
**ADDIS ABABA UNIVERSITY**

**COLLEGE OF HEALTH SCIENCES**

**SCHOOL OF PUBLIC HEALTH**

# Magnitude of partograph use and factors that affecting its utilization among obstetric caregivers in public health institutions of West Showa Zone, Oromia Regional state, Ethiopia2015.

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## ACRONYM/ABBREVIATION

| | |
|---|---|
| HEWS | HEALTH EXSTENTION WORKERS |
| MNH | MATERNAL AND NEONATAL HEALTH |
| MMR | MATERNAL MORTALITY RATE |
| NGO | NONE GOVERNMENT ORGANIZATION |
| PHCU | PRIMARY HEALTH CARE UNIT |
| UNICEF | UNITED NATION CHLDREN‟S FUND |
| WHO | WORLD HEALTH ORGANIZATION |

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**Abstract**

**Background:** Obstructed labor accounted for (8%) of maternal deaths, worldwide. Professional assisted delivery using a partograph during labour has paramount importance in identifying any deviation during labour, Even though; partograph use is influenced by different factors as obtained from the literatures, magnitude of partograph utilization and associated factors is not well determined in the study area.

**Objective:** The aim of this study was to assess the magnitude of partograph use and factors that affect its utilization among obstetric caregivers in public health institutions of West Showa Zone, Oromia Regional State, Ethiopia 2015.

**Methods:** A mixed method, quantitative and qualitative institution based cross-sectional study was conducted from December 2014 to February 2015, in randomly selected, two hospitals and five health centers from West Shoa Zone public health facilities. Two hundred sixty six obstetric care givers participated in the study. In-depth interview were conducted among 14 purposively selected health professionals while 44 client observations were made in all selected health facilities by observation checklist to see the actual utilization of partograph. Quantitative data were collected using a structured self-administered questionnaire. Binary logistic regressions analysis was carried out to assess associations of selected factors with the outcome variable. Significance level and association of variables was assessed using 95% confidence interval (CI) and (COR, AOR).

**Result:** A total of 259 (97.4%) health workers participated in the study. In this study, perceived prevalence from quantitative part of partograph use reveals 84.6%, but observation among 44 clients in the labour ward indicated that only five items out of fifteen parameters listed on the partograph were completed. A fourth of all professionals did not know the start time of partograph mapping and 35.9 had unfavorable attitude toward partograph use. In this study midwives (AOR=13 CI=2.6-66.2) Knowledge (AOR=7, CI= (2.8-21.8), availability of the tool (AOR=8.8 CI: 2.8-27.6), training **(**AOR=4, CI=0.9-21**.7)** and institution (hospitals) (AOR=0.09, CI: 0.03-0.26) were significantly associated with partograph utilization.

**Conclusion:** Though high proportion of obstetric care providers use partograph to follow the progress of labour, these observation findings indicated that continues monitoring of maternal and fetal condition was lacking. This will affect proper identification of the action line which will farther affect maternal and fetal outcome.

**Recommendation:** Both in-service and pre-service training on partograph use, continuous mentoring, supervision and staff motivation could improve the proper use of the tool.

**Key words:** Partograph**,** Knowledge, Use, Obstetric care givers, Public health institutions, Oromia Regional state,Ethiopia

## Introduction

### 1.1. Background

Globally, there were an estimated number of 289,000 maternal deaths in 2013. This means, every day, approximately 800 women die from avoidable causes related to pregnancy and childbirth (1).About 99% of maternal deaths occur in developing countries, while more than half of these deaths occur in sub-Saharan Africa, most could have been preventable. The ratio of maternal mortality in Ethiopia is also, 470/100,000 live births according to UN estimate April 2011(2).

The reduction of maternal and neonatal mortality has been globally recognized as one of the World Health Organization‟s Millennium Development Goals (MDGs), set in the year 2000. By improving maternal health and nutrition during pregnancy through effective antenatal care, ensuring safe and clean delivery, and providing immediate postnatal care, it is estimated we could prevent about 75% of neonatal deaths, more than 50% of deaths in the first year of life, and 99% of maternal deaths. Prolonged labor is a leading cause of death among mothers and newborns in the developing world. If the labour does not progress normally, a woman may experience serious complications such as obstructed labor, dehydration, exhaustion, or rupture of the uterus. Prolonged labor may also contribute to maternal infection or hemorrhage and to neonatal infection (3).

Interventions that can prevent complications from the major causes of death are known, and can be made available even in resource-poor settings. A systematically detecting and handling complication at early stage is part of guaranteeing quality service. Among these, partograph (Figure -1) is one of the strongest and cost-effective tools to prevent unnecessary delay and serve as frontrunner for obstetric caregivers (3, 4).

A partograph is a pre-printed paper that provides a visual display of recorded observations carried out on mother and foetus during labour. It is universally used as part of Safe Motherhood Initiative for improving labour management and reducing maternal and foetal morbidity and mortality. A study conducted in Jimma University Specialized Hospital 0n incidence, causes and outcome of obstructed labor revealed that regard to causes of obstructed labor, cephalo-pelvic disproportion (CPD) was the main cause in (67.6%) followed by malpresentation in (27.9%) of the cases which in turn leads to uterine rupture (45.1%) the commonest complication of obstructed labor. These complications were preventable if correctly followed with partograph (5, 7).

