labor with safe, acceptable medical interventions; postpartum hemorrhage; preterm labor; birth; and suitable care for preterm and small newborns; as well as maternal and newborn infections¹⁴³.

2.1.5 Obstructed Labour

Obstructed and protracted labors are the main causes of maternal fatalities and complications. In the developing countries, protracted labor is one of the main causes of mortality for both mothers and newborns. A woman may experience major difficulties like obstructed labor, dehydration, tiredness, or uterus rupture if the labor does not proceed normally. Infection of the mother or bleeding, as well as infection of the newborn, may potentially be affected. By using expert delivery services, such as charting partographs while labor is still in progress, this can be avoided⁴³.

To prevent protracted and obstructed labor, the Partograph is an affordable and cost-effective solution. It provides a constant graphical overview of labor progress. It includes important details on the status of the labor, the condition of the fetus, and the condition of the mother. Its purpose is to increase the effectiveness of

labor, forecast how labor will develop, facilitate timely decision-making, and enable proven intervention.⁴⁴

All labours should be monitored by utilising the partograph, according to the World Health Organization (WHO). Due to a variety of reasons, including a lack of human resources, time constraints, stockouts of partograph paper, and insufficient monitoring of maternal and fetal vital indicators, it is still not widely used in developing countries, especially in Africa. In Nigeria, studies have shown that 70.8% of obstetric care providers were highly knowledgeable and had a good general knowledge of the partograph, although, they lacked in-depth understanding of the parts⁴³.

The prevention of problems such as postpartum hemorrhages, ruptured uterus, puerperal infection, and obstetric fistula is considerably aided by the early discovery of protracted or obstructed labor. The partograph gives medical practitioners a visual overview of the labor that enables early detection and diagnosis of abnormal labor⁴⁵. In developing countries, prolonged labor is one of the main causes of mortality for both mothers and newborns. Consequently, it aids medical professionals in recognizing extended labor and in taking the necessary steps. Despite the established advantages, the partograph is still poorly, inconsistently, and improperly utilised^{21,46}. Limited-resource environments, a lack of human resources, low competency, a lack of ongoing facilitative supervision, acceptance of the tool, and a lack of functional referral mechanisms are the main obstacles to the effective use of the partograph⁴⁷.

The majority (99%) of participants in a research conducted in Ethiopia were aware of the partograph. Only 21.8% of respondents, however, claimed that using

the partograph could lower maternal and neonatal mortality. Levels of partograph usage and knowledge have been observed in other research in various parts of Ethiopia^{46,48}. The majority of this research, however, was restricted to urban health facilities and small geographic areas, which made it difficult to grasp the figures more clearly. In public health facilities in eastern Ethiopia, there was a lack of information regarding the level of medical professionals' knowledge and use of the partograph.

Two-thirds of maternal deaths in Bangladesh, one of the top ten countries responsible for the majority (59%) of maternal deaths worldwide, are directly obstetric in nature, including prolonged and obstructed labor. In order to effectively lower maternal and neonatal mortality, the recent five-year strategic plan, Health, Population and Nutrition Sector Program 2017–2022 (HPNSP), has placed a strong emphasis on identifying labor complications and making the proper referral to Emergency Obstetric Care (EmOC) health facilities⁵¹. In Bangladesh's public health system, the first level of primary care facilities is called Union Health and Family Welfare Centers (UH&FWC). These facilities have a single health worker on staff who is qualified to provide basic obstetric services to a union's population of 24,000–30,000 people (lowest administrative unit)⁵¹.

2.1.6 Obstetrics Caregivers Knowledge

A large discrepancy between knowledge and utilization was discovered in Kenya. In Nigeria for example, only 35% of obstetric care providers and obstetricians could accurately explain the objective of utilizing the partograph, and only 25% did so on a regular basis, even though the majority of them recognized its value in

monitoring labor⁶³. In Cross River State for example reports shows that only 42% of the 13 healthcare facilities used the partograph to track the course of labor⁶⁴. The investigation was driven by observations that maternal mortality was high in the study area. Despite improvements in medical technology, the maternal death rate has been on the rise, especially in poorer nations. ^{65,66}. The range of obstetric care workers (OCWs) in tertiary and secondary healthcare delivery levels in urban settings in Nigeria is wide. It includes obstetricians, family physicians, general duty doctors, nurses and obstetric caregivers, auxiliary nurses, community health officers, and community health extension workers (CHEWS).

On the contrary, at the primary care level, the physician complement of this list is often lacking while the inclusion of nurse aids, junior community health extension workers (JCHEWS), and traditional birth attendants (TBAs) becomes evident. Notwithstanding, the partograph's lengthy introduction to the medical community and the extensive documentation of its efficacy^{1,67}, some researchers in Nigeria have found discrepancies in utilization among Nigerian healthcare facilities.

Based on the results of a study conducted in two tertiary health care facilities in Nigeria, the majority of the obstetric care providers (84%) interviewed a strong knowledge of the partograph, but only 35.1% of the partograph charts were filled out correctly on average⁶⁸. Opiah identified a number of issues that prevented successful Partograph use, including a lack of partograph charts (30.3%) and a staffing shortfall (19.4%). Studies among various maternity care providers at three levels of health care revealed a lack of understanding and improper application of the partograph^{9,47}. Additionally, they stated that past training had a significant impact on one's understanding of the partograph ($\chi^2 = 49.2$; $p < 0.05$). They

also stated that tertiary level healthcare professionals utilized partograph more frequently than primary and secondary level healthcare professionals^{9,47}. Furthermore, the studies by Fawole and Fadare in 2007 and 2008 revealed that only 33.7% of 1, 319 deliveries had partographic monitoring⁶⁹. They also revealed that the use of the partograph significantly influenced decision-making and was linked to successful labor outcomes among low- and high-risk parturients. Numerous specialists involved in the management of women in labor have been identified by the majority of studies on partograph in Nigeria that have exclusively used quantitative methodologies. Auxiliary nurses, auxiliary obstetric care providers, community health extension workers (CHEWS), obstetric care providers, nurses/obstetric care providers, and medical doctors are among the identified obstetric workers^{9,47,68,70}. However, there is still little information in the literature about how much partograph is used by obstetric caregivers and CHEWS. Additionally, obstetric care providers' attitudes are rarely discussed in literature as a factor in the effective or unsuccessful use of the partograph. Because of this, it is crucial to carry out a study that will examine the usage of the partograph using quantitative and qualitative approaches across basic, secondary, and tertiary health care facilities.

2.1.7 Partograph

A partograph is a combined visual record and representation of important information regarding the mother and fetus throughout the course of labor. Typically, this information is written down and entered against time on a single piece of paper. Relevant measurements may include information on the mother's blood pressure, heart rate, cervical dilation, fetal heart rate, length of labor, and

vital signs, among other things¹²⁸. In order to create an early warning system in the event of difficulties, Savona-Ventura describes it as a graphic tool that depicts significant points during labor and recommends using it for routine monitoring of the progress of labor¹²⁸. The World Health Organization designed it as a paper-based instrument to track labor during pregnancy⁴. However, thanks to technological improvements, a digital version of the traditional paper-based partograph/partogram that can operate on a mobile or tablet PC has already been created. The partograph's primary goal is to provide an accurate and precise record of the labor's progress so that any delays or deviations from the standard may be swiftly identified and addressed. A disparity between the dimensions of the metal presentation and the maternal pelvis during labor results in prolonged and obstructed labor, which can be avoided by using the Partograph to identify sluggish and early progress in labor and to start the proper interventions. The partograph was created to identify irregular labor progressions early on, to stop prolonged labor, eliminate obstructed labor, uterine rupture, and its aftereffects, and drastically lower the risk of postpartum hemorrhage and sepsis. The partograph was introduced into clinical practice along with a management plan, and according to a WHO multicenter experiment, labor outcomes were significantly improved. It makes it easier to perform a caesarean section when necessary, boost labor using uterotonics, and reduce the risk of infection. Therefore, the WHO advises using a partograph to monitor all labors since it enables early detection of irregular labor progress and timely intervention. The partograph includes distinct lines that show when complications including slow labor progress, extended labor, fetal discomfort, obstructed labor, and ruptured uterus—as well as other potential issues—need to be addressed.

2.1.8 The Genesis of Universal Partograph Use

The partograph was first introduced in 1954 by Friedman, he illustrated the dilatation of the cervix during labour⁷¹ it builds on a graphic recording of the four phases of cervical dilatation in labor progress (the latent phase, the acceleration phase, the phase of maximum slope, and the deceleration phase) known as a cervicograph. In Central Africa, Philpott, and Castle in Zimbabwe made an effort to more effectively manage labor at hospitals built on his original idea in 1972⁷². They added the action and alarm lines to transform the idea into a tool for monitoring labor. The first partograph was created by extending this cervicograph to include other intrapartum information, such as the connection to the presenting part and uterine contractions. Additionally included were fetal and maternal factors. The partograph rapidly spread across the United Kingdom, where it was soon routinely used in more than 50% of teaching hospitals⁷³. By providing a graphic overview of labor progress, the partograph acts as an “early warning system” for promptly identifying abnormal labor patterns so that appropriate and timely interventions including referral can be initiated. The Partograph was subsequently improved by the World Health Organization and made available internationally in 1987 during the Safe Motherhood Conference in Nairobi, Kenya. The purpose of this conference was to discuss the alarming global mortality rates for mothers and infants. Effective use of the partograph will avoid lengthy or difficult labor, which causes 8%–10% of maternal fatalities.³⁵.

Additionally, its use promotes continuity of care and aids in the early detection of labor anomalies³⁵. The partograph, according to Philpott, acts as a "early warning system" and aids in making decisions about the transfer, augmentation, and

termination of labor early on. Updated standards and procedures for service delivery, management and supervision, monitoring, and service quality evaluation, together with client and healthcare provider feedback, are also crucial. In many nations, especially developing nations, the partograph is frequently utilized. In Nigeria, it is mostly used in teaching hospitals and rarely in general and cottage hospitals. The type of partograph in use involves a uniform spread of both the WHO type and plain composite partograph 74. The current partograph includes different variables such as fetal heart rate, dilatation of the cervix, contractions, and maternal pulse and blood pressure plotted on a preprinted paper.

2.1.9 Components of the Partograph

The partograph is intended for recording significant data at intervals of 30 minutes, though this duration may vary depending on institutions or regional standards.¹⁴³.

The elements consist of patient identification, time which is used for recording (Zero time for induced labor is the time of induction, whereas for spontaneous labor it is the moment of admission to the labor ward), and fetal heart rate which is measured every thirty minutes, Membrane condition and liquor color of which "I" stands for intact membranes, "C" for clear, and "M" for meconium-stained liquid.

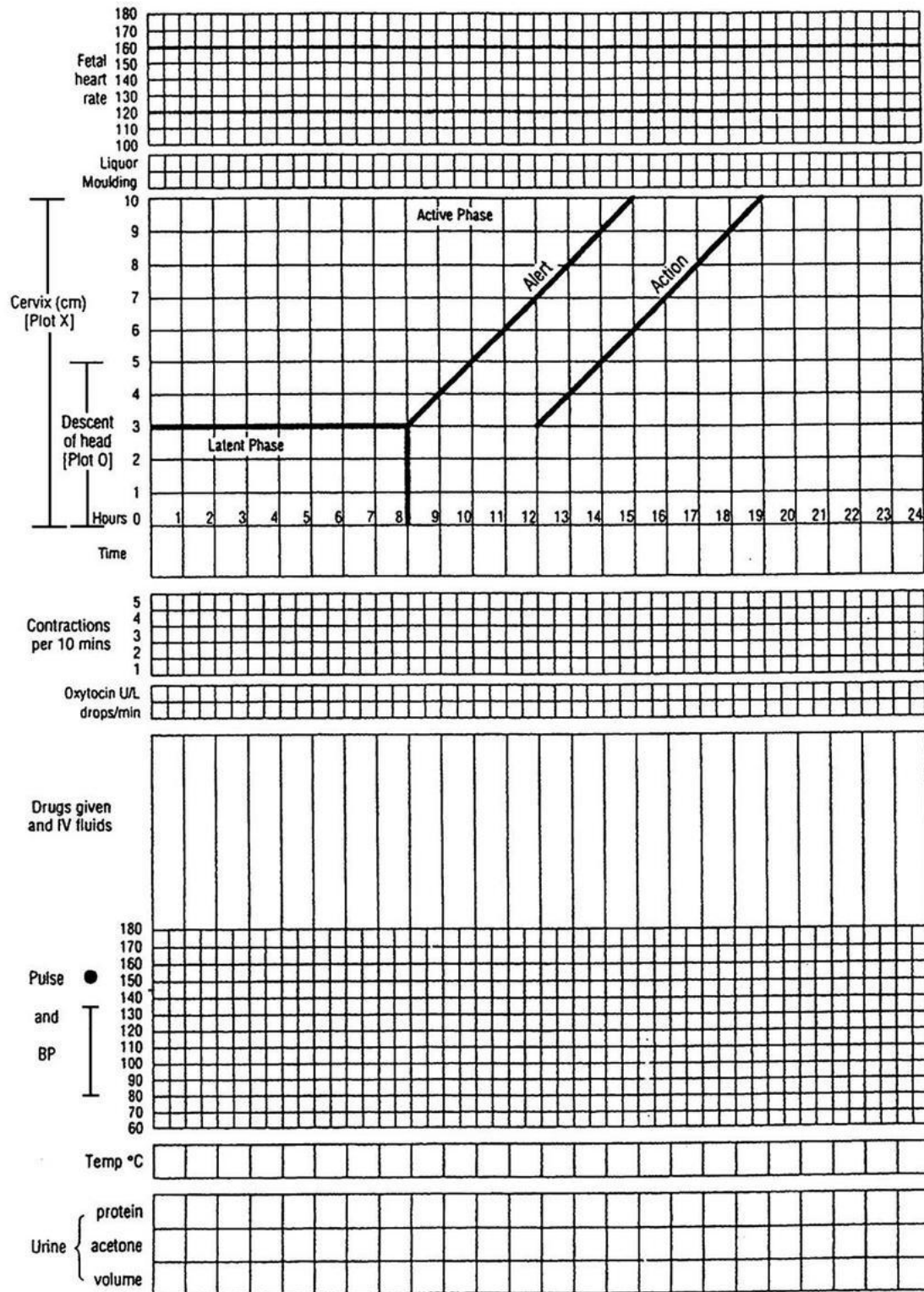
Other components are cervical dilation and descent of the head, blood pressure, pulse rate, uterine contractions, temperature, urine analysis

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PARTOGRAPH

Name _____ Gravida _____ Para _____ Hospital no. _____
 Date of admission _____ Time of admission _____ Ruptured membranes _____ hours



Source: Sarsam (2014)¹³⁰

Figure 2.1: A composite partograph

2.1.10 Availability of Partographs

In order to help health workers recognize abnormal labor and carry out the necessary management, including prompt referral to higher level facilities equipped with EmOC signal functions at district hospitals, certain sub-district hospitals, Maternal and Child Welfare Centres (MCWC), and Medical College hospitals, it is essential to use partographs at this level of the facility⁵². Only 3% of deliveries that take place in medical facilities use partographs, according to a needs assessment done in Bangladesh⁵³. Lack of partograph use could lead to delayed care and ineffective diagnosis of intrapartum complications⁵⁴. According to a thorough examination of partograph, it may prompt healthcare professionals to refer urgent obstetric cases.⁵⁴ There are, however, few studies on the use of partographs by healthcare professionals in primary-level care institutions as a referral decision-making tool⁵⁴.