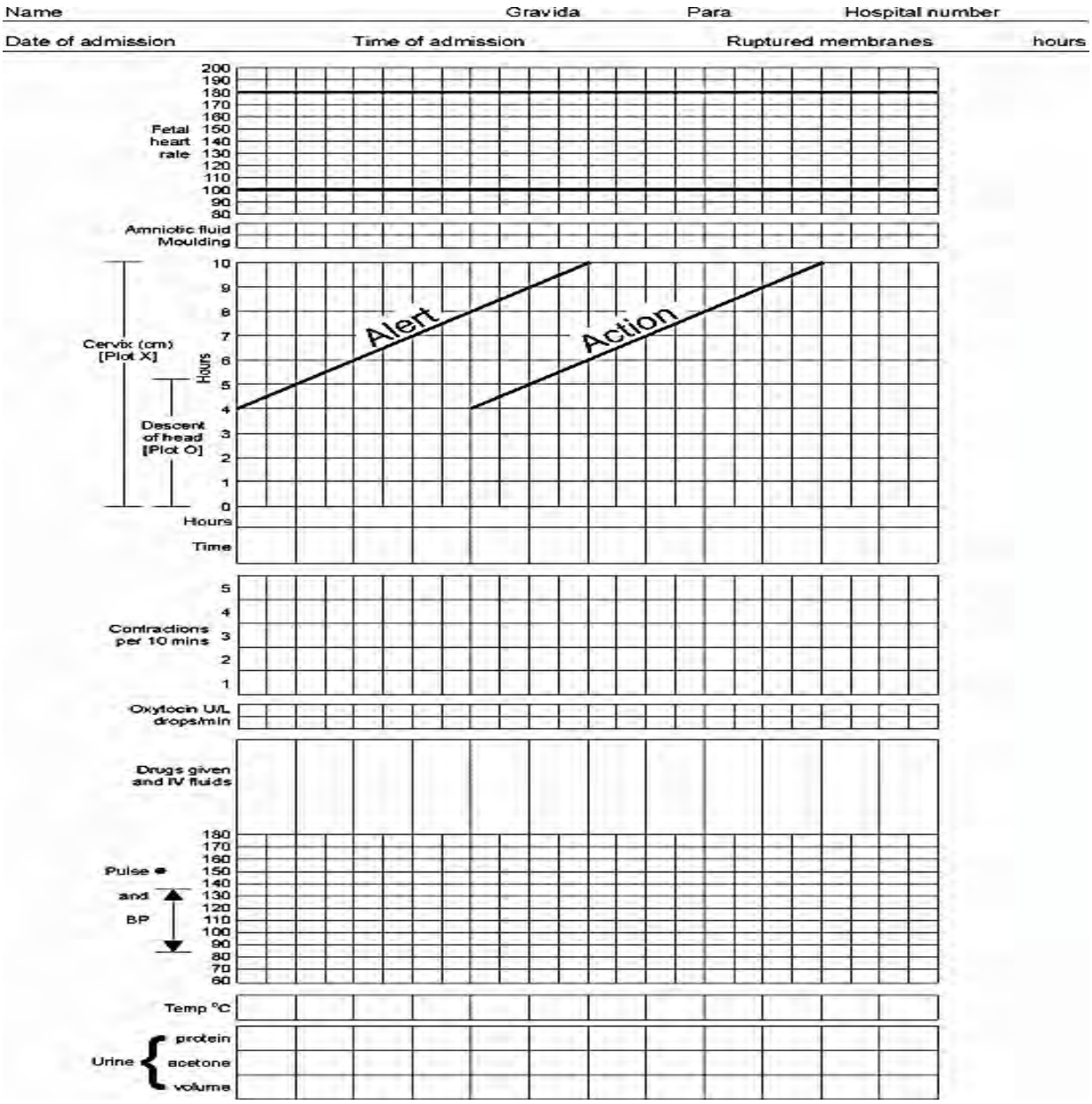


Figure-1:schematic presentation of Partograph

## 1.2. Statement of the problem

Aim of delivery care is to achieve: a healthy mother and baby with the least possible level of intervention, early detection and management of complications and timely referral. Maternal death is the main health problem of developing countries. The risk factors and prevalence of maternal death to the observed complication during operative deliveries has been determined with a retrospective study design in Ambo Hospital, West Shoa Zone, Oromia regional state and its peripheral areas for the year of 2006 by taking all operative delivery cases recorded in that year. Totally, 227 complications have been recorded, and the prevalence of maternal death is found to be 4.4% (44 deaths for every 1000 operative deliveries or complications) the risk factors, obstructed labor accounts for 27.5% and uterine rapture accounts for 15.8%. (8).

Therefore, strategies have to be invented to reduce maternal mortality by giving more attention to the most death causing risk factors in the area of these strategies the use of partograph is a vital tool for providers who need to be able to identify complications in childbirth in a timely manner and refer women to an appropriate facility for treatment. Obstructed labor accounted for (8%) of maternal deaths, worldwide (9). The reported incidence of obstructed labor expected to reach (20%) in developing countries (9). In Ethiopia obstructed or prolonged labor accounted for (13%) of maternal deaths (11). The women who experiences obstructed labor usually suffer from postpartum hemorrhage, uterine rupture, puerperal sepsis and obstetric fistula (11-13). Furthermore, it is highly associated with birth trauma, birth asphyxia, stillbirths, neonatal sepsis, and neonatal deaths (1). Thus; prevention of obstructed labor is a key intervention reduction of maternal and perinatal morbidity and mortality (9).

Interventions that can prevent mortality from the major causes of death are known, and can be made accessible even in resource-poor settings. Even though; partograph utilization is influenced by different factors as obtained from the literatures, magnitude of partograph utilization and associated factors is not well determined in the study area. This led to missed opportunities to recognize problems and address complications in appropriate manner. Moreover using the parameters written on partograph leads how to follow labour progress and

detect any deviation on time by the help of alert and action line to take action. Also reduces repeated unnecessary vaginal examination which may leads to sepsis, where obstructed labour (22%) and sepsis (12%) cause of maternal death in our country(9, 10).

## 1.3. Rationale of the study

In Ethiopia, only 15% of births were being attended by a skilled birth provider (Mini EDHS: 2014). Out of those who get professional attention there is no record about the proportion of women who had uncomplicated labour.

Especially in our country where the three delays are common (Delays in recognizing problems and deciding to seek care, delays in transportation to reach appropriate care and delays in receiving appropriate care at the health facility) and where sophisticated instruments to detect complication is not available in most of our institution, partograph use plays indispensable role that a skilled attendant should be able to identify problems, recognize complications early to perform essential basic interventions.

Like other part of the country, West Shoa zone maternal mortality indicates that the womens are not receiving adequate obstetric care. Even though in-service training on basic emergency obstetric and neonatal care which widely include partograth utilization given by different NGOs at all level there was no study shown that how many of them utilize it. Therefore, the aim of this study was to explore the extent of utilization of the partograph and factors which inhibit skilled birth attendants from consistent utilization of partograph in West Shoa Zone public health institutions and delivers valuable information about the problem which helps the concerned body to take an intervention on identified gap.