One-fourth of the world's maternal mortality burden comes from India⁵⁵. Their achievement in enhancing these results consequently has a big impact on advances in maternal health worldwide. From 39% in 2007 to 73% in 2012³⁸, India made impressive strides in raising the proportion of births taking place in medical facilities. The Janani Suraksha Yojana (JSY) cash transfer scheme, which compensates women to deliver in public institutions and approved private health facilities, was introduced in 2005 and helped to facilitate this. The JSY seeks to decrease perinatal mortality by increasing facility births and promoting access to competent birth attendance⁶.

With the JSY, the Indian government also started promoting partograph use to raise the standard of care provided during labor⁵⁷. The most notable of these is the

3-week residential skilled birth attendant (skilled birth attendant) course, which provides possibilities for skill development to nursing personnel from public sector facilities who are already supposed to be educated in partograph usage during basic nursing education⁵⁷. In addition to the JSY program, further expenditures have been made since 2005 in maternal health care, such as conveniently accessible free emergency transportation for expectant mothers. However, from the start of the previous decade, maternal mortality decrease in India has demonstrated a secular trend. Despite the JSY's obvious success with substantially growing institutional delivery proportions, several scientific assessments have been unable to identify an effect on the reduction of maternal death. This condition suggests that there may be care-quality issues with the program that warrant investigation⁵⁸.

It has been suggested that the partograph be used as a crucial signal to track routine intrapartum care. In this article, we discuss how the JSY program uses the partograph as a measure of intrapartum care. Given that the Indian government actively promotes partograph use and offers the necessary instruction and materials, problems regarding its application within the framework of the JSY program need to be addressed. Studying "implementation fidelity" is crucial to understanding why and how interventions function as well as the potential for improved outcomes from their use. Implementation fidelity refers to the degree to which an intervention is carried out as intended⁵⁹.

Following the adoption of the systematic use of the partograph in the management of labor, a clinical audit of intrapartum care at the Korle-Bu teaching hospital in Accra, Ghana, reported 50% lower occurrences of postpartum hemorrhages⁶⁰.

Only 32.3% of Nigerian obstetric care providers used the partograph to monitor women in labor, according to a study that evaluated their knowledge and usage of it. Respondents from tertiary levels of care reported using the partograph significantly more frequently than those from primary and secondary levels of care (82.4% vs. 19.3%; $X^2 = 214.6$, $p 0.0001$) in Nigeria⁶¹.

Studies on the factors influencing the use of Partograph in Uganda are scarce, but those that have been done have identified inadequate staffing, supplies, and understanding as the main barriers to use. Incorrect use of the partograph accounts for 12% of the total causes of uterine ruptures, according to a study on the use of the cartogram by nurses and midwives in specific health facilities in the Eastern province of Rwanda. It was also discovered that 36.6% of nurses and midwives did not receive any in-service training on how to manage women in labor⁶². Despite having a basic understanding of the partogram, only 41.22 percent of nurses and midwives in this survey reported using it correctly, and 587.8 percent reported not using it at all⁶². A few partographs were found to be incompletely or erroneously filled in another study in western Uganda regarding Improving Partograph Documentation and Use by Health Workers of Bwera Hospital⁶³.

20,000 mothers pass away in Ethiopia each year for pregnancy-related reasons.

Midwives in labor and delivery rooms do not continuously monitor every mother's labor using partographs⁴³. Similar to this, different healthcare facilities do not use partograph due to a variety of determinant factors, including the time of admission, the type of membrane present at admission, knowledge, training, attitude, sex, lack of institutional policy to use partograph, and the number of healthcare professionals per shift⁴³.

Various therapeutic modalities were developed to lower this worrisome number of fatalities. Increasing the knowledge and expertise of obstetric care providers in the primary signal role of fundamental emergency obstetrics and newborn care is one. The talent and knowledge of partograph use from the signal functions are crucial⁶⁴. About 8 to 10% of maternal deaths are caused by prolonged and obstructed labor, one of the reasons for maternal mortality⁶⁵. Maternal mortality will decrease if medical practitioners have better knowledge and abilities to handle obstetric emergency cases³⁷.

The cost-effective single sheet of paper known as a partograph is used to track fetal, maternal, and labor progress. Knowing how to utilize a partograph is crucial for reducing delayed and obstructed labor, and it aids in reducing preventable causes of maternal deaths^{61,66}. A key variable of partograph use, according to several writers, is the type of health facility and in-service training⁶⁷. The World Health Organization (WHO) advises all laboring moms in any setting to utilize partograph on a regular basis⁶⁸. All healthcare professionals who work in obstetrics must therefore be familiar with the usage and interpretation of partographs. However, the amount of expertise among care professionals falls short of expectations⁶⁹.

In the maternity care unit, midwives, nurses, and doctors predominate in Ethiopia. Wolaita Zone in southern Ethiopia discovered that the use of partographs is deficient in pertinent information. Hence order to demonstrate the level of partograph use, knowledge and related aspects was low. This can also close data gaps, serve as a foundation for future research, and provide support for achieving the sustainable development objective for maternal health.

A quick analysis of the partograph's use at a few Kenyan maternity institutions in East Africa found that the partograph was available in the majority of the facilities. However, it was generally not done to accurately record the parameters needed to monitor the mother, the fetus, and the progression of labor as advised. Some of the challenges reported impeding partograph use⁶⁰ were a shortage of employees, a lack of understanding, a lack of teamwork, a lack of materials, and a negative attitude among healthcare providers. Cochrane review for example states that quality of the available data was insufficient to identify whether using a paper partograph compared to not using one had any impact on the occurrence of low Apgar scores or the rate of cesarean deliveries⁷⁰. Low-quality evidence suggests that using a partograph may not significantly alter labor duration or the proportion of women who receive oxytocin to speed up labor (moderate-quality evidence) A critical evaluation⁵⁷. A study found that while the paper partograph seems to be accepted, evidence suggests that it is not being utilized in the practice as intended and, as a result, is not having the desired impact on results.³⁵.

In order to address shortcomings in the paper partograph, increase care during labor and delivery, improve recordkeeping, and support decision-making, a number of developers have concentrated on low-cost digital solutions. Litwin et al. reported on the use of an Android tablet-based electronic partogram program (ePartogram) in Zanzibar in one of the earliest published evaluations of digital labor-support apps⁶². The ePartogram program for tablets was quickly mastered by healthcare professionals, who felt its use accelerated care and aided decision-making.

2.1.11 Consequences of Non-use of a Partograph

Major factors contributing to mother and newborn morbidity and mortality include prolonged labor and obstructed labor¹⁴⁷. A ruptured uterus, postpartum hemorrhage, infection, obstetric fistula, urine and faecal incontinence, pain, infertility, and fetal harm or death are all common consequences of prolonged and difficult labor.

It can lead to missed opportunities to appropriately diagnose CPD, malpresentation, fetal abnormalities, and other reasons of obstructed labor when not used, or when it is used improperly or insufficiently, during labor. Obstructed labor is responsible for 8% of all maternal deaths worldwide, 11.3% of maternal deaths in Bangladesh, 26.2% of maternal deaths in a community-based study in Uganda, 45.5% of maternal deaths in a hospital-based study in Ethiopia, and 36% of maternal deaths in Malawi. Based on these statistics, it is clear that it is crucial to carefully assess the engagement and descent of the presenting part in order to avoid obstructed labor¹⁴⁸.

Prolonged obstructed labor in the newborn can result in hypoxia, brain damage, infection, and fatality. Obstructed labor, whether or not accompanied by uterine rupture, is one of the five leading causes of maternal death in practically all developing nations, while its proportional importance varies by area.¹⁴⁸.

2.1.2 Rationale for Partograph Utilization

The importance of care quality is becoming acknowledged on a global scale as a key component of the unfinished agenda for maternal and newborn health, particularly with regard to care during labor and delivery and the immediate postpartum period⁷⁹. It is understood that a high coverage rate by itself is insufficient to lower mortality. Increased coverage must be followed by better quality across the continuum of treatment if preventable causes of maternal and newborn death are to be significantly reduced and eliminated^{80,81}.

The WHO Multicounty Survey on Maternal and Newborn Health⁸², which collected data on more than 300 000 women who received care at 359 medical facilities in 29 countries, revealed a weak link between maternal mortality in healthcare facilities and coverage of "essential interventions" (i.e., the percentage of the population who received an indicated intervention, such as women with eclampsia receiving magnesium sulfate). Additionally, studies demonstrate that to provide efficient case management, high-quality treatment necessitates the optimum utilization of the employees, resources, and infrastructure at hand⁸³.

Stronger health infrastructure, optimum abilities, and a positive attitude from healthcare professionals are all necessary for high-quality care. Additionally, evidence-based clinical techniques and non-clinical interventions must be used appropriately. Any plan for quality improvement must include high-quality prenatal, intrapartum, and postnatal care. As a crucial component of the standard of care, these services should be integrated as per human rights norms, medical ethics, and technical requirements²¹. The preservation of women's and children's dignity and the acceleration of decreases in maternal, neonatal, and child mortality

and morbidity depend on the realization of the right to health, which is a fundamental human right.⁸⁴

2.1.13 Partograph Utilization

Utilizing a partograph enhances labor management and aids in decision-making on intervention to avoid difficulties during labor. Utilizing the partograph during labor is intended to lower rates of maternal and perinatal morbidity and death, enhance the care provided to expectant mothers during labor, and improve the obstetric care providers' capacity for observation and interpretation⁸⁵. It is still difficult for obstetric caretakers in sub-Saharan Africa to use the partograph to monitor laboring mothers. Due to the insufficient level of obstetric care providers' understanding on the use of partograph, the partograph is not frequently utilized to monitor women in labor⁸⁵.

The outcome of labor is significantly impacted by the partograph's non-use, which also prevents timely referrals of complex cases for timely interventions⁸⁶. Skills are needed to use partogram as part of the Safe Motherhood Initiative. The WHO's partograph effectively distinguishes between normal and abnormal labor progress and identifies the women most likely to need assistance. It is advised to use it in all labor wards⁸⁷. In Nigeria for example findings suggested that labor monitoring was not used to its full potential in both locations, despite the midwife's proficiency with the partogram⁸⁸. In the study conducted by Khonje in Malawi, where significant percentages of partogram characteristics were found to be incompletely recorded, the issue of filling the partogram was also felt ⁸⁹. Furthermore, the study confirms inadequate use of partograms during labor and

recommends training of health workers on partogram usage, availability of guidelines, and enough resources.

Part of the Safe Motherhood Initiative involves the use of partograph, which calls for certain expertise. The WHO's partograph effectively distinguishes between normal and abnormal labor progress and identifies the women most likely to need assistance. Its use is advised in all labor wards²⁴. The results of a study on the partograph's knowledge and use among obstetric care providers in Nigeria's Niger Delta region suggested that, despite midwives' good partograph knowledge, there was poor utilization in labor monitoring in both centers.

Only 37.5% of used partograph charts in Federal Medical Centers and 32.6% in the Niger Delta University Teaching Hospital were properly filled, according to analysis⁸⁸. In the study conducted in Southwestern Nigeria, where significant percentages of parameters on the partograph with incompletely recorded values were found, the issue of filling the partograph was also felt. Similarly, only 18, or 85% of the partographs in a research done in Calabar, South-South Nigeria, were found to be correctly filled⁴⁷.

In Kiryandongo, the exact utilization level is yet unknown. Similar to this, another study examined how the partograph was used at primary healthcare facilities in the East Gojjam Zone of Northwest Ethiopia in cross-sectional research⁹³. Gross knowledge gaps about typical labor-related traits have been brought to light.

Therefore, in Kiryandongo, it is necessary to determine how much obstetric care providers use this equipment to keep an eye on expectant mothers who are in labor. Furthermore, other studies carried out in the Bwera hospital in Kasese, confirms poor use of partograph during childbirth and recommend training of

healthcare professionals on partograph use, availability of guidelines, and adequate resources^{49,96}. According to research done to evaluate the development of partograph training and usage in Kenya using the partograph digital pen system confirmed that majority of the respondents lack the necessary abilities⁹⁷. Numerous authors have continued to discuss the use of the partograph to keep an eye on expectant moms as they go through labor. For instance, findings from a study showed that the overall quality of care was poor with the non-use of partographs in their study employing criterion-based audits of medical care and services²⁹.

Clinical guidelines and protocols needed to be developed, it was felt. No study has examined partograph as a key factor in efficient and successful labor management in various Rwandan healthcare facilities, with an emphasis on both rural hospitals and health centers. Therefore, the results of this study are crucial for increasing labor management efficiency. Similarly, another study carried out a cross-sectional investigation to comprehend Partograph use in obstetric practice in low- and middle-income countries: a systematic review: barriers and incentives. Only 32.3% of respondents used the partograph to monitor laboring mothers, according to their findings⁹⁴. In comparison to respondents from primary/secondary levels of care, respondents in the tertiary level of care reported using partographs substantially more frequently. The health system in Rwanda is identical to that in Nigeria, and secondary and tertiary level education are more likely to make good use of the partograph than basic level education.

Although there is still room for improvement in certain underdeveloped nations for a paper-based partograph, other nations have advanced their technology to

monitor expectant mothers during labor. A range of systems for centralized observation of fetal signals during labor are already available, according to a review article titled "An overview of central fetal monitoring systems in labor." These systems permit simultaneous monitoring of several tracings in one or more locations⁹⁸. This system shows the mother's vital signs, and the majority of these systems have an electronic partograph. Another study introduced the "PartoPen Maternal Health Monitoring System"⁹⁷.

The PartoPen project's objective, as stated by the authors, is to improve the effectiveness of the partograph by utilizing an interactive digital pen with bespoke software and partograph forms printed with a background dot pattern that the pen can recognize⁹⁷. A printed paper form of the partograph is used at many health institutions throughout Rwanda, however, the present study has determined how effectively it should be used.

A common instrument for labor monitoring is the partograph. The use of the partograph is a well-known best practice for quality monitoring of labor and the subsequent prevention of obstructed and protracted labor³⁵. However, due to subpar intrapartum care, there are still a lot of cases of obstructed labor that take place in medical facilities. The study suggested emphasizing partograph use during pre-service and on-the-job training for obstetric care providers in order to effectively monitor expectant mothers in labor²⁶.

This approach is also being used in Uganda, according to a study on improving emergency obstetric and neonatal care (EmONC) practices by retrospective analysis of intrapartum stillbirth data at the Fort Portal Regional Referral Hospital in Southwestern Uganda⁹¹. The investigation carried out discovered the source of

partograph knowledge⁹². The authors point out that a third of those who were aware of the partograph said that their primary source of information was a Life Saving Skill training class, and that these people typically possessed fair to good levels of information⁹².