So results of the study help to inform the institutions participating in this study and other obstetric care providers, about factors that affect partograph use and ways of increasing it for improvement of maternal and fetal outcomes .The results also inform on areas where supervision strategies need to be enhanced as it relates to instruction on partograph, its purpose and correct use at labour follow-up and referral from health center to hospital. Ultimately the healthcare staff will be more equipped to effectively monitor the health of mother and baby.

# Literature Review

## 2.1. Partograph

The current partograph (pre-printed graphical paper) is designed to monitor not only the progress of labour, but also the condition of the mother and the fetus during labour. The partograph includes different variables (fetal heart rate, dilation of the cervix, contractions, and pulse rate of the mother) plotted on a graph. The plotted data allow the attending health-care practitioner to identify early deviations in the plotted parameters from the normal and make decisions regarding direct intervention or referral(11). The partogram has been heralded as one of the most important advances in modern obstetric care. WHO advocates its use as a necessary tool in the management of labour and recommends its universal use during labour(12).

Even though the partograph is a simple and inexpensive tool which prevents maternal deaths and complications due to obstructed or prolonged labour, it is not as widely implemented as it should be. Studies from Nigeria did report that only 25% to 33% of caregivers surveyed were using partograph for routine monitoring(13, 14). Care givers may resist using the tool if they have insufficient knowledge and do not fully understand why they have been asked to use the tool. Non-availability of preprinted partographs has also been reported as a cause for no utilization(14).

This study shows that midwives‟ knowledge about the partograph is a significant factor in its utilization in monitoring labor. Despite the good knowledge of the partograph, there was poor utilization in labor monitoring. Inadequate knowledge and utilization of this simple tool could be part of the reason for the high MMR in Nigeria and other developing countries. There was significant relationship between the years of experience of midwives and their use of the partograph (14).

A cross-sectional study conducted in the labour ward of an Academic Hospital in Johannesburg show the factors that were quoted by respondents as contributing to the inefficient use of partograph were: shortage of midwives (65%), which seemed to be a major concern that also limits an opportunity to attend in-service training as reflected by 38% of respondents who never attended in-service training; 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 midwives and ignorance. The outcome of a multi-center clinical trial undertaken in the Pretoria Academic Complex indicated that it was not possible

to have a midwife for each woman due to midwives shortage but a midwife was allocated to care for two to three women (15).

## 2.2. Benefit of partograph utilization

A stud done on risk factors and outcome of obstructed labour at a tertiary care Hospital revealed that a commonest cause of obstructed labour was cephalopelvic disproportion (44.8%) followed by mal-position (persistent occipito-posterior) (25.7%), mal presentation mostly shoulder presentation (10.5%) and breech presentation (9.5%) (16).

This indicates monitoring a woman in labour with partograph may have quality-of-care benefits that go beyond effective labor monitoring and management. The partograph on its own does not address all aspects of quality of care, but it can play an important role in labour management. For instance, the partograph can enhance communication among providers, increase interaction between providers and the laboring women, promote continuity of care across providers, and encourage teamwork (17).

In1987, global efforts have been focused on reducing maternal and neonatal mortality and morbidity associated with intrapartum care most especially in the developing countries. Many programs and tools have been developed to monitor and manage women in labour(18). Partograph consists of three components, maternal & fetal condition as well as progress of labour was designed to assist the various teams of staff involved in labour management and recognize abnormal labour course for appropriate corrective measures by the appropriately trained staff for the observed difference. The midwives manage all labour at the periphery or central unit as their primary role when the labour progress remain normal, but refer women whose labour progress cross the alert line for obstetric management of the slow labour progress.

A systematic review was done on eighteen health facility based maternal mortality studies conducted between 1980 and 2012 in Ethiopia, finding of this review for the year 2000-2012, (36%) of maternal death due to obstracted labour. This shows that the maternal mortality due to obstructed labor was unacceptably high in Ethiopia(19).Hence, the alert line and action line is a design to allow labour to be managed by the appropriate staff at the right time to ensure efficient correction of the anomalies so that prolonged labor is completely prevented and then normal delivery outcome will occur.

The reason why neglected labor complications occur is because of lack of the knowledge of when the staff supervising the labor should call for assistance or refer such

cases, particularly in the early part of the labor course (16).To assess labour management and to identify areas that need improvement, it may be easier for staff to conduct weekly or monthly reviews of partographs instead of other labor records. The tool can also be used for on-site training; staff can review case histories and the corresponding partographs, determine if appropriate care was given, and share lessons learned. While the partograph itself does not specifically address psychosocial issues, it can promote provider-client bonding; to use the tool correctly and consistently, providers must spend more time with clients than they otherwise might (17).

Yet, most parameters on the partograph are not monitored and most health care workers do not document their findings on the partograph after reviewing a woman in labor. Hence the progress of labor may not be closely monitored or labor monitoring may not translate into actions required when need arise (12).

Cross sectional retrospective study done on utilization of partograph during labour and birth outcomes at Jimma University revealed of 340 reviewed delivery records (80.6%) files had partograph attached. However; utilized in only 19 (6.9%) of the records and some of fetal, labour and maternal parameters were correctly documented in 10.5 %.(20).

## 2.3. Lack of training and experience

Skilled maternal care refers to maternity services (antenatal, delivery, and postnatal care) by a health professional with midwifery skill that can be provided at different levels (health centers or hospitals). In order to provide such skilled maternal care, we need to have an enabling environment and skilled providers (21).

Obstetric caregivers and supervisors must recognize that, while the partograph appears to be simple, it assumes a foundation of knowledge and skills in labour assessment, information gathering, and data documentation during labour. Every facility that serves labouring women must have clearly articulated protocols of care that harmonize with the partograph (14).

## 2.4. Attitude of obstetric care providers towards partograph

Health care providers‟ attitudes have the potential influence on both partograph application and the ability to tolerate an effective use of it at maternity units. Furthermore, the health workers perceived the partograph to be useful in helping them to detect abnormal labour. In spite of its practicality, a few health workers were of the opinion that the partograph

was a detailed tool and not practical to use (12). Among 165 midwives of Niger delta Nigeria, (92.7%) of the respondents agreed that, the use of partograph would increase efficiency of labor monitoring and (84.8%) of them were agreed the use of partograph is necessary to improve the quality of care (22).

## 2.5 Gap between knowledge and practice

An experimental study conducted in Ife Central Local Government Area, south west of Nigeria, which comprise a pre- and post-intervention measurements after a training programme on introduction and use of WHO partograph, obstructed and prolonged labour, showed significant reduction in the incidence of labour lasting >12 hrs from 18.6% to 3.7% and labour lasting >24 hours from 6.6% to0.4%, obstructed labour from 7.9% to 0.8%, caesarean section reduced from 6.6% to 4.5%. All laboring mothers which became obstructed during the partograph use were detected early at the stage of cephalopelvic disproportion were promptly referred. The ensuing delay before assenting to the referral led to the obstruction. Augmented labour increased from 9.9% to 13.2% (22).

This is in keeping with the finding that more labouring women were transferred in labour after introduction of partograph, due to early recognition of slow progress. It is therefore not surprising that complications such as uterine rupture, postpartum hemorrhage, genital sepsis, perinatal morbidity, neonatal asphyxia and maternal deaths were all significantly reduced after introduction of partograph. However there was an increase in operative vaginal delivery from 1.7% to 4.9%. This is also the result of earlier recognition and intervention in labour. If partograph were not used, these women might have ended up with prolonged second stage and probably obstructed labour (23).

A study conducted on effectiveness of individual teaching on knowledge regarding partograph among staff nurses working in maternity wards of selected hospitals at mangalore Cameroon revealed that highest percentage (65%) of the midwives had poor knowledge regarding partograph(24).

Studies in Kenya have reported a significant gap between knowledge and practice. One study from the University of Nairobi showed that while 88.2% of the 1057 evaluated patient records contained a partograph, only 23.8% of the forms had been used correctly. Lack of training and continuing education, exacerbated by limited resources represent serious barriers to effective partograph use (25).

A recent study conducted in Amhara Region revealed that majority (99%) of the participants knew what partograph is. Yet, only 21.8% (63) of them indicated that utilization of partograph could reduce both maternal and newborn mortality. With regard to knowledge about components of the partograph, nearly all (99%) participants mentioned at least one component of the partograph (26).

A published study in Addis Ababa,Ethiopia also revealed similar trends in knowledge and utilization of the partograph. The study indicated that 100%of the participants knew what the partograph is. However, knowledge about the function of both alert line and action line were poor. While only about fifty percent of the participants could correctly explain the function of alert line, considerable number of participants (82.6%) correctly explained about the function of action line. The result of this study has also shown that 96.6% of the participants could mention at least one components of the partograph. While more than half (52.3%) of the participants had fair knowledge, However, working in public health centers than hospital had shown significant association with good knowledge of the partograph, in this study the reported utilization rate of the partograph was relatively good, 57.4%. More participants from health centers than hospitals declared the use of the partograph. Trained participants were less likely to use the partograph than who did not(23) .

## 2.6. Theoretical framework of partograph utilization

In childbearing, women need a continuum of care to ensure the best possible health outcome for them and their newborns. Skilled management of labour using a partograph is at the center of the continuum of care. However, basic factors such as Knowledge, training, experience, and place of work and .Immediate factors like Attitude toward use of partopgraph andAvailability of pre-printed graph paper may affect partograph utilization. In addition, personal experiences with devotion to use clearly articulated protocols of care that harmonize with the partograph and availability of necessary equipment are critical