In a cross-sectional study to evaluate obstetric care providers' knowledge and attitudes about partograph and its related factors in East Gojjam Zone, Northwest Ethiopia, 86.2% of respondents reported receiving partograph training while in midwifery school, while 13% said they did not receive partograph training there⁹³.

It is necessary to identify the source of partograph knowledge in Uganda. In a cross-sectional quantitative analysis to evaluate the incentives and challenges for achieving partograph use in obstetric practice in low- and middle-income countries, This was confirmed by another study showing that awareness of the operation of both the alert line and the action line was poor⁹⁴. The same study's findings show that when it came to properly name at least one section of the partograph, there was no statistically significant difference between respondents from hospitals and health centers⁹⁴.

The aforementioned research showed that even though obstetric care providers may have adequate knowledge of the partograph, it is rarely used to monitor women who are in labor in medical facilities. Although partograph use is covered in pre-service training for obstetric care providers, the reality on the ground may be impacted by several factors, according to findings from the current study in Nigeria⁹⁴.

Advantages of Partograph

- **Minimizing Human Errors:** Depending on the stage of pregnancy, different labor vitals need to be monitored at different intervals, according to standard W.H.O. procedure. In the event that the staff nurse forgets the conventional routine, the electronic partograph can remind them to enter labor vital. Sometimes, such modest assistance can save lives by reducing the time it takes to make decisions¹⁶⁵.
- **Eliminating the Input of Erroneous Data and Increased Accountability:** The partograph is frequently filled out primarily for record-keeping purposes after delivery. With electronic records, the data cannot be tempered. Data entry's actual time may be easily tracked. This enables measuring labor monitoring process protocol adherence accurately¹⁰³.
- **Simplifies Data Analysis:** Healthcare depends on data. Electronic partograph have the added benefit of making a digital copy of the data available. A very simple type of AI is partograph. We may, however, enhance the underlying algorithm to anticipate the issues with more data. With these data, nonlinear, multidimensional mathematical models can be used to forecast unfavorable pregnancy outcomes.¹⁶⁷.
- **Availability:** The limited availability of partographs is another typical reason for low utilization. Digital media can be used to solve this issue as long as the new device has a sufficient power source¹⁰³.
- **Simplicity:** Paper partograph plotting requires training. By utilizing recent developments in human-computer interaction, digital images can be made very simple to utilize. The perceived ease of use, however, is incredibly

subjective. Users who are not tech aware would find such a transition overwhelming. To make sure that it is perceived by its end users as being simple to use, it is crucial to choose the appropriate solution¹⁰³. This is because it provides information on a single sheet of paper at a glance, helps with early prediction of deviation from normal progress of labor, and improvement in maternal morbidity, perinatal morbidity and mortality¹⁰³.

2.1.14 Challenges/Limitations in the Utilization of Partograph

The partograph is a form on which labor observations are recorded to give a summary of labor and to alert obstetrical care providers to variations in labor progress as well as maternal and fetal well-being, as was previously discussed in this study. Early detection and correction of labor progress abnormalities reduces maternal mortality, prevents complications, and allows for normal labor and delivery. 99 stated that a lack of information, inadequate training for obstetric care providers, and a negative attitude toward the use of the partogram were all issues that influenced the utilization of the partograph during labor. In addition to the foregoing, a cross-sectional study involving observations recorded reviews, and interviews came to the conclusion that health input variables are the key influences on the poor use of partograms during labor. The researchers suggested providing appropriate resources, training health professionals in the use of partograms, and providing guidelines²⁴.

A total of 242 partographs of women in labor were plotted over the course of a year in a fast assessment of partograph use in selected maternity units in Kenya among different categories of primary health care personnel, the authors deduced from these findings that lower cadres of primary healthcare providers can be

successfully trained to utilize the partogram with good outcomes, and can hence enhance maternal outcomes in underdeveloped nations with a shortage of expert attendants⁵⁹.

Regarding in-service training, it was observed that pre-service training should be enhanced as well as integrated with other interventions to boost the inflow of health workers and decrease the rate of outflow in a study to assess the inflow and outflow of health workers in Muhima Hospital, Rwanda⁹⁹. Moreover, in the study conducted to assess the 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 partogram¹⁰⁰. Inadequate use of partograms associated with a lack of trained personnel was observed¹⁰¹. This could be also applicable to Rwanda where only 70% of deliveries in rural areas like Kiryandongo are assisted by skilled health care attendants¹⁰².

2.1.15 Factors Affecting the Utilization of the Partograph

Around the world prolonged and obstructed labors were among the common causes of maternal morbidity and mortality in low- and middle-income countries including Nigeria and Sub-Saharan country. The World Health Organization (WHO) recommends the routine use of partograph as a key intervention to avoid prolonged and obstructed labor. Despite the recommendation, studies indicated that the partograph utilization among obstetric care providers (OCPs) is still low which a major factors affecting its utilization.

The majority of trained birth attendants in Cameroon are nurses and obstetric care professionals (OCPs), therefore if they are to make a substantial impact on

lowering the high MMR of the nation, they must be knowledgeable in partographic monitoring of the progress of labor. In general, 31.0% of respondents had inadequate knowledge of the partograph, which is much higher than the 8.7% recorded in Addis Ababa public health institutions. Only a little more than a quarter of our participants (29.6%) were found to have a good understanding of the partograph, while the majority (39.4%) had fair knowledge³³. Additionally, the responders lacked in-depth understanding of the partograph's component parts in relation to the typical labor tracing and its connection to the alert and action lines. It was also disappointing to know the qualities of a strong contraction.

These results are consistent with numerous earlier research which have demonstrated that the majority of OCPs are unable to correctly identify and explain the functions of the partograph's component parts, including the alert and action lines. As a result, it highlights the critical need for measures to increase understanding of these OCPs on the partograph through ongoing training and retraining programs in order to maximize its appropriate use^{1,24,29,95,103}.

In Ethiopia, a number of cases of obstructed labor still occur in health facilities due to poor quality of intrapartum care. It was observed that there should be more attention on obstetric care providers' lack of pre-service and on-the-job training about the use of partograph. A study on enhancing Emergency Obstetric and Neonatal Care (EmONC) Practices by Retrospective Analysis of Intrapartum Stillbirth Data at the Fort Portal Regional Referral Hospital, Southwestern Uganda, reported that such notices were also in use there. In a cross-sectional study to evaluate obstetric care providers' knowledge and attitudes about partograph and its related factors in the 6 East Gojjam Zone, Northwest Ethiopia, 86.2% of respondents reported receiving partograph training while in midwifery school,

while 13% said they did not receive such training^{91,93}. It is necessary to identify the source of partograph knowledge in Uganda. Although all of the obstetric care providers in the study conducted in the Kiryandongo district of Uganda had received official training on how to use the partogram, the tool was not used to its full potential⁹³.

Another factor predicting proper partogram usage was the number of years of professional expertise. In Nigeria, the factors that were cited by respondents as contributing to the inefficient use of partograph were: a shortage of obstetric caregivers (65%), which seemed to be a major concern that also limits the opportunity to attend in-service training as reflected by 38% of respondents who never attended in-service; the shortage of partographs, the increased number of students to be facilitated in partograph use, lack of understanding the skill of recording, lack of commitment by obstetric care givers and ignorance¹⁶⁴.

In Benin a program to promote safe motherhood was initiated. The partogram was one strategy used to lower maternal mortality and morbidity¹⁶⁵. In order to determine the partograph use rate and the standard of its use, a survey was carried out in maternity institutions in both urban and rural Benin. All facilities were asked to participate in this cross-sectional survey by answering a questionnaire. In addition, using stratified randomization, researchers retrospectively examined data in half of the institutions. In 98 percent of cases, partograms were used; however, in 13.3 percent of files (all in rural regions), partogram completion halted before delivery¹⁶⁵. These findings thus suggest the necessity for maternity personnel to receive refresher training on partogram use as they reveal very high coverage of partogram use but poor quality¹⁶⁵.

(a) Poor knowledge

It is generally believed that the Partograph plays a vital role in labour management. Nevertheless, the knowledge is still very low especially amongst the obstetricians, midwives and other health workers who conduct deliveries especially in several developing countries. In Nigeria, the knowledge of how to use the Partograph has only been documented in teaching hospitals and very little is known of the Partograph in non-teaching hospitals and other medical centers^{151,152,153}. The poor knowledge and utilization of the Partograph in Nigeria is majorly attributed to the fact that when the Partograph was introduced in Nigeria, it was at the teaching hospitals and taught only to doctors to the exclusion of the midwives who are the cadre of staff which the Partograph was designed for, by Phillipott¹⁵⁴.

Overtime, the midwives naturally came to identify the Partograph as a tool used by the doctors only and for research since it was mainly used in teaching hospitals, for labor management. To that extent, as well, it is seen as a complex tool that requires specialized knowledge to understand its use for routine labour supervision.

(b) Lack of Supply of the Partograph:

In most parts of the world, the Partograph is now standard stationery for use in labor wards. In most teaching hospitals in Nigeria, where the Partograph is used for routine labour supervision, the Partograph is commonly available as a stationary. However, it is not available in other hospitals, which frustrates attempts to improve the use of the Partograph that has led to several training workshops for various cadres of health workers who on return to their institution are unable to use the Partograph because of lack of supply¹⁵⁵.

At the moment, the supply of the Partograph as a stationery for use in labour ward in most hospital in Nigeria is uncommon because of high level of ignorance of the Partograph¹⁵⁴.

(c) Aversion to Utilisation of Partograph:

A major barrier to the utilisation of the Partograph is resistance by obstetric care givers or midwives to the use of this tool. Resistance on the part of the midwives is usually due to the perception that the Partograph is restrictive and erodes the autonomy of the midwives to manage labour in totality^{156,157}.

The Partograph is a tool that presents labour course as pure midwifery for progress within the alert line when the cervical os dilatation rate is 1cm per hour or more for which labor course and delivery is completely managed by the midwives. However, when the labour progress cross the alert line and definitely the action line, such labour anomaly is no longer midwifery and the midwife is mandated to hand over the care of such cases to the obstetrician with the requisite knowledge, to handle such cases. This is the restriction that is resisted by the midwives who believe that their mandate for labour care includes managing progress that has crossed the alert and action lines.

(d) Lack Of A Uniform Protocol For The Use Of The Partograph In Tertiary Level Labour Care

The Partograph is used for labour care in most teaching hospitals but they all use different protocols¹⁵⁴. The difference in the protocol reflects the view of the staff at the centre on various aspect of the W.H.O. protocol for the use of the Partograph. The issues are the 2 hours or 4 hours between the alert and action lines, the use of the alert and action line in tertiary centre labour ward; the time to perform ARM for women in active phase labour and when to commence oxytocin

augmentation for those with uterine inertia, manifesting as slow labour progress without cephalo pelvic disproportion (C.P.D).

(e) The Use of the Alert and Action Lines in Tertiary Level Care Labor

Ward: By the original concept of Phillipott and Castle, the Partograph was designed for use by midwives and other non-obstetric staff conducting deliveries at the peripheral unit. The alert line was inserted for easy recognition of progress less than 1cm per hour for transfer to the bigger units for further care. At the action lines, AML intervention like augmentation etc are commenced⁷². At the tertiary centre where the parturient are not being transferred anywhere else, the use of the alert and action lines has remained unclear. While some workers suggested that the alert line has no use whatsoever in a tertiary level labour care and should not be used, others believe that only the action line has any usefulness in tertiary level care in helping to pinpoint when interventions should begin¹⁵⁹.

These conflicting views constitute significant barrier and confusion even to the extent that some even use the Partograph without the alert and action lines in some tertiary centres. In current obstetric practice the use of the alert line in a tertiary centre should be the same as in a peripheral unit which is the transfer of cases crossing the alert line to the care of the obstetric team in the same labour ward.

2.1.16 The Component Needed for the Partograph to Function

The challenges of efficiently using partographs are the root of many of the problems associated with their use. The studied literature contains only a scant explanation of implementation strategies. The low rates of compliance and the implication that the partograph is not integrated into ordinary care point to a lack

of "normalization" of the partograph into care routines¹⁰⁴. As a result, there seems to be a general lack of commitment, which has led to the partograph's uneven (at best) acceptability and use in clinical practice. The partograph must be accepted by healthcare professionals who treat laboring women for it to function¹⁰⁴.

Although the majority of healthcare professionals now have good attitudes about the partograph, there are still a number of obstacles to be removed in order to create an environment that will allow for the consistent and efficient use of the partograph in practice. These consist of the presence of resources, their accessibility, their use competency, and the monitoring and evaluation of the partograph in use by the health system. Promoting a supportive culture for partograph use requires the dedication and support of the health system¹⁰⁵. The research pertaining to the partograph did not discuss the role of the health system per se, but the necessity to strengthen such systems is widely accepted in that literature^{105,106}. The partograph is not the center of care, according to the most recent evidence, and there is little oversight.

The partograph must have positive validation from leaders, managers, and supervisors; this validation must be reinforced through coaching, auditing, and evaluating partograph use. Supervisors and other leaders need to "buy-in," as they are most likely to have a say in fostering a climate that is conducive to partograph use. Supervisors in the clinical setting can also offer direction and validate clinical judgment based on partograph findings. Utilizing the partograph effectively also requires multidisciplinary cooperation, which has a higher chance of success when the health system is involved¹⁰⁷. Health professionals who are attending to laboring women in need of care should have access to and be aware of facility-

level recommendations. Both instructions on interventions and the duties of those present in the care environment should be included. At a fundamental level, support in the form of provision of resources, such as the partograph itself and equipment required for completion, is essential but currently insufficient to enable continuous use¹⁰⁷.

According to recent surveys, health workers' partograph use skills are lacking. Training in partograph use is crucial in any institution where the partograph is utilized since it increases knowledge and partograph completion in practice^{88, 29, 34, 108, 67, 1, 9, 109, 110, 111, 112}. Additionally, numerous of the included studies found that trained workers wanted additional training, demonstrating the need for constant reinforcement in the growth and maintenance of skills. ^{113, 90, 114, 115, 29, 28, 9}. The adoption of interdisciplinary training methodologies may enhance understanding of roles and foster teamwork, even though individualized training has been shown to be effective in enhancing partograph knowledge^{111, 112, 116}.

Practical training techniques can also increase learning and patient outcomes^{117, 118, 119}. All personnel who assist women in labor should have partograph use training and frequent updates. Such training must adhere to tried-and-true training strategies, like multidisciplinary training models¹¹⁹. Such training must cover both completion and decision-making techniques, such as when to begin the partograph, when to act, and the proper referral procedures.

In the short term, partograph use increases because to health worker training, but maintenance is crucial in the long run. Indications that organizational culture can have a detrimental impact on use^{113, 59}. It may also necessitate taking into account

setting-appropriate behavior change tactics for supervisors and health workers alike ¹²⁰. The promotion of long-term partograph use necessitates ongoing audits, assessments, and feedback. A supervisor's audit and criticism have been found to increase partograph utilization as well as performance in terms of professional practice¹²¹. A plan like this will promote learning, show the health system's continuous commitment to the partograph, and offer crucial information about outcomes. One issue with the partograph in current use is the failure to evaluate the tool at the facility level in terms of outcomes.