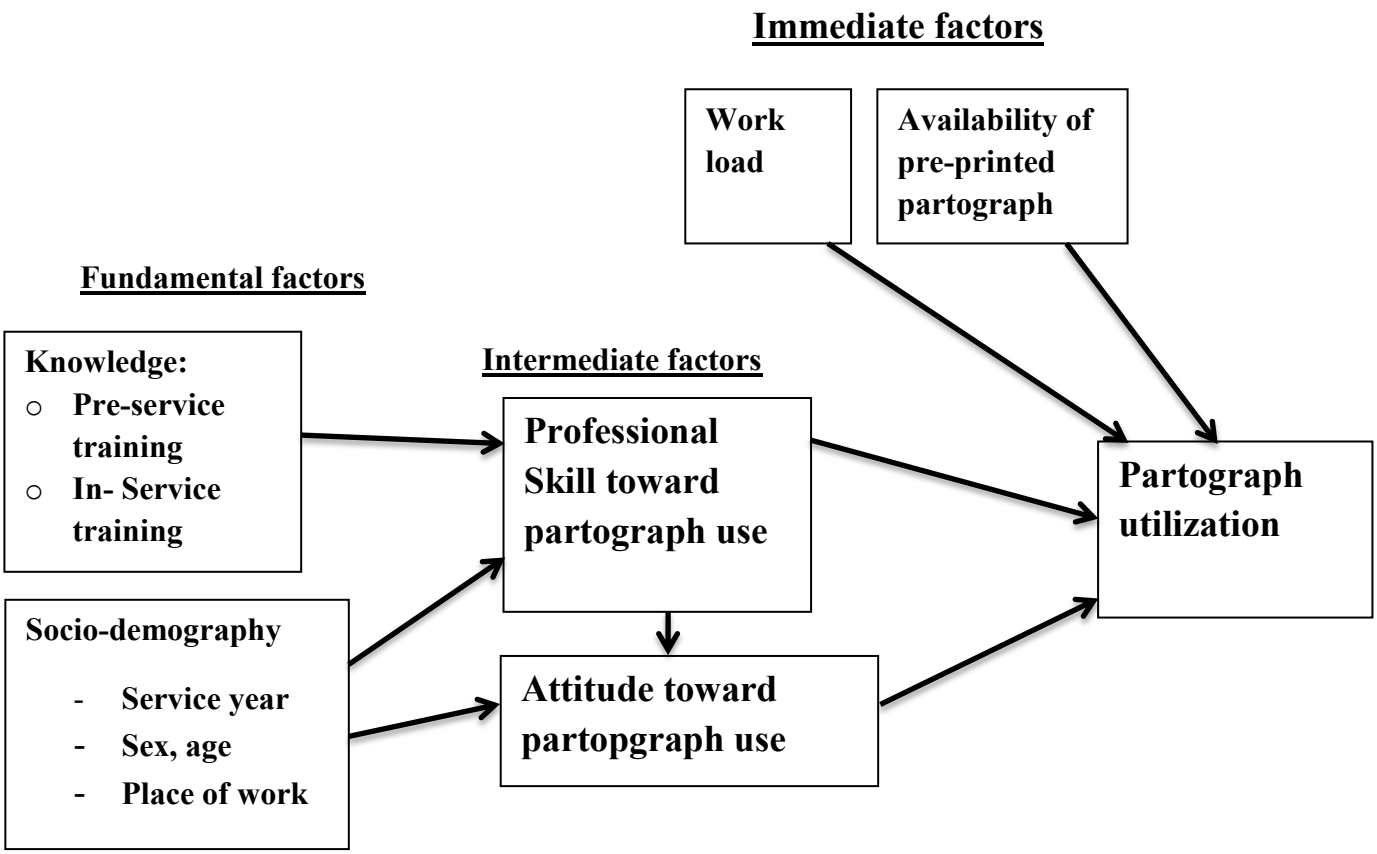


Figure.2. Conceptual framework of factors associated with partograph utilization among obstetric care providers in West Shoa Zone, Oromia Ethiopia; 2015

# Objective

## 3.1. General objective

To assess the magnitude of proper use of partograph and factors that affect its utilization among obstetric caregivers in public health institutions of West Showa Zone, Oromia Regional state, Ethiopia 2015.

## 3.2. Specific objectives:

- To identify the magnitude of use of partograph by obstetric staff in maternity units of public health institutions of West Showa Zone.
- To identify factors influencing the use of partograph in maternity units of public health institutions of West Showa Zone.
- To assess the actual practice of partograph use in maternity units of public health institutions of West Showa Zone.

# Methods and materials

## 4.1 Study Area

The study was conducted at Oromia regional state West Shoa Zone. It is located in West of Ethiopia. 114 km away from Addis Ababa covers 14,921.19 $km^2$ with total a population of 2, 3 81,077 out of these female constitute 1,191,147. West Shoa Zone has 19 woredas and 526 kebeles of which 486 are rural. With regard to health facility, there are one general and two primary hospitals with 89 health centers and 506 health posts. There were also 1 higher clinic, 36 medium clinics and 147 lower clinics in private sector. According to 2013 W/Shoa Health Bureau report, the number of health professionals working in public health facilities in the zone were, 4 specialists (internist, surgeon. Gynecologist and pediatrician), 36 medical doctors (general practitioners), 3 emergency obstetric, 84 health officers,52 BSc nurses,4BSc and 98 diploma midwives,402 diploma clinical nurses and 961HEWS

## 4.2 Study Design and Period

An Institution based cross-sectional study design was conducted. from December 2014 to March15/ 2015.

## 4.3 Population

### 4.3.1 Source population

The source populations were all health professional working in public health institution at West Shoa Zone Oromia regional state.

### 4.3.2 Study population

**S**tudy populations were heath care providers who were working in maternity unit of selected health facilities.

**Inclusion and exclusion criteria:**

Participants from each sampled health facility were enrolled to the study after getting their confirmation to work in delivery units either on regular basis, by rotation or at night duty. Those who never worked in delivery unit were excluded from the study.

## 4.4. Sample size and Sampling Techniques

A total number of health professional working in West Shoa public health institution was 683. According to studies conducted in to assess health professionals who had good knowledge and utilization of the partograph, , its prevalence was 57% and 29% respectively.

The required sample size of eligible participants for the study was determined by using a single population proportion formula**.**

$$n_0 = (Z^2 1\text{-}\alpha * P(1-P)/ d^2).$$

**Where,**

n= the desired sample size

p= the largest prevalence taken from the research done in Addis Ababa were (57%)

Z= is the standard normal score set at 1.96 (95% confidence interval)

d= is the margin of error to be tolerated (5%)

The sample size is calculated using the following formula:

| | | |
|---|---|---|
| In Amhara region | Partograph utilization P=29% | $n = \frac{(Z\alpha/2)^2\, p(1-p)}{d2} = \frac{(1.96)^2 \text{ X } (0.29\text{x}0.71)}{(0.05)^2} = \frac{0.79}{0.0025}$ =316 |
| In Addis Ababa | Knowledge of partograph, P= 57% | $n = \frac{(Z\alpha/2)^2\, p(1-p)}{d2} = \frac{(1.96)^2 \text{ X } (0.57\text{x}0.43)}{(0.05)^2} = \frac{0.9416}{0.0025}$ =376 |

Since, the source population was less than 10,000, correction factor will be used to estimate the final sample size required. Therefore, n= (n/1+ (n/N)) = 376/1+376/683=242.

Non-response rate 10% = 24+ 242

Total sample size was 266

## 4.5. Sampling procedure

**4.5.1. For quantitative;** In West Shoa, zone there are one general and two primary hospitals with 89 health centers. By using random sampling method two hospitals and five health centers selected. All obstetric care providers in the study area were considered as study participants and each participant were selected by using random sampling method

**4.5.2 For qualitative:** In-depth interview were conducted among purposely selected 14 key informants two from each facilities (managers or head nurses) those who do not participate in self-administered questionnaire were used to explore specific factors or reasons and difficulties that keep health workers from using partograph.

**4.5.3 Direct observation:** Direct observation were undergone by principal investigator among ten cases from each hospital and five cases from each health center whether they use the partograph in obstetric ward/unit, during avtive first stage of labour while they follow a labouring women and how they use and fill parameters on the chart, by using structured checklist which were developed from the partograph.

**4.5.4 Data collection**

The survey questionnaires are adopted from different literature developed for similar purposes by different authors, it was then modified to suit the local condition (22, 23). Five data collectors and one supervisor were trained for three days. The survey questionnaire were prepared first in English and then translated into Afaan Oromo, the local language and were pre-tested at Holeta H/center among 5% of the study subject & the necessary arrangements & corrections were made to standardize & ensure its validity.

## 4.6. Data quality assurance

Data collectors were trained on data collection tools to familiar with it and, the principal investigator and filled supervisor were rechecked completeness and clarity of the questionnaire immediately after interview at field level and during submission.