This is crucial for assessing the effect that partograph use has on care delivery, referrals, and particular labor outcomes. Furthermore, partograph use is more likely to become standard practice if health professionals and organizations can see favorable results from it.

2.2 Empirical Review

2.2.1 Level of Knowledge of Partograph among Obstetric Caregivers

Knowledge is a prerequisite to the utilization of the partograph. This can be achieved through in-service training among working obstetrics caregivers. Intensive teaching of obstetric caregivers before implementation of the partograph improves partograph utilization.

Knowledge of the components of the partograph and their implications while monitoring labour is key among obstetrics caregivers monitoring mothers in labour ⁸⁸. Poor utilization of the partograph during labour can be affected by health input factors, which can be achieved through obstetrics caregivers being

trained on the partograph and through the provision of guidelines on partograph use⁸⁸.

Qena University Hospital in Egypt for example revealed that respondents had a good level of knowledge about the partograph as more than half (258, 55.8%) of the obstetric caregivers demonstrated good knowledge about Partograph. Two hundred sixty-five (57.4%) of the obstetric providers knew the definition of partograph and 305(66.0%) of them knew when to start plotting on the partograph. A total of 221(47.8%) and 203 (43.9%) obstetric care providers knew about the function of the action line and were satisfied with the progress of labor, respectively. Half of the participants (233, or 50.3%) knew the correct function of the alert line on Partograph¹³². This is similar to a qualitative study conducted in Nigeria and Uganda that showed that more than two-thirds (70.5%) of the care providers had a good level of knowledge. Almost all (99.8%) of the participants had learnt about partograph while at college or university. Over half (59.3%) of them received on-the-job training on partograph. The majority (83.6%) of obstetric care providers had a favourable attitude towards the partograph²⁶.

Comprehensive training on partograph among obstetrics caregivers promotes its use, which reduces prolonged labour, augmentation of labour, emergency cesarean sections, and stillbirths. The attendant should be well trained so that they can have competence for better utilization of the partograph ⁸⁵. The impact of training among obstetrics caregivers on partograph use demonstrates improved utilization of the tool. Despite good knowledge of partograph use among obstetric care providers, poor utilization of the partograph in most health facilities can be attributed to a lack of partograph training⁸⁸. Prior training significantly influences the effectiveness of partograph utilization. It was further reported that the

partograph was frequently utilized by health workers at the tertiary level compared with health workers at the primary and secondary levels because of the regular on-the-job training at the tertiary level⁹⁰.

Low utilization of the partograph among obstetrics caregivers can be associated with the majority of them not attending seminars and updates, which can be achieved by attending refresher courses after graduating from their training institution¹²⁷. Poor documentation of the partograph was reported in a study done in Malawi, where most of the obstetrics caregivers were found to have documented the partograph partially¹⁰¹. At its conception, safe motherhood (SMH) training was aimed at increasing partograph use by 74%, together with improvement in recordkeeping and labour management. A one-time training did not have a significant impact on partograph utilization in the safe motherhood initiative, but rather a series of training that updated obstetric care providers on partograph use. SMH is important in providing ongoing education, quality assurance, and supervision in order to have a lasting impact on partograph completion.

Most parameters on the partograph are never monitored by the health care provider, and the findings are not documented on the partograph after attending to the woman in labour. As a result, the progress of labour is never closely monitored, which may not translate into appropriate action. Sometimes the healthcare provider feels that effective completion of the partograph is a time-consuming task, while others do not always understand how the partograph can save a woman's life. The attitude of the healthcare provider has a potential influence on partograph utilization. Without a positive attitude, the partograph cannot guide healthcare providers to take appropriate decisions during labour⁸⁵.

Low acceptance of the partograph by obstetric care providers during labour can be influenced by attitude and a lack of understanding of the tool's importance. However, utilization of the partograph is not widely used because obstetric caregivers feel completing the partograph is an additional task and time-consuming. A negative attitude towards partograph use is attributed to the partograph restricting clinical practice by reducing the autonomy of the obstetric caregiver, thus limiting their critical thinking and judgment⁸⁹.

2.2.2 Experience of Obstetric Care Giver

The experience of the obstetric caregiver is important in regard to the use of the partograph. Despite having good knowledge of the partograph, poor utilization of the partograph in labour can be attributed to the obstetric caregiver interviewed's lack of experience. Because of the lack of experience required for effective use of the partograph, junior nurses have limited knowledge of its use¹⁰⁸. Young obstetric caregivers in terms of experience may not utilize the partograph because they fear making errors²⁸.

2.2.3 Acceptability of Partograph Use for Monitoring Labour among Obstetrics Caregivers

Acceptability of an electronic Partograph was assessed through skilled birth attendant interviews and by observing skilled birth attendants' comfort and confidence as they used the ePartogram. In Uganda for example the partograph is widely accepted. Short interviews and IDIs revealed that skilled birth attendants had positive impressions of the ePartogram, beginning from its first use with a client. A skilled birth attendant said, after the first time using the ePartogram with a client, *"It is good because it reminds me of my responsibilities, it improves my*

self-confidence and my working prowess, and when it sounds off, I make the required decisions."¹³²

During the IDIs, skilled birth attendants reiterated the positive aspects of the e-Partogram as a timesaver and a tool to help organize their work. It was widely reported that the content and information contained within the ePartogram were similar to that of the paper partograph. However, the ePartogram was perceived by skilled birth attendants to be a timesaver and was preferred over the traditional paper partogram

Skilled birth attendants reported that the reminders auditory alarms indicating when a clinical measurement is due were clear and helpful, and at times brought a greater sense of professional fulfillment.

However, many of the skilled birth attendants expressed that the alerts reinforced their existing clinical knowledge rather than changed their decision-making process.

A qualitative finding showed that COs perceived that skilled birth attendant confidence and comfort in using the e-Partogram increased over each shift. By the fifth shift, all skilled birth attendants appeared to be comfortable using the e-Partogram, and nearly all (93%) appeared confident in using it.

Findings revealed that the willingness to use mobile-based e-Partograph and associated factors among care providers in the North Gondar Zone, Northwest Ethiopia, is low. The majority of obstetric caregivers (257, or 56%) were not willing to use their mobile phones for e-Partograph¹³².

2.2.4 Partograph Utilization among Obstetric Care Providers

The feasibility and acceptability study in Zanzibar, Tanzania revealed that skilled birth attendants generally reported that they felt comfortable using the e-Partogram when they first used it with a woman in labour. A few of them reported difficulty understanding where to enter maternal and fetal data when using it for the first time, but this was no longer a concern with their second client. Skilled birth attendants who had used the ePartogram for two or more clients expressed that the e-Partogram was becoming easier to use and that data entry was simple and quick¹³¹.

Other possible aspects include storage and administration of the tablet by qualified midwives. The results showed that more than 80% of the skilled midwives in the first shift cleaned both the drain and the drain cover according to the standard procedure, and this increased to 100% of the skilled midwives in the fifth shift. The tablet battery died three times across all shifts (81/84, 3.5%). In all other shifts, the tablet's battery was continued or recharged when it was low. During the first shift, almost half of qualified OBs (52%) kept the tablet in a central location or on the table, while other qualified OBs kept it in their pocket (26%) or on the charger (17%) they had in the fifth shift, the absolute majority of midwives (85%) kept the tablet in the central place.

The following factors were identified as significantly associated with partograph utilization: health facility where they worked; profession; qualification level; on-the-job training; and knowledge and attitude of obstetric care providers toward partograph. However, in multiple logistic regression analyses, only profession, on-job training, knowledge, and attitude of obstetric care providers towards

partograph were significantly associated with partograph utilisation. Midwives were approximately 8 times more likely than general practitioners to use the partograph on a consistent basis (AOR = 8.13, 95% CI: 2.67, 24.78). Those obstetric care providers who received on-the-job training on partograph were about 3 times more likely to utilize partograph than those who hadn't received on-job training (AOR = 2.86, 95% CI: 1.69, 4.86). Furthermore, those who were knowledgeable about partograph were approximately four times more likely to use it than those who were not (AOR = 3.79, 95% CI: 2.05, 7.03)²⁶. Furthermore, those who had a favourable attitude towards partograph utilization were about 2 times more likely to utilize partograph than those with a negative attitude (AOR = 2.35, 95% CI: 1.14, 4.87) had a higher chance of being assigned to delivery wards and consequently received training on partograph utilization, which might, in turn, have improved their knowledge and skills to utilize partograph than others. In Amhara region for example midwives had better knowledge of partograph. Secondly, as obstetric care is their major duty; they might have a better understanding of partograph utilization than others. On-the-job training on partograph had a significant association with partograph utilization. Obstetric care providers who received on-the-job training on partograph were about 3 times more likely to utilize partograph than those who had not received on-job training¹⁹. This could be because obstetric care providers who received on-the-job training knew more about partographs than others, which improved their partograph utilization. Those providers who were knowledgeable about partograph were about 4 times more likely to utilize partograph than the non-knowledgeable^{13, 14, 19}. In Niger Delta region of Nigeria a similar research was conducted which reveals that having knowledge about partograph is important to implement partograph

during labour. Furthermore, the study found that attitude is another factor influencing partograph utilization. Partograph utilization was significantly higher among obstetric care providers who had a favourable attitude as compared to those who had an unfavourable attitude. This could be due to the fact that having a good attitude towards partograph utilization might come after having knowledge about partograph that may influence the utilization of partograph.

The knowledge and skills of midwives in monitoring the progress of labour using a partograph revealed that all midwives in the study 100% (n=122) had used the partograph previously, and they all reported that the partograph was used to monitor the progress of labour. All respondents indicated that the partograph was filled routinely and was filled while the woman was still in labour, as opposed to the option of filling it after delivery. 93.4% of respondents agreed that obstructed labour could be diagnosed on the partograph. 96.7% who responded 'agree' that a diagnosis of prolonged labour could be made on the Partograph. 96.7% (n =118) who responded 'agree' that poor progress of labour could be diagnosed on the Partograph. Regarding the diagnosis of CPD, 95.9 % responded with "agree" that this diagnosis could be made, 2.5 % replied with "strongly disagree," and only 1.6% replied that they neither agreed nor disagreed that this diagnosis could be made. The majority (73%) who responded 'agree' that fetal distress could be diagnosed on the Partograph. Only 17.2% responded 'disagree' and another 9.8% responded 'neither agree nor disagree". Many participants (91.8% agreed that a diagnosis could be made for the need for augmentation of labour, whilst 4.1% "disagree" and "neither agree nor disagree". A large number of participants (72.9%) responded "agree" that the need for a caesarean section could be

diagnosed on the partograph, and 14% said "disagree," while the rest, 13.1%, "neither agree nor disagree"¹⁴⁹.

A large number of respondents 75.4% agreed that a partograph may be used in decision-making for referral decisions in health centres, while 79.5% agreed that it may also be used in decision-making interventions in different institutions. Partograph could help reduce maternal deaths and morbidity, according to 68.8% of participants (n =84). 96.7% agreed that this tool plays a key role in reducing neonatal deaths and perinatal morbidity. 90.9% of participants agreed that this tool is used to diagnose early complications, and 95.1% also agreed that this tool assists midwives in making the correct interventions for both mothers and neonates. 86.9% mentioned that Partograph does not replace adequate screening for pregnant women who require immediate intervention. A huge percentage of 95.9% of participants acknowledge the use of a partograph to identify problems in labour, and only a minimum of 1.6% disagree. Participants representing 29.5% agreed that the composition of a partograph is seen as difficult, with only 51.6% disagreeing. 97.6% of participants agreed that the contents of the partograph should include the patient's details. Furthermore, 96.7% agreed that the partograph includes the type of labour, duration of labour, and maternal condition. 97.5% also agreed that latent and active phase medication was given from the composition of the partograph. The majority of the participants (97.6%) agreed that the partograph consists of the time of rupture of membranes, risk factors, fetal condition, and progress of labour as well as contractions¹⁴⁹.

Utilising the partograph evoked differing emotions in midwives that indicated partographs gave them confidence and assurance in their practice. They felt happy when the partograph helped them deliver a woman safely. They felt guilty

when they were not able to use the partograph and the outcome of the Labour was detrimental. It was discovered that the midwives felt fear and anxiety when they were unable to complete the partograph and the labor became complicated, as well as frustration when staff shortages and high patient loads hampered their ability to complete the partograph¹⁵⁰.

2.2.5 Barriers and Facilitators to the Use of Partograph by Obstetric Caregivers

(1) Employment of Obstetrics Caregivers

The unemployment of obstetric caregivers influences the quality of care offered to women in labor. Women in labor require close monitoring and recording by a qualified obstetric caregiver at a short interval during labor. Unemployment of obstetric caregivers hinders proper monitoring of mothers in labour⁸⁵. In cases where there are so many clients, an obstetric caregiver may become exhausted, which may lead to using shortcuts, leading to underutilization of the partograph. The number of obstetric caregivers to women in labor plays a role in the utilization of the partograph. More staff on duty utilizes the partograph more than when there is a shortage of obstetric caregivers attending to mothers in labour⁸⁸.

(ii) Workload

At Namibian Regional Hospital, for example, obstetric caregivers who were interviewed demonstrated that the heavy workload in the labor ward influenced the quality of care offered to women in labor. The study further revealed that since women in labor required close monitoring, a heavy workload was likely to hinder proper monitoring of mothers in labor, which led to underutilization of the partograph in monitoring women in labor. Findings by Harvey showed that when obstetric caregivers working in maternity wards cared for more women in labour

in a given shift, they were likely to be fatigued as a result of a heavy workload, which compromised the care of mothers in labour¹⁵⁰.

At the kwini District in KwaZulu-Natal for example, midwives agreed 59.1% that filling the partograph may be seen as an additional task in a busy situation, while 96.7% also agreed that insufficient knowledge and lack of understanding of partograph could also result in inappropriate usage, only 76.3% agreed that an increased number of students to be facilitated also contributes. Furthermore, 46.7% agreed that lack of commitment and ignorance also contribute to inappropriate use of the partograph¹⁴⁹. Finally, the majority of participants 92.7% agreed that fully dilated patients are one of the contributing factors that limit partograph use. Only 5.9% disagree with this.

(iii) Resources

Data across African countries has shown that poor utilization of the partographs associated with lack of resources which include: pre-printed graph papers, surgical supplies and equipment such as blood pressure machines, thermometers, gloves and charts used by Obstetric Care giver in the labor wards ¹²⁶. Most of these supplies lack in most of the maternity units which made it difficult for Obstetrics care giver to monitor mothers in labor using the partograph ¹¹².

(iv) Supervision

The impact of supervision on partograph use among Obstetrics care giver working in maternity ward, in conducted in Asia showed that supervision by head of departments in maternity wards influenced utilization of the partograph positively. Further, the study indicated that supervision ensured that Obstetrics care giver were able to remember to utilize the partograph while monitoring women in labor¹²⁸. World Health Organization discovered that partograph utilization in

tertiary level hospital was promoted by frequent supervision by the departmental heads in labor ward ⁸.

In Egypt for example, factors affecting willingness of obstetric care providers to use mobile phone for e-Partograph were assessed using bivariate and multivariable analysis. In bivariate analysis; age, marital status, profession, type of Mobile phone owned, knowledge, and attitude on Partograph and in-service trainings received on Partograph were found to be significantly associated with willingness to use mobile phone for electronic Partograph.

Based on multivariable logistic regression analysis, care provider's age of >30 years (AOR=2.85, 95% C.I: 1.34-6.05), type of profession of medical doctor and above (AOR=8.35, 95% C.I: 2.07-33.63), type of facility of health center (AOR=4.41, 95% C.I:10-9.26), smart mobile phone owners (AOR=.39, 95% C.I:.21-.74), favorable attitude towards Partograph (AOR=2.76, 95% C. I: 1.49-5.09) and in-service trainings received on Partograph (AOR=7.63, 95% C.I: 3.96-14.69).

In Amhara region Low utilization of partograph was part of the findings. The low standard recordings in moldings (2%), liquor status (3.2%), descent(3.9%) and all maternal conditions (temperature, BP, Pulse rate and urine output): 3.2,14.9,10.4 & 1.3percents respectively were observed but high recordings were done. In public health institutions of Addis Ababa for example liquor status (26.9%) and BP(18.6%) were recorded¹³⁴. In Ghana for example molding, liquor state, descent and BP & Pulse rate were 32.5, 33.9, 55 and 40 percent's respectively ¹³⁶. This inconsistency might be due to less skill in determining molding and descent or placed less emphasis on its importance in the progress of labour and maternal conditions in this setup. The parameters are higher than the study conducted in

Ghana (19-35.5%) and Kenya, most of parameters^{136,137}. This gives an impression that either labor monitoring in the hospital is poor or there is inadequate recording of parameters in the partograph. Majority of fetal parameters: liquor state 196(63.4%) and molding 246(79.6%); labor parameter: descent 234(75.7%) and maternal parameters: temperatures 222(71.8%) and urine output 289(93.5%) were not recorded at all¹³³. Similar with the study conducted in public health institutions of Addis Ababa; molding in 86.7% and descent in 84% not recorded¹³⁴. This indicates very poor practice in utilization of partographs which are designed as a tool to monitor the laboring mothers. In the present study, finding was good regarding neonatal outcome ; Apgar score at 5th minute ≥ 7 in 268(86.7%), resuscitated in about 65(21%) and admitted to neonatal ICU for special care in about 46(14.9%) of the cases. Some reasons for admission to neonatal ICU were; 18(5.8%) low Apgar score, 8(2.6%) abnormal weight, 6(1.9%) meconium aspiration and birth asphyxia and others (congenital anomalies, abnormal breathing and unable to suck) accounts 8(2.6%). The study has shown overall perinatal outcome as good in 247(79.9%) and poor outcome in 62(20.1%). The fetal outcomes in 253 (80.0%) of the cases Apgar scores at 5th minute was greater than or equals to seven, 44 (14.1%) were admitted to special nursery unit, in Jimma university specialized hospital ¹³⁵. Almost half of the duration of labour was ≥ 18 hours (48.5%) and about 237(76.7%) of the cases came to hospital after 12hours. However, in Jimma university specialized hospital (27 (8.6%) of cases their duration of labor was greater than /equals to 18hours none of the cases present beyond 12 hours in India; admission to neonatal ICU decreased from 17% to 6%, C/S reduced from 44% to 21% ^{135,138}. This discrepancy might be due to shortage of infrastructures to come early to the hospital in this study, or other

possible reason might be lack of awareness. There were 16(5.2%) intrapartum stillbirths among the reviewed partographs. In the reviewed partographs there were no details of these still births. Somehow, consistent with the study conducted in Jimma University specialized hospital (7.7 %) neonate died during the first 6hours of delivery ¹³⁵. Those who were not resuscitated were about 4 times more likely to have poor neonatal outcome than those who were resuscitated [AOR=3.930, 95% CI: (1.231, 12.543)] and those whose their Apgar score of ≥ 7 at 1st minute were about 97.4% less likely to have poor neonatal outcome than who were delivered with apgar score of < 7 at 1st minute [AOR=0.036, 95% CI: (0.012, 0.112)]. This result was similar with what had been observed in Jimma university specialized hospital¹³⁵. However, it is different in Ghana, in which Apgar score at 1st and 5th minute has no different significant associations¹³⁹. The possible explanations for this contrast might be due to variation in study setup and disparity in judging birth outcome as good or poor; including maternal outcome.

In another study findings showed that all obstetric care givers interviewed had been previously trained to use the partogram¹⁴⁰. Of all partograms reviewed, 50% had no records of duration of labor. Although cervical dilation and fetal heart rates were recorded in 97% and 94% of the partograms respectively, 63% and 91% of these were judged to be substandard. Substandard monitoring of fetal heart rates was strongly associated with poor fetal outcome ($P < 0.001$). Blood pressure, temperature, and pulse rates were not recorded in 47%–76% of partograms.

A study revealed that based upon review of 420 of the modified WHO partographs across all the health units, foetal heart rate was not recorded in 174 (41.1%) and the records were judged to be sub-standard in 117(27.9%) while

recorded up to the recommended standard in 129(30.7%) of the partographs reviewed¹³⁴.

In 364 (86.7%) of the 420 modified WHO partographs reviewed, moulding of foetal head was not recorded at all, while in 26 (6.2%) and in 30 (7.1%), it was plotted below the standard and up to the recommended standard respectively.

The status of membranes was recorded only in 113 (26.9%) of the partographs reviewed while not recorded at all in 307 (73.1%). Measurement of cervical dilatation was recorded in 248(59.1%) of the partographs but almost half [110(44.4%)] of these records were substandard while cervical dilatation was not recorded in 172(41.4%) of the partographs. Uterine contraction was not recorded in 189 (45.0%) while recorded to the standard in 87(20.7%) and sub-optimally recorded in 144 (34.3%) of the partographs.

Descent of the presenting part was not recorded in 353(84.0%) of the partographs reviewed. The action line of the cervical graph was crossed only in 15(10.9%) of the recorded partographs. Two hundred seventeen (51.7%) deliveries during the period of study had their blood pressure monitored. Seventy eight (18.6%) were monitored to standard while 139(33.1%) were substandard. Condition of the baby after birth was assessed using the Apgar score system. Apgar score was not recorded in 17 (4.1%) of the studied partographs. In 79.3% of the partographs, where the condition of the new born had been recorded, live babies were considered to have been born in good condition (Apgar score 7–10). From labour parameters monitored on the reviewed partographs, cervical dilation was better monitored (32.90%). The least standard monitored parameter was descent of the foetal head which was only recorded in 6.9% of the partographs.

2.2.5 Caregivers Adherence to Partograph Utilization

In Ethiopia for example on the Health care professionals' adherence to partograph use in analysis of 2016 national emergency obstetric and newborn care survey showed that availability of partograph forms were reported in 94.7% of the health facilities¹⁴¹. Among the 2611 partographs reviewed, 561(21.5%, CI: 19.91, 23.06) of them were recorded to the standard based on the WHO guidelines. The median time of hours and minutes elapsed between first exam and delivery was 4:0 (IQR 4:20) hours. The median of FHB at admission was 140(IQR = 10) beat per minute. Majority, 2166 (83%) of the partographs were filled in as labour progressed, while 445 (17%) were judged to have been filled after delivery. Apgar score was not filled in about 586 (22.4%) of cases. The bivariate analysis showed that at facility location, level of EmONC, experience of the provider, type of facility, managing authority and providers' level of education were found to be significantly associated with adherence to partograph use. After multivariate analysis, only location of the health facility was found to be significantly associated with the standard of partograph recording. Hence, the odds of adherence to the standards of partograph record was 1.4 in health facilities located in rural areas when compared to health facilities located in urban areas (AOR = 1.44; 95% CI:1.15, 1.80, P-Value 0.002)

Obstetric care givers found it a positive experience to use the partograph when caring for a woman in labor because the partograph is essential to optimally monitor and manage labour, it is simple to use, and it is a very good communication instrument when used correctly¹⁵⁰. However, major challenges noted were that the staff/patient ratio which was unrealistic as one midwife/obstetric care giver has to care for too many patients, also respondents

indicated that it was time consuming to effectively implement the partograph correctly, there was lack of resources which cause problems when using the partograph, new staff entering the unit may have insufficient knowledge on the utilization of the partograph which might lead to problems, discrepancies in monitoring the progress of labor because of the different method of inputting data used by different staff.

In Central Ethiopia for example findings revealed that the personal factors that influence the use of partograph include skill incompetency in carrying out the assessment with the partograph with a mean response of 2.6 ± 0.87 ; the fact that filling the partograph is time-consuming 2.8 ± 0.55 ; lack of adequate orientation to partograph use of 3.2 ± 0.78 ; and inadequate educational background 2.8 ± 0.59 ¹⁵². It also revealed that the institutional factors influencing the use of partograph among obstetric caregivers in healthcare centres in Orlu L.G.A. the factors include non-availability of partograph charts in labour wards 2.9 ± 0.92 ; lack of adequate orientation to partograph use 3.4 ± 0.58 ; lack of training of staff through the organisation of seminars/ workshops on partograph in the health care facilities 3.3 ± 0.47 ; lack of supervision 3.4 ± 0.61 ; availability of other methods to observe woman 2.5 ± 0.64 .

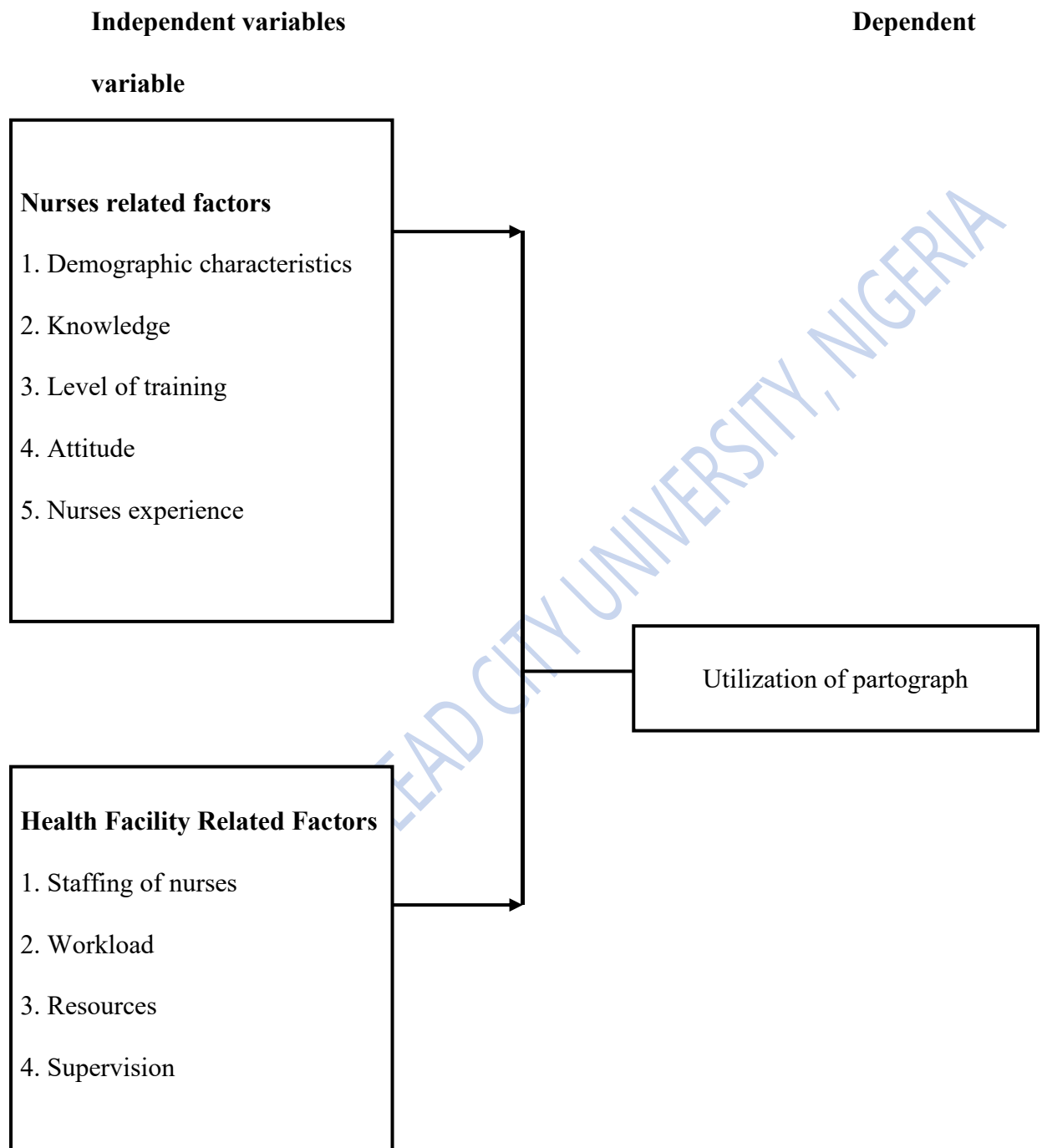
It was revealed that shortage of staff was one of the perceived barriers for the use of the partograph. This reflection revealed there is a midwife shortage in the facility. This could cause ineffective and inefficient use of the partograph during labor because there is no time to attend all laboring mothers using the partograph without rushing. In most health centers, there are only one or two midwives. During night duty, probably one midwife and one clinical nurse can be assigned for all tasks¹⁵³. Respondent said, *“Because of a lack of time and a shortage of*

midwives, we give more attention to complications ... such as bleeding, PROM....

We had never used this tool.”

This study also showed that this tool was not used due to negligence; respondents explained the main reason obstetric caregivers utilized the partograph below the required standard was due to negligence. Informants said some of the care providers were careless in utilizing and completing the partograph. We understood that at midnight health caregivers became exhausted and bored. They believed that lack of incentives, recognition, promotion, refreshment, patience and commitment were the main reasons for poor utilization. Others explained that “although the partograph is a standardized tool used to improve maternal and neonatal outcomes, most midwives and gynecologists are not using this tool consistently.”

2.3 Conceptual Framework



Source: Adopted and modified from ¹²²

Figure 2.1: Utilization of the partograph conceptual framework.

Donabedian's conceptual model on quality care, which focuses on system evaluation, served as the framework for this study. Since this approach is adaptable and produces high-quality patient care, it may be used in any circumstance. This paradigm makes use of three crucial evaluating systems which are:

1. Structure,
2. Process and
3. Outcome¹²²

The system utilized in this study is how obstetricians employ the partograph, a tool for providing high-quality care to laboring mothers. The structure indicates characteristics of the potential care setting¹²². The characteristics of the process may include any action used to produce the desired result, such as user knowledge, attitude, and training.

- a. **Training:** The theory behind Donabedian's conceptual model states that training assesses a person's level of intention to assess the behavior. According to the theory, self-efficacy of perceived behavioral control refers to a person's capacity to successfully engage in a certain behavior, which may be learned. A trainee in obstetrics who receives instruction in both theory and practice is more likely to use the partograph than one who only learns theory¹²³.
- b. **Knowledge:** According to the idea, knowledge is both one of the most effective predictors of behavior and one of the motivational elements that impact particular behaviors. For instance, a midwife is more likely to

utilize the partograph when they are knowledgeable about how to do so than when they are not¹²⁴.