## 4.7. Data management and analysis

The collected questionnaires were checked visually for completeness then, coded and entered into Epi info version 3.5.1 statistical package. Double data entry was done on 10% of the questionnaires to check data entry errors, and exported to SPSS version 16.0 for analysis.

Descriptive analysis such as frequency, percentage, and mean, median were applied for different factors and outcomes. Univarate, multivariate and Binary logistic regressions analysis was carry out to assess the assumed associations of various factors with level of knowledge and utilization of the outcome variables after controlling confounding. Significance level and association of variables was tested by using 95% confidence interval (CI) and odds ratio

For qualitative data narrative analysis were used, based on the notes taken during the interviewee transcribed & translated to English then triangulated with the quantitative finding for discussion.

**The study variables:-**

Dependent variable: partograph utilization

**Independent variables**

Socio-demographic characteristics

Sex, Age, Professional skill and Service Year

Obstetric care provider factors: Knowledge, Attitude, Training on partograph utilization

Health facilities factors: Availability of partograph and Place of work

**Operational definitions:**

**Use of partograph**: utilization was measured based on the number of Obstetric care providers who have been using partograph routinely for all laboring mother

**Knowledgeable:** Obstetric care providers who score mean value and above to knowledge related questions.

**Attitudes:** Obstetric care providers who score mean value and above to attitude related questions. It was measured by using a 5-point Likert scale as individuals responding strongly agree for favourable attitude was given score of 5 and 1 for those who responded as strongly disagree, while the above scores was reversed for unfavourable attitude questions.

## 4.8 Dissemination of the result

The study result will be submitted to Addis Ababa University College of Health Sciences as a partial fulfillment of the requirements for Master‟s Degree in Public Health. It will also be disseminated to Oromia Regional Health Bureau, West Shewa Zone health office and to the organization or institution or individuals who have direct or indirect input to the project. All attempts will be made to present on different professional conferences and publishing on local/international journals.

## 4.9. Ethical considerations

Ethical clearance was sought, from, School of Public Health, College of Health Sciences, Addis Ababa University, Research and Ethics Committee. An official letter from the School of Public Health at Addis Ababa University was written to West Shoa Zone Health Office to obtain permission to carry out the study at the selected hospitals and health centers. Informed written consent was obtained from each study participants, before the interview. Any personal identification of the study participants was not being recorded during data collection. Confidentiality of information was secured by keeping the questionnaires and data in a secured place.

# 5. Results

## 5.1. Socio-demographic characteristics of study participants

Out of 266 study participants, 259 completed all the questioners correctly making a response rate of 97.4%. About 62.9% of obstetric care providers were females. The mean age of the respondents were 25.3 years (standard deviation (SD) = (4.092). Most (61%) of them were working at the five health center and the rest 101(39%) were working in the two hospitals.

Regarding their profession, 147 (56.7%) were nurses followed by midwives 83(32.1%) while the rest 29(11.2%) were and health officers General practitioner (Table1)

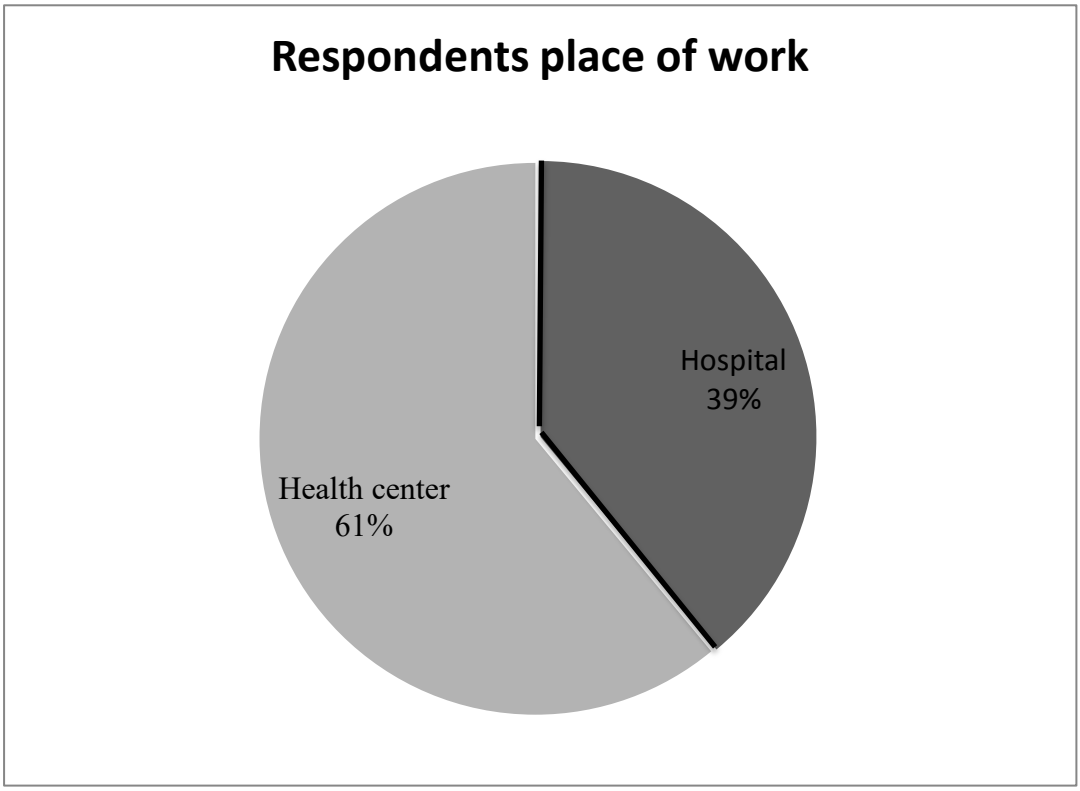


Figure 3: Work place of obstetric care providers in West Shoa Zone, Oromia Ethiopia; (N=259)