- c. **Attitude:** According to the notion, a person's attitude is made up of their beliefs about the consequences of their behavior multiplied by how much they value those effects. For instance, if an obstetric care provider views the use of the partograph negatively and as time-consuming, this unfavorable attitude is likely to persuade other obstetric care providers not to use the partograph.¹²⁴.

2.3.1 The Influence of Variables on Utilization of the Partograph

Demographics: These include the number of years of experience and educational background of the obstetrics care provider. The partograph is more likely to be used by obstetric care providers with greater education and experience than by those with less education and experience¹²⁴.

Knowledge: High-skilled obstetric care providers are more likely to use the partograph than those with lower skills. While poor understanding has a detrimental impact on partograph use, enough knowledge encourages its use¹²⁴.

Level of Training: Obstetric care providers who have received partograph training are better knowledgeable about using the partograph and are therefore more likely to use it than those who have not¹²⁴.

Attitude: According to the obstetric care provider, this is how the partograph is used. If obstetrics care providers have an unfavorable perception of it, the partograph will not be used as intended. Partograph use among women in labor is underutilized due to poor documentation and obstetric care providers' negative attitudes toward it¹²⁴.

Level of Utilisation: Whether the partograph is used or not is indicated by this. Numerous circumstances, such as those relating to the obstetrics caregiver or the medical facility, may have an impact on this¹²⁴.

Staffing: Due to the high number of laboring women, there are not enough staff members, which results in low partograph usage. The maternity unit's staffing is crucial to the usage of partograph. While partograph use is encouraged by enough staffing, it is discouraged by understaffing¹²⁴.

Workload: Obstetricians get overburdened by a high patient turnout in labor wards, which results in a poor partograph utilization rate¹²⁴.

Resources: These include the tools and supplies used to keep an eye on laboring women. Lack of these resources may prevent the partograph from being used¹²⁴.

2.4 Summary of Gaps in Literature

Information about the partograph and its level of use was covered in the literature review. The majority of the research mentioned above has demonstrated that using the partogram correctly to track the course of labor improves mother and fetal outcomes. The partogram also serves as an early warning system, identifying women who may require special assistance. It is clear that the majority of the prior study on partographs concentrated mostly on obstetric care providers' knowledge and utilization of the partograph. There are a few studies focusing on Obstetric caregiver related factors and health facility factors and their influence on utilization of the partograph among Obstetrics caregivers working in maternity units, but the majority of studies on Obstetrics caregiver related factors and health facility-related factors influencing utilization of the partograph had been done in other parts of the world and not only in Nigeria, according to the reviewed literature.

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Chapter Three

Methodology

3.1 Research Design

The institutional-based cross-sectional study design was conducted to assess the level of partograph utilization and associated factors among obstetric care providers in Public Hospitals in Ogun State (State Hospitals and Flagship Primary Healthcare Centres).

Study Location

Ogun State operates a 3-tier health system of primary, secondary, and tertiary level of care that spread over rural and urban areas. There are 1,309 accredited health facilities disaggregated into 488 primary health facilities, 40 secondary health facilities (which include one Hansen's disease center), four tertiary hospital (one of which is a private hospital: Babcock University Teaching Hospital) and 777 private health facilities. The state is also divided into five health zones namely Abeokuta, Ijebu ode, Ilaro, Ota and Remo health Zones.

The primary health care (PHC) level is designed to provide general health services of a preventive, promotive, curative and rehabilitative nature to the population. It is the entry point to the health care system. Health facilities are static or mobile structures where different types of health services are provided by various categories of health workers. These health facilities are in different groups and called different names depending on the structure (building), staffing, equipment, services rendered, and by ownership. Based on the Ward Health System, the three recognized facility types are: (i) Health Post (ii) Health Center /Clinic (iii)

Primary Health Centers (PHCs). The secondary level provides specialized services to patients referred from Primary health care level for medical, surgical, pediatrics, obstetrics and gynecological care management and community health services. Secondary health care is available at the LGAs as defined by the authority of the state. Supportive services such as laboratory, diagnostics, blood bank, rehabilitation, and physiotherapy are provided at the secondary health care level. The tertiary level is the apex of the health care delivery. It is called the third level of the health system in which specialized consultative care are provided usually as the referrals from primary and secondary health facilities In the state. There are advanced diagnostic support services, specialized intensive care unit and medical personnel.

3.2 Study Population

The source population includes all obstetric care providers (CHEWs, Nurses, Midwives, Integrated Emergency Surgery Officers, Doctors, and Community Health Officers) working in all selected Public Hospitals. A retrospective document review of all partograph from a recent delivery attended in the last three months at Public Hospitals in Ogun State from April 1st, 2022, to June 30th, 2022 was done .

3.3 Sample Size

The minimum sample size was determined using the standard formula for the determination of sample size for descriptive studies. The sample size for this study was determined considering the following factors:

I. Estimated population of skilled birth attendants of 43.3% representing numbers of births attended to (NDHS, 2018)

II. A standard normal deviate of 1.96

III. 95% confidence interval

Acceptance margin error of 5%. Based on the Cochran formula, that is

$$N = \frac{Z^2 p (1-p)}{D^2}$$

$$D^2$$

Where: 0.145/0.800

n- Minimum sample size required

d- Is margin of error 5%

z- Confidence level 95%

p- Estimated proportion of obstetrics givers

$$n = \frac{(1.96)^2 \times 0.433 (1-0.433)}{(0.05)^2}$$

$$n = \frac{3.8416 \times 0.433 \times 0.567}{0.0025}$$

$$n = \frac{0.94315}{(0.0025)}$$

$$n = 377$$

Correcting for a possible non-response rate of 10%, the final calculation will be $377/0.9=419$. Therefore, a total of 419 obstetrics care giver with commensurate records were interviewed.

3.4 Validity and Reliability of the Research Instrument

The questionnaire for the study was adopted from previous studies

Sampling Method

A multistage probability sampling method was used to select participants:

Stage 1: Selection of 10 LGAs through simple random sampling out of the 20 LGAs in the state (3 LGA each from Ogun East and Ogun West while for LGAs were selected from Ogun Central)

Stage 2: Selection of 10 Public Secondary and 10 Public flagship PHCs facilities in each LGA through simple random sampling

Stage 3: Selection of respondents and their records were collected through cluster sampling technique to make a total of 419.

3.5 Data Collection

Data were collected using a structured questionnaire which was interviewer administered. While retrieved partograph of the respondent was retrieved for filling

The questionnaire is divided into four (4) different segments:

I. Social and Demographics characteristics

II. Knowledge of Partograph

III. Association between knowledge and Utilization

IV. Barriers responsible for poor and factors promoting utilization of partograph

The questionnaire was pretested in two public health hospitals in Oyo State to access the validity of the questionnaire.

3.6 Data Analysis

A structured questionnaire which was developed from different literatures was used to collect data alongside consent forms. The questionnaires were crosschecked for errors and cleaned. Information collected from the questionnaires were entered into Statistical Package for Social Sciences (SPSS) version 22.0 for analysis and statistical calculation. Descriptive and inferential statistics was done. Categorical and nominal variables were expressed as percentages and continuous variables. Chi-square test of association was done to ascertain association of some demographic variables and partograph use. Significance level was set at 0.05 alpha level.

3.7 Ethical approval

Ethical approval for this study was obtained from the Lead City University Health Research and Ethics Committee and from Ministry of Health Research Committee of Ogun State, Nigeria and written informed consent was obtained from the respondents (Obstetrics Care Givers) after details about the study was explained to them and they were assured of maintaining strict confidentiality of all information obtained from respondents throughout the course of the study.

Chapter Four

Result and Discussion of Findings

4.1 Demographic Data Analysis

Table 1 consists of the socio-demographic characteristics of the respondents. Majority of the respondents were female (83.8%) and were married (74%). More than half (59.9%) had a diploma as the highest level of education. A little below two third (61.3%) are Christians.

Table 2 presents the professional characteristics of obstetric care providers. The highest proportions of our participants were community health extension workers (58.5%), followed by Nurses (27.9%) and the least represented were community health officer (13.6%). A majority (85.9%) works in the Hospital and 50.6% have less than four years of clinical service. Care providers report that they had worked in various including delivery rooms (19.1%), antenatal clinics (12.6%), outpatient clinics (23.4%), postnatal clinics (1.7%), family planning (1.9%) and others (41.3%). A little below half (48.9%) had been trained in obstetrics care. Among those trained in obstetrics care, 53.7% had training in delivery, 26.3% had training in newborn care, 19% had training in labour, and only 1% had training in BEMONC. More than half (57.5%) had been trained in partograph and most of the care providers had worked in labour and delivery rooms.

Table 1: Socio-Demographic Characteristics of Respondents (N=419)

Variables	Frequency	Percentage
Sex		
Male	68	16.2
Female	351	83.8
Marital Status		
Single	76	18.1
Married	310	74.0
Widowed/separated	33	7.9
Religion		
Christianity	257	61.3
Islam	131	31.3
Others	31	7.4
Level of Education		
Diploma	251	59.9
Degree	168	40.1

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Table 2: Professional Characteristics of Obstetrics Care Providers (N=419)

Variables	Frequency	Percent age
Level of Education		
Community Health Extension Workers	245	58.5
Community Health Officers (CHO)	57	13.6
Nurses	117	27.9
Type of Health Facility		
Hospital	360	85.9
Health Centre	59	14.1
Years of Clinical Service		
0-3 years	212	50.6
4 years and above	207	49.4
Regular Working Department		
Delivery Room	80	19.1
Antenatal Clinic (ANC)	53	12.6
Postnatal Clinic	7	1.7
Family Planning	8	1.9
Outpatient Department (Adult and	98	23.4

under-Five)	173	41.3
Others		
Training on Obstetric Care		
Yes	205	48.9
No	214	51.1
Types of Obstetrics Training		
Received	39	19.0
Labor	110	53.7
Delivery	54	26.3
Newborn Care	2	1.0
BEMONC		
Training on Partograph		
Yes	241	57.5
No	178	42.5
Ever Worked in Labor and Delivery Room		
Yes	377	90.0
No	42	10.0

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4.2 Presentation of Data

4.2.1 Knowledge and Utilisation of Partograph among Obstetric Care Providers

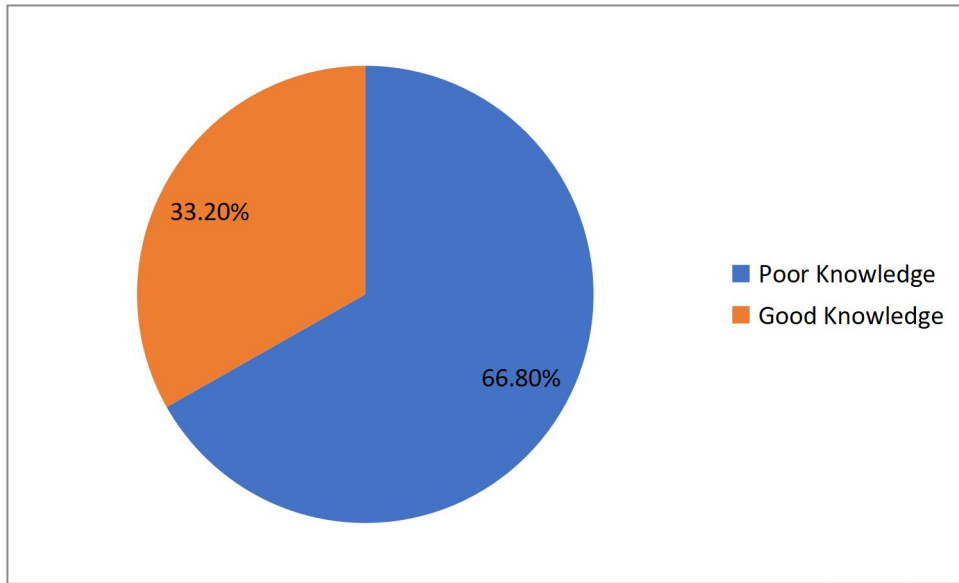
Table 3 summarises the Knowledge of obstetric care providers on knowledge of partograph. Majority been trained in partograph (61.1%) and understand at least one component of partograph. Less than half (44.6%) understands the function of the alert line. Majority understood the function of the action line (61.6%) and understands satisfactory labour progress (76.4%). Majority had good knowledge of partograph (66.8%) (Figure 1)

Table 4 summarises the practices/utilization of partograph among obstetrics care providers. Majority of the clinics had labour management protocol (71.6%) and had their partograph properly filled and attached to the chart (64.9%). Among the 261(62.3%) who reports that they have used partograph at least once, 78.2% routinely use it, 13% sometimes use it and 8.8% uses it occasionally (Figure 2).

Among the 261(26.3%), 93.5% reports that they regularly take record when the membrane is intact, 92.7% said they do remember to plot FHB hourly, 89.7% said they do plot cervical dilation every 4 hours, 81.2% takes record of the colour of liquor, 92.3% plotted uterine contraction correctly, 89.3% records when the membrane is ruptured. Almost all monitors blood pressure every 4 hours (97.7%) and monitor maternal pulse at least every 30 minutes (96.2). Most of the care providers said they do plot correctly across alert line (93.1%) and action line (90.8%).

Table 3: Knowledge of Partograph (N=419)

Knowledge of Partograph	Frequency	Percentage
Ever had Training on Partograph		
Yes	256	61.1
No	163	38.9
Understand at Least One Component of Partograph		
Yes	268	64.0
No	151	36.0
Understand the Function of Alert Line		
Yes	187	44.6
No	232	55.4
Understand the Function of Action Line		
Yes	258	61.6
No	161	38.4
Understand Satisfactory Labour Progress		
Yes	320	76.4
No	99	23.6



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Figure 1: Knowledge of partograph among obstetrics care providers

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4.2.2 To Evaluate the Utilization of Partograph for Monitoring Labour among Obstetrics Caregivers in Public Hospitals

Table 4: Utilisation of Partograph among Obstetrics Care Providers (N=419).

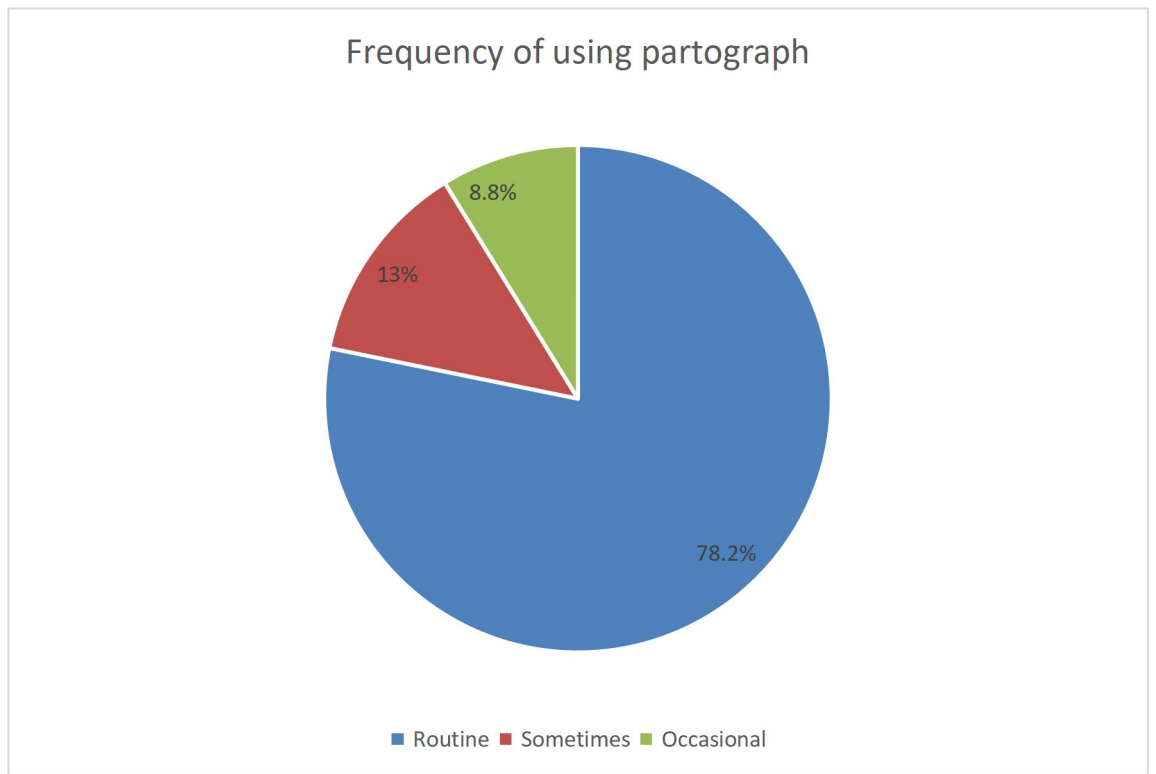
Utilization	Frequency	Percentage
Have Labour Management Protocol		
Yes	300	71.6
No	119	28.4
Partograph Attached to the Chart and Properly Filled		
Yes	272	64.9
No	147	35.1
Ever Use Partograph		
Yes	261	62.3
No	158	37.7
Membrane Act/Rupture Recorded		
Yes	244	93.5
No	17	6.5
FHB Plotted Half Hourly		
Yes	242	92.7

No	19	7.3
Cervical Dilation Plotted 4 Hourly		
Yes	234	89.7
No	27	10.3
Color of Liquor Recorded		
Yes	212	81.2
No	49	18.8
Plot Uterine Contraction Correctly		
Yes	241	92.3
No	20	7.7
Record Membrane Intact or Ruptured		
Yes	233	89.3
No	28	10.7
Monitor Maternal Blood Pressure at Least 4 Hourly		
Yes	255	97.7
No	6	2.3
Monitor Maternal Pulse at Least Every 30 Minutes		
	251	96.2

Yes	10	3.8
No		
Plot Correctly Across Alert Line		
Yes	243	93.1
No	18	6.9
Plot Correctly Across Action Line		
Yes	237	90.8
No	24	9.2

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Figure 2: Frequency of using partograph

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4.2.3 Barriers and Facilitators of Partograph Use among Obstetric Caregivers in Public Hospitals

The most common reason mentioned for non-routine utilization of partograph was shortage of staff (80.4%) followed by lack of trained manpower (78.5.6%), time consuming (71.2%), little or no knowledge of partograph (60.1%), unavailability of partograph (52.5%), much details to fill (50.0%) and the least of the reasons was using different monitoring tools (27.8%).

The most common reasons mentioned for partograph utilization were reduction of maternal death and mandatory use of partograph to improve quality of care during labour, this was followed by its usefulness in helping to reduce perinatal morbidity (96.6%), newborn death (95.4%), maternal morbidity (95.4%) and the least is the belief that it helps to increase staff efficiency (95.0%).

Table 5: Percentage Distribution of the Reasons for Non-routine Utilization of Partograph (N=158)

Reasons for Non-routine Utilizations	Frequency	Percentage
Shortage of Staff	127	80.4
Lack of Trained Manpower	124	78.5
Time Consuming	86	54.4
Much Details to Fill	79	50.0
Little or no Knowledge	95	60.1
Unavailability of Partograph	83	52.5
Using Different Monitoring Tools	44	27.8

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Table 6: Multiple Response Analysis of the Reasons for Utilization of Partograph (N=261)

Reasons for Utilization	Frequency	Percentage
Reduces Maternal Death	255	97.7
Mandatory to Improve Quality of Care in Labour	255	97.7
Reduces Perinatal Morbidity	252	96.6
Reduces Newborn Death	249	95.4
Reduces Maternal Morbidity	249	95.4
Increases Efficiency of Maternity Staff	248	95.0

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4.2.4 Chi-square Analysis of the Association between Utilization of Partograph, Knowledge and Socio-demographics

The result from this study shows that there is significant association between Profession of the respondent at P-value of 0.000, ever trained to use partograph at p value of 0.001, religion and usage of partograph at p-value of 0.000 and knowledge of partograph.

Contrastly, there is no significant association between sex, marital status, level of education, Years of service, type of facility, ever worked in a labour room and knowledge of partograph.

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Table 7: Association between Sociodemographic and Utilization of Partograph

Variables	Knowledge of Partograph		X ²	P value
	Poor Knowledge	Good Knowledge		
Sex				
Male	17.90	12.9	1.645	0.200
Female	82.1	87.1		
Marital Status				
Single	17.9	18.7	6.781	0.079
Married	75.7	70.5		
Widowed/Separated	6.4	10.8		
Level of Education				
Diploma	58.9	61.9	0.335	0.563
Degree	41.1	38.1		
Years of Service				
1-3	53.6	44.6	2.988	0.084
4 and above	46.4	55.4		
Designation				
Community Health				

Extension Workers (CHEW)	51.4	72.7	17.530	0.000
Community Health Officers (CHO)	15.4	10.1		
Diploma Nurse	33.2	17.3		
Ever Trained to Use Partograph	75.4	21.6	109.926	0.001
Yes	24.6	78.4		
No				
Religion				
Christianity	61.1	53.2	25.163	0.000
Islam	38.9	38.1		
Others	0	8.6		
Type of Facility				
Health Centre	84.3	89.2	1.861	0.173
Hospital	15.7	10.8		
Ever Worked in Labour Room	91.4	87.1	1.974	0.160
Yes	8.6	12.9		

No				
Do you Use Partograph				
Yes	85.4	15.8	191.175	0.000
No	14.6	84.2		

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The result of the findings shows that male respondent 3.95 are less likely to use partograph compared to their counterpart who are female at (0.088, 0.726 CI). Respondent that are single are 33.3 less likely not to use partograph compared to their counterpart who are widowed/separated at (0.007, 0.125 CI). They are also 3.07 less likely not to use partograph compared to their counterpart that are widowed at (0.103, 1.026 CI). Respondent who are community health officers are 1.13 more likely not to use partograph compared to their counterpart who are community health extension workers at (0.559, 2.321 CI). It also shows that respondent who are nurses are 1.40 less likely not to use partograph compared to their counterpart who are community health extension workers at (0.234, 2.171 CI). Respondent who are trained to use partograph are 5.43 less likely not to use partograph compared to their counterpart who are not trained to use partograph at (0.093, 0.354 CI). Respondent who said they have never worked in labour room are 22.2 less likely to use partograph compared to their counterpart who have worked in a labour room at (0.014, 0.149 CI). The result also shows that respondent who have poor knowledge are 41.6 less likely not to use partograph compared to their counterpart who have good knowledge at (0.011, 0.055 CI).

Table 8: Factors Influencing the Use of Partograph

Variables	UOR	95% CI	P-value	AOR	95% CI	P-value
Sex						
Male	0.543	0.304, 0.969	0.039	0.253	0.088, 0.726	0.011
Female	1					
Marital Status						
Single	0.314	0.125, 0.789	0.014	0.030	0.007, 0.125	0.000
Married	0.496	0.218, 1.129	0.095	0.325	0.103, 1.026	0.055
Widowed/Separated	1					
Level of Education						
Diploma	1					
Degree	0.857	0.574, 1.282	0.453			
Years of Service						
1-3	1					
4 and above	0.724	0.487, 1.076	0.110			
Designation						
Community Health Extension Workers (CHEW)	1					

Community Health Officers (CHO)	1.660	1.040, 2.648	0.034	1.139	0.559, 2.321	0.720
Diploma Nurse	1.038	0.525, 2.055	0.914	0.712	0.234, 2.171	0.551
Ever Trained to Use Partograph						
Yes	0.096	0.060, 0.152	0.000	0.181	0.093, 0.354	0.000
No	1					
Religion						
Christianity	1					
Islam	1.121	0.328, 3.829	0.855			
Others	1.375	0.398, 4.754	0.615			
Type of Facility						
Health Centre	1					
Hospital	1.021	0.578, 1.804	0.943			
Ever Worked in Labour Room						
Yes	1					
No	0.263	0.134, 0.517	0.000	0.045	0.014, 0.149	0.000

Knowledge						
Poor Knowledge	0.32	0.018, 0.057	0.000	0.024	0.011, 0.055	0.000
Good Knowledge	1					

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4.3 Discussion of Findings

4.3.1 Socio-demographic Information

The aim of this study is to assess the utilization of partograph among obstetrics caregivers in public hospitals in Ogun State. The socio demographic characteristics reported in this study have been documented elsewhere. For instance the profession documented in this study, where 2.6% of the respondent are midwives, 14.9% were nurses and 11.5% are public health officers, is not in line with the study carried out in Addis Ababa, Ethiopia that has 45.1% midwives, 39% were nurses, 6.2% were public health officers.

However, in this study 85.9% of the respondents were from hospitals and 14.1% were from health centers. This is higher than the study carried out in Addis Ababa that's said 31.3% of the respondents were from health centers and 68.7% were from hospitals¹⁵⁴.

4.3.2 Knowledge of Partograph among Obstetrics Caregivers in Public Hospitals

The finding from this study shows that 64% of the respondent understands at least one component of partograph, 44.6% understands the function of alert line, and 61.6% understand the function of action line. This is lower to the study carried out in Addis Ababa that revealed 96.6% of all the respondents correctly mentioned at least one component of partograph, 53.3% correctly explain the function of alert line and 82.6% correctly explained the function of action line.¹⁵⁴

Also from the result, majority of the respondent 66.8% had poor knowledge of the partograph. However, respondent lacked detailed knowledge of the component part of partograph. For instance 38.4% of the respondent could not locate the

action line, 55.4% could not locate the alert line. This findings is comparable with the studies done in Enugu in Nigeria which also showed lack of depth of knowledge.¹⁵⁰

4.3.3 To Evaluate the Utilization of Partograph for Monitoring Labour among Obstetrics Caregivers in Public Hospitals

The result shows that even though 66.8% of the respondents had good knowledge about partograph, only 62.3% had used the tool. 78.2% of the caregivers said they used it routinely, 1.3% sometimes and 8.8% occasionally. This is not in line with the study carried out in Northwest Ethiopia that revealed that 36.7%, 35.4% and 27.9% of them had used it routinely, sometimes and occasionally, respectively¹⁴⁹. Even though more than half of the obstetric caregivers used the partograph, its utilization was not consistent everywhere and every time. The tool was not routinely used. This findings is supported by different a study carried out in Benin. This could be related to knowledge gap¹⁵¹.

4.3.4 Association between Knowledge of Partograph and Utilization of Partograph

Utilization of partograph was marginally significant among obstetrics caregivers who have good knowledge about it. This was supported by another study as knowledge of partograph had a statistically significant association in utilizing the tool¹⁵².

This study also shows that there is a significant association between sex and utilization of partograph. This finding is consistent with a previous study done in Amhara region, Ethiopia¹³⁵.

4.3.5 Barriers and Facilitators of Partograph Use among Obstetrics Caregivers in Public Hospitals

This study revealed that 52.5% of the respondent said unavailability of partograph was the reason for not using partograph, 78.5% lack trained power, 54.4% said it is time consuming, 80.4% said it was because of shortage of staff and 27.8% said it is easier to use another monitoring tools. This is not in line with the study carried out in Southwest Ethiopia that shows that 37.5% said it was because of unavailability of partograph, 20.53% lacks training, 12.5 said it was time consuming, 14.28% shortage of staff and 7.58% said it was easier to use another monitoring tool¹⁵³.

4.3.6 Factors Influencing the Utilization of Partograph

In this study the health professionals who were trained on partograph were 5.43 less likely not to use partograph than those that did not take the training. A similar finding was observed in Rwanda, Nigeria-calabar, Ethiopia-Bale Zone and Ghana-kumasi.¹⁵⁴ this might be due to the program of the Ministry of Health-Ethiopia aimed to train skilled birth attendants' country wide in emergency Obstetric and newborn care¹⁵⁵. This findings also shows that knowledge is a key determinant factor of partograph utilization. Professional who are knowledgeable about partograph were 41.6 less likely not to use partograph than their counterpart. A similar study was observed in west shoa sone Ethiopia, Nigeria Enugu metropolis.¹⁵⁶ This enables them to understand what critical progress of labour will occur and decide on alternatives such as referral and caesarian section.

Chapter Five

Conclusion

5.1 Summary of Findings

The study assesses the level of knowledge and utilization pattern of partograph among obstetrics care providers in public hospitals in Ogun state. Majority of the respondents were female (83.8%) and were married (74%). More than half (59.9%) had a diploma as the highest level of education. A little below two third (61.3%) are Christians.

The highest proportions of our participants were community health extension workers (58.5%), and the least represented were diploma midwives (2.6%). A majority (85.9%) works in the Hospital and 50.6% have less than four years of clinical service. Care providers report that they had worked in various units including delivery rooms (19.1%), antenatal clinics (12.6%), outpatient clinics (23.4%), postnatal clinics (1.7%), family planning (1.9%) and others (41.3%). A little below half (48.9%) had been trained in obstetrics care. Among those trained in obstetrics care, 53.7% had training in delivery, 26.3% had training in newborn care, 19% had training in labour, and only 1% had training in BEMONC. More than half (57.5%) had been trained in partograph and most of the care providers had worked in labour and delivery rooms.

Majority had good knowledge of partograph (66.8%). Majority of the clinics had labour management protocol (71.6%) and had their partograph properly filled and attached to the chart (64.9%). Among the 261(62.3%) who reports that they have used partograph at least once, 78.2% routinely use it, 13% sometimes use it and 8.8% uses it occasionally.

The most common reason mentioned for non-routine utilization of partograph was shortage of staff (94.4%) followed by lack of trained manpower (87.6%), time consuming (71.2%), much details to fill (66.7%), little or no knowledge of partograph (60.8%), unavailability of partograph (57%) and the least of the reasons was using different monitoring tools (54.6%).