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**Table 1: Socio-demographic characteristics of obstetric care providers in West Shoa Zone, Oromia Ethiopia, 2015 (N=259)**

| Variable | Number | Percent |
|---|---|---|
| Sex | | |
| Male | 96 | 37.1 |
| Female | 163 | 62.9 |
| **Age category of the respondent** | | |
| 20-24 | 140 | 54.1 |
| 25-29 | 76 | 29.3 |
| 30-34 | 37 | 14.3 |
| 35-39 | 2 | 0.8 |
| >40 | 4 | 1.5 |
| **Respondent place of work** | | |
| Hospital | 101 | 39.0 |
| Heath Center | 158 | 61.0 |
| **profession of respondent** | | |
| General practitioner(MD) | 8 | 3.1 |
| Health officer | 21 | 8.1 |
| Nurse(BSc) | 70 | 27.0 |
| Nurse(Diploma) | 77 | 29.7 |
| Midwife(BSc) | 32 | 12.4 |
| Midwife(Diploma) | 51 | 19.7 |
| **Total service year** | | |
| <5 years | 201 | 77.6 |
| 5-10 years | 36 | 13.9 |
| >10 years | 22 | 8.5 |

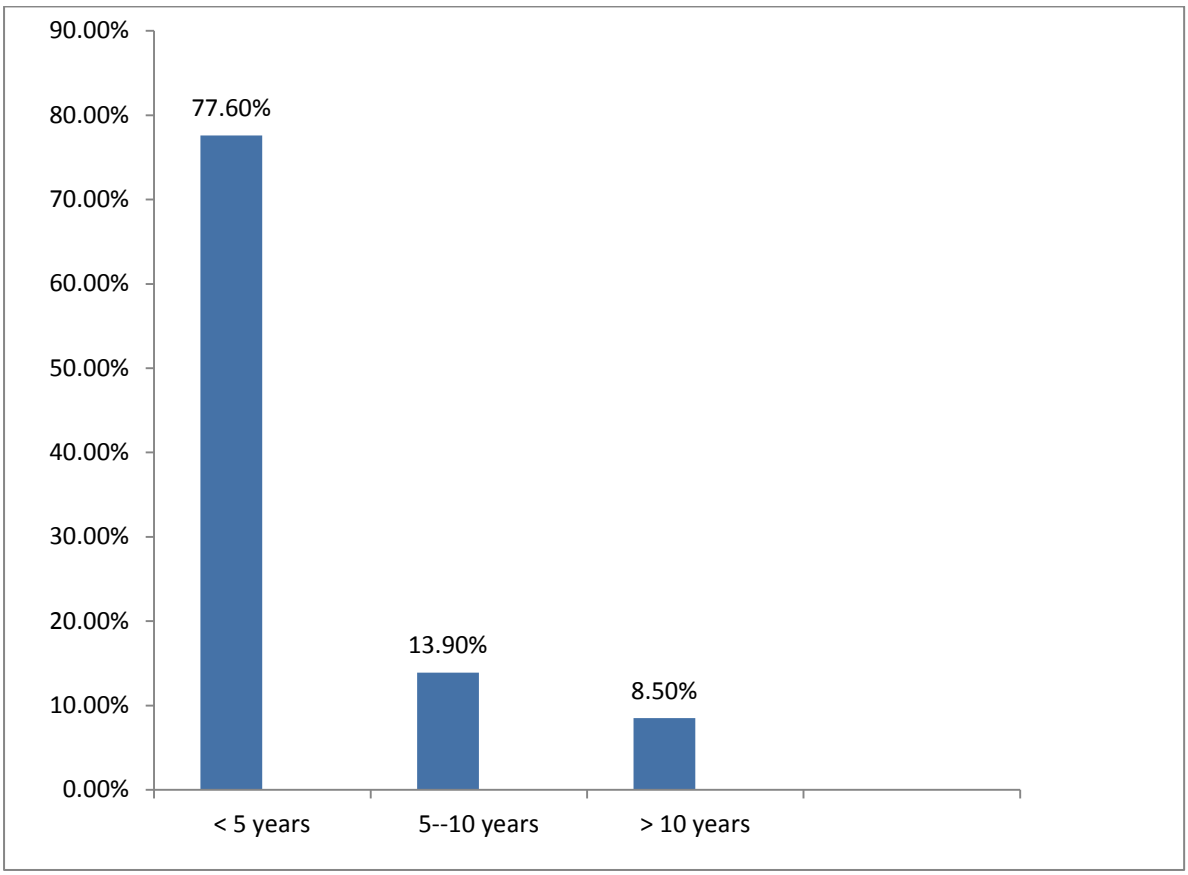


Figure 4: Service year of obstetric care providers in West Shoa Zone, Oromia Ethiopia; 2015. (N=259)

## 5.2. Partograph utilization

In this study, perceived prevalence from quantitative part of partograph use reveals 84.6%, whereas 40 (15.4%) use other format like plain paper and patient chart to follow labour progress. Practice of using partograph was also assessed among 44 clients by direct observation in the sampled health institutions when health care providers were attending women in labour. Only five out of fifteen parameters on the partograph (client name, fetal heart rate, uterine contraction, parity and initial cervical dilatation) were completed properly.

**Table .2:** Items recorded by obstetric health providers in partographs while attending labour in selected health institution of West Shoa Zone, Oromia Ethiopia, 2015 (n=44)

| Variable | Number | Percent |
|---|---|---|
| Client name | 44 | 100 |
| Yes | 0 | 0 |
| No | | |
| Card number | 21 | 47.7 |
| Yes | 23 | 52.3 |
| no | | |
| Date and time of addition | 35 | 79.5 |
| Yes | 9 | 20.5 |
| No | | |
| Time of rupture of membrane | 50 | 50 |
| Yes | 22 | 22 |
| No | | |
| Status of amniotic fluid | 19 | 43.2 |
| Yes | 25 | 56.8 |
| No | | |
| Descent of the head | 4 | 9.1 |
| Yes | 40 | 90.9 |
| No | | |
| Maternal temperature | 4 | 9.1 |
| Yes | 40 | 90.9 |
| No | | |
| Maternal pulse | 18 | 40.9 |
| Yes | 26 | 59.1 |
| No | | |
| Maternal blood pressure | 33 | 75 |
| Yes | 11 | 25 |
| No | | |
| Gravida/para | 44 | 100 |
| Yes | 0 | 0 |
| No | | |
| Cervical dilatation | 44 | 100 |
| Yes | | 0 |
| No | 0 | |
| Uterine contraction | 44 | |
| Yes | 0 | 100 |
| No | | 0 |
| Fetal heart rate | 44 | 100 |
| Yes | 0 | 0 |
| No | | |

Molding of fetal head and maternal urine output were never recorded in all client sheet other parameters also not monitored timely according to the standard.