Reasons for factors promoting utilization, reduction of maternal death and mandatory use of partograph to improve quality of care during labour was most common reason reported for the utilization of partograph, followed by

A statistically significant association was found between profession, usage of partograph, ever trained to use partograph, sex, marital status and knowledge of partograph. The result of the findings shows that male respondent are 3.95 less likely to use partograph compared to their counterpart who are female at (0.088, 0.726 CI). Respondent that are single are 33.3 less likely not to use partograph compared to their counterpart who are widowed/separated at (0.007, 0.125 CI). There should be continuous education of obstetrics care providers on the benefit of routine utilization of partograph.

5.2 Conclusion

This study reveals that more than half of the obstetric care providers have been trained in the use of partograph as part of the in-service training. Majority had good knowledge on the use of partograph and routinely uses partograph. This study also shows that gender, profession, ever trained to use partograph, ever worked in labour room and knowledge of partograph were associated with utilization of partograph.

5.3 Recommendations

1. There should be continuous education of obstetrics care providers on the benefit of routine utilization of partograph.
2. Development of labour management protocol should be enforced in all clinics.
3. Further research can be done using qualitative approach to understand perspectives of obstetric care providers on the use of partograph.

5.4 Contribution to Knowledge

The overall objective of this research is to assess the utilisation of partograph among obstetric caregivers in public hospitals in Ogun State giving a better insight to the factors influencing and identifying barriers affecting the usage.

The first contribution of this research is capturing caregivers practice and evaluating the regularity of partograph usage among Obstetric Care givers in labour threatening situation leading to referrals. This study shows that despite fair knowledge of obstetric care givers in this study, significant percentage of participants poorly complete the partogram during labour, even though the partograph was very important, findings from this study shows poor utilisation as it is not used frequently by some respondents. The respondent's attitude towards it was generally positive as recordings are made when it is utilised.

This study has identified the problems being faced in the use of the partograph like, shortage of staff, Time consuming, lack of trained human power and unavailability of partograph amongst others. Findings also reveals that it reduces maternal and new born mortality and morbidity because it would guide healthcare workers in early identification of problems during labour, and hence assist in

institution of appropriate intervention that can lead to reduction in complications of pregnancy and childbirth.

5.5 Suggested Area for Further Research

1. From a practitioner stand point the challenges in partograph utilisation are shortage of staff, Time consuming, lack of trained human power and unavailability of partograph. These are challenges facing the care givers that could affect the maternal mortality and morbidity rate in Ogun state and Nigeria.

2. Hence there is need to conduct a qualitative research on Knowledge, utilization of Partograph and challenges facing the care givers that could affect the maternal mortality and morbidity rate in Ogun state and Nigeria.

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Appendix I

Informed Consent

Title of Study: Assessing Utilization of Partograph among Obstetrics Care Givers: A Cross-Sectional Study of State Hospitals Ogun State

Principal Investigator: Gbenro Mobolaji Abisola

Purpose of Study

My name is Gbenro Mobolaji Abisola, a master of public health student at the Faculty of public health, Lead City University, Ibadan. I am conducting a study on the Utilization of Partograph among Obstetrics Caregivers.

I am interested in understanding the level of knowledge and practices of partograph among obstetrics care givers, and also the level of acceptability of partograph use for monitoring labor among obstetrics caregivers in State public hospitals in Ogun State. I equally want to know the factors that influence the use of partograph among obstetrics caregivers in State public hospitals in Ogun State. I will greatly appreciate your participation in my study. Your insight will assist in the understanding reasons behind the use of Partograph.

Research Procedure

If you agree to be in this study, you will be asked to answer questions about yourself, your knowledge of partograph, various practices of partograph in the hospital, and your level of acceptability of partograph as well as questions about the factors that influence the use of partograph will be asked using a structured questionnaire. Answering the questionnaire will take about 20 minutes of your time.

Risks And Benefits

There are minimal or no risks if you take part in this study. There are also no incentives but the information you provide will help you improve your health and that of your loved ones.

Compensation

There is no monetary compensation or incentive for this study. Participation is voluntary.

Confidentiality

Like it is stated above, your comments will not be anonymous. Every effort will be made by the researcher to preserve your confidentiality. Only the research team will have access to the answered questionnaires. Confidentiality and privacy will be maintained by keeping all materials under lock and key. Your name will not be recorded.

Contact Information

If you have questions at any time about this study, as the result of participating in this study, you may contact

Gbenro Mobolaji Abisola

Public Health Department,

Lead City University, Toll Gate, Ibadan,

+2348055420579

mobolagbenro@gmail.com

Or Chairman LCU Institutional Review Board. Lead City University Ibadan Oyo

State through lcu.hrec@lcu.edu.ng

Voluntary Participation

Your participation in this study is voluntary. It is up to you to decide whether or not to take part in this study. If you decide to take part in this study, you will be asked to sign a consent form. After you sign the consent form, you are still free to withdraw at any time and without giving a reason. Withdrawing from this study will not affect the relationship you have, if any, with the researcher. If you withdraw from the study before data collection is completed, your data will be returned to you or destroyed.

Consent

I have read and understand the provided information and have had the opportunity to ask questions. I understand that my participation is voluntary and that I am free to withdraw at any time, without giving a reason and without cost. I understand that I will be given a copy of this consent form. I voluntarily agree to take part in this study.

Participant's signature/thumb print _____ Date _____

Participants Name: _____

Investigator's signature _____ Date _____

Investigator's Name: _____

Witness Name: (If necessary) _____

Signature or thumbprint: _____

Appendix II

Faculty of Basic Medical and Applied Sciences

Department of Public Health

Lead City University, Ibadan, Oyo State.

Questionnaire

Dear Respondent,

The researcher is a postgraduate student of the above-named University, researching **Assessing the Utilization of Partograph among Obstetrics Caregivers of Public Hospitals in Ogun State.**

In partial fulfillment of the requirements for the award of Masters in Public Health (MPH). The questionnaire is therefore designed to elicit information in relation to about variables being studied. All responses shall be highly appreciated, treated confidentially, and used strictly for academic purposes. Kindly fill them out as appropriate

Part A: Socio-demographic Characteristics

1. Sex of respondent: a.) Male () b.) Female ()
2. Age in years - - - - -
3. Religion: a.) Christian () b.) Muslim () c.) Others ()
4. Marital Status: a.) Single () b.) Married () c.) Widowed () d.) Separated () e.) Divorced ()
5. Educational Level a.) Diploma () b.) Degree () c.) MSc in Emergency Surgery and Obstetrics () d.) Specialist (Obstetrician and Gynecologist) ()
6. Cadre of obstetrics caregiver a.) CHEW () b.) CHO () c.) Midwife Nurse () d.) BSc Nurse () e.) Public Health Nurse () f.) Medical Doctor () g.) Emergency Surgery and Obstetrician () (h) Obstetrician and Gynecologist (Specialist)
7. Type of facility: a.) Health Centre () b.) General Hospital () c.) Specialist hospital
8. Experience in clinical service in years - - - - -

Part B: Section 1 Training/Work History of Obstetric Care Giver

9. Have you ever worked in labour/delivery room: a.) Yes () b.) No ()
10. Where have you regularly worked the most: a.) Ante-natal care () b.) Delivery room () c.) Post natal care () d.) Family planning () e.) Outpatient () f.) Others ()
11. Have you ever received training in obstetric care a.) Yes () b.) No ()
12. Which of the following obstetric care training did you receive: a.) Labour () b.) Delivery () c.) Newborn care () d.) Post delivery care () e.) Delivery surgical care () f.) Others ()
13. Were you trained to use partograph (inservice) or before service care a.) Yes () b.) No ()

Section 2: Knowledge of Partograph among Obstetric Caregivers

	Knowledge Items	Yes	No
	Have you had previous training on the utilisation of the Partograph?		
	Do you have understanding of at least one components of partograph?		
	Do you have the understanding of the function of the alert line?		
	Do you have an understanding of functions of Action Line?		
	Do you have any understanding on satisfactory labour progress?		

Section 3: Partograph Utilisation among Obstetric Care Givers

19. Is partograph usage acceptable in your health institution Yes () b. No ()
20. Do you use Partograph? a.) Yes () b. No ()
21. How often do you use partograph? a.) Routinely () b.) Some times ()
Occasionally ()
22. Does Health institution have labor management protocol?

Section 4: Practices of Partograph Use among Obstetrics Care Givers

Instruction: Kindly Tick Under Yes/No Based on your Choice of Response

	Partograph Practices Items	Yes	No
	At your last use of the partograph, was membrane intact recorded		
	Did you plot Fetal heart beat half hourly?		
	Did you plot cervical dilation 4 hourly?		
	Did you record the colour of liquor?		
	Did you plot uterine contraction correctly?		
	Did you record membrane ruptured?		
	Did you monitor maternal B/P at least 4 hourly?		
	Did you monitor maternal pulse at least every 30 minutes?		
	Did you plot correctly across alert line?		
	Did you plot correctly across action line?		

Section 5: Barriers and Facilitators of Partograph Use among Obstetric Care Givers

	(Components of the Partograph Plotted	Yes	No
	Using different monitoring tools		
	Do you believe partograph use is time consuming		
	Do you think partograph has too much details to fill		
	Do you feel Unavailability of partograph affects the usage		
	Do you believe that little or no knowledge of partograph contribute to poor utilization		
	Does Shortage of staff contribute to use of partograph in your facility		
	Does lack of trained human power affects use of partograph		
	Will regular usage of partograph reduce maternal death		
	Will regular usage of partograph reduce maternal morbidity		
	Do you believe that regularly using partograph will reduce new born death		
	Will regular usage of partograph reduce perinatal morbidity		
	Will use of partograph increase efficiency of maternity staff		
	Is partograph mandatory to improve quality of care in labour		

Appendix III

Bio-data

17, Adegboyega Street Asero Estate Abeokuta.
Phone 234-8055420579; 08061339934; • E-Mail:
Mobolagbenro@Gmail.Com

G b e n r o M o b o l a j i A b i s o l a

Objective

Seeking a challenging Position in an organization that will make good use of my Team spirit, Leadership qualities, and enterprising abilities and to further develop all these qualities in me.

Personal Data

- Marital status: Married
- Date of Birth: 13th April, 1979
- Gender: Female
- Place of Birth: Abeokuta
- State of Origin: Ogun State
- Nationality: Nigeria

Summary of Qualifications

2022 Lead City University, Ibadan
Ibadan

Master's Degree in public health (Inview)

2021 Neuropsychiatric hospital Aro
Abeokuta

Mental Health Provider

2018 Lead City University, Ibadan
Ibadan

Bachelor's Degree in Community Health

2011 American Heart Association
Lagos

Basic Life Support

2004 Institute of Occupational Nursing
Ibadan, Oyo State

Cerft. Occupational Nursing

2003 University Of Ibadan
Ibadan, Oyo State

Faculty of Public Health

Department of Health Promotion and Education

Advanced Diploma in Health Education

1999 School of Health Technology
Ijebu Ode

National Diploma in Community Health

Ogun State

1995 Egba Comprehensive High School
Asero, Abeokuta

Senior Secondary School Certificate

Languages

English and Yoruba

Professional Experience

2021 till date National Primary Health Care Dev.
Agency

State Technical Facilitator

Providing technical solution and strategies to Local governments Immunization Unit on immunization on Covid 19 vaccination.

2018 till Date World Health Organization (WHO)

State Technical Facilitator

Providing technical solution and strategies to Local governments Immunization Unit on immunization during

Out break response (OBR) and Immunization Plus Days (IPDS).

2012 Till Date Ogun State Ministry of Health. (Primary Health Care Board)

Community Health Officer

Monthly supervision on routine immunization exercise at all LGA levels in Ogun State. (Malaria Control, Immunization (NIPDS), LLIN distribution, HIV testing, Primary Eye Care (PEC) and Nutrition (MNCH)

2009-2012 Society For Family Health (SFH), Lagos.

HIV Counselling and Testing Counselor (HCT Volunteer)

2008-2009 Kids and Teens Concerns, Akure, Ondo State.

Program Officer (HCT)

Providing technical support to the Program coordinator, Networking & Collaborating with stakeholders and CSO partners

2004-2008 Center for Health Education and Development Communication (CHEDCOM). Lagos.

Project Coordinator

Supervising, coordinating and providing technical direction for projects activities, planning, developing, implementing and evaluating specified intervention.

Care and Support project Supervisor

Behavioral Change Communication Officer (BCC)

April- July 2004 Department of Health Promotion & Education, Faculty of Public Health, College of Medicine, University Of Ibadan.

Research Officer.

Interview of opinion leaders, using key informant interview methods

Focus group discussion on Mother-Child education with community women in Oshogbo, Osun State.

In-depth interview on print media contribution in HIV/AIDS risk taking behaviors in Ibadan.

Jan 2001-2002 Graces Medical. Oko Oba, Lagos

Staff Nurse

Proficiency

Good use of Microsoft office suite (Microsoft Word, Excel, PowerPoint, Outlook etc).

Trainings Attended

5 Days Orientation on Voluntary Counselling and Testing by CHEDCOM, a World bank/NACA assisted HIV/AIDS project. Lagos

2 Days Training of Trainers workshop for Non-Governmental Organization (NGOs) on managing HIV/AIDS in work place organized by AED lagos.

5 Days workshop on writing communication and resource mobilization skill organized by MSE Abuja.

Extracurricular Activities

Reading, Swimming and traveling.

References

Dr. Elijah Ogunsola
Executive Secretary
Ogun State Primary Health Care Board
Oke Mosan,
Abeokuta.
07036775698

Mrs. Olabisi Adetu
Director Finance and Accounts
Ogun State Primary Health Care Board
Oke Mosan
Abeokuta.
08034756661

Signature

Date

DO NOT COPY. LEAD CITY UNIVERSITY, NIGERIA

Appendix IV



MINISTRY OF HEALTH

DEPARTMENT OF HEALTH PLANNING, RESEARCH & STATISTICS
ABEOKUTA, OGUN STATE, NIGERIA.



HPRS/381/459

21/04/2022

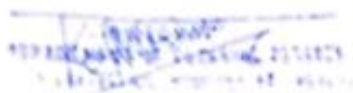
RE: 'UTILIZATION OF PARTOGRAPH AMONG OBSTETRICS CARE GIVERS: A CROSS-SECTIONAL STUDY OF PUBLIC HOSPITALS IN OGUN STATE'.

Notice of Research Exemption.

This is to inform you that the activities described in the submitted protocol/documents have been reviewed by the State Health Research Ethics Committee, the activities described there-in meet the criteria for exemption and is therefore approved as exempt from SHREC oversight.

The State code for Health Research Ethics requires you to comply with all institutional guidelines, rules and regulations and with the tenets of the Code. The HREC reserves the right to conduct compliance visit to your research site without previous notification.

Please note that, you are expected to share with us the findings of your research work via ogundhprs2019@gmail.com and olukayodekusimo@yahoo.com



Dr. Olukayode James Kusimo
Director, Health Planning, Research and Statistics
Secretary, State Research Ethics Committee

University Compliance Certification

This is to certify that this thesis by Mobolaji Abisola GBENRO with Matric No. LCU/PG/001545 in the Department of Public Health, Faculty of Basic Medical and Applied Sciences, Lead City University, Ibadan is in full compliance with the approved university format.

Signature

Date

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