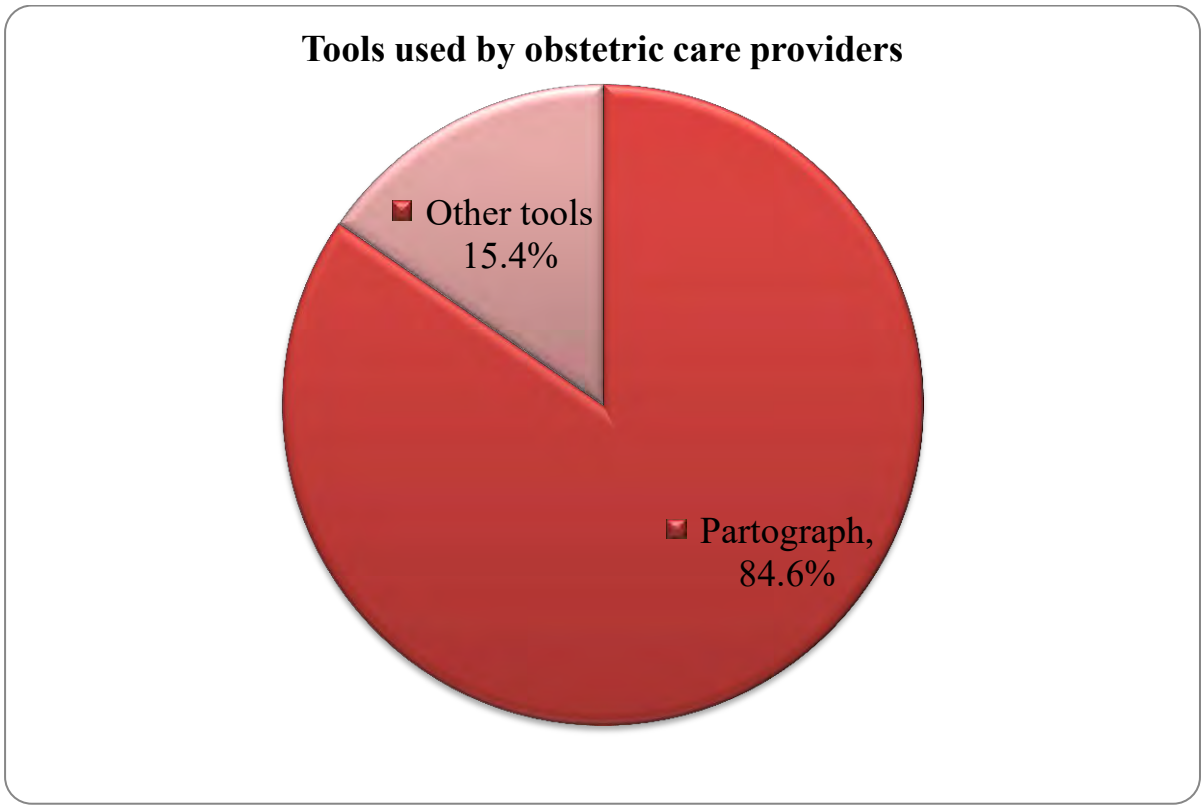


**Figure 5**: Tools used by obstetric care providers to follow the progress of labor in West Shoa Zone, Oromia Ethiopia; 2015.

## 5.3. Knowledge of obstetric care provider about partograph

Ninety one (35.1%) respondents know the exact definition of partograph while 168 (64.9%) respondent did not correctly knew what it is. But all of them 259 (100%) were heard about partograph. For the question that assess the correct time to start plotting on partograph; majority of them 194 (74.9%) responds to the exact answer according to WHO partograph tool i.e., to start plotting at 4cm cervical dilatation, 50 (19.3%) mentioned to start when the labour is diagnosed, 11(4.2%) indicated that plotting should start when the labouring woman reached 3cm cervical dilatation and very few respondents 4 (1.5%) replay when complication detected. Pertaining to use of partograph, most of the participant 243 (93.8%) mentioned that partograh should be plotted for all women in active first stage of labour while the rest 16(6.2%) said that it used only for multiparus and primigravida women.

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**Table 3: Knowledge of obstetric care givers about pantograph in West Shoa Zone, Oromia Ethiopia, 2015 (n=259)**

| Variable | Number | Percent |
|---|---|---|
| **Awareness about partograph?** | | |
| Yes | 259 | 100 |
| No | 0 | 0 |
| **Definition of partograph** | | |
| A tool to be used only in active phase of labour | 89 | 34.4 |
| A graphic method of recording first stage of labour | 79 | 30.5 |
| A salient feature of recording the whole process of labour | 91 | 35.1 |
| **Knowledge about the start time of plotting partograph** | | |
| when labour is diagnosed | 50 | 19.3 |
| At 4cm cervical dilatation | 194 | 74.9 |
| When complication is detected | 4 | 1.5 |
| At 3cm cervical dilatation | 11 | 4.2 |
| **Type of client that needs partograph use** | | |
| Primigravida | 8 | 3.1 |
| Multiparus | 8 | 3.1 |
| All women in active phase of labour | 243 | 93.8 |
| What would make a skilled attendant difficult to use the partograph when monitoring women in labour? | | |
| Lack of orientation on how to use the partograph being used at the facility | 64 | 24.7 |
| Availability of other methods of observation | 40 | 15.4 |
| Lack of commitment. | 101 | 39 |
| Lack of supervision | 86 | 33.2 |

## 5.4. Reasons for not using the partograph

According to this assessment out of 259 respondents the main factors that were reported by the midwives as influencing against effective use of the partograph include; lack of commitment 101 (39%), lack of supervision 86 (33.2%) followed by lack of orientation 64 (24.7%) how to use the partograph being used at their facilities.

In addition 40 (15.4%) absence of partograph charts in the labour ward, 100 (38.6%) respondent has difficulty to plot properly on the partogrph. On the other hand 72(27.8%) of the participants were not received on job training about partograph never used it.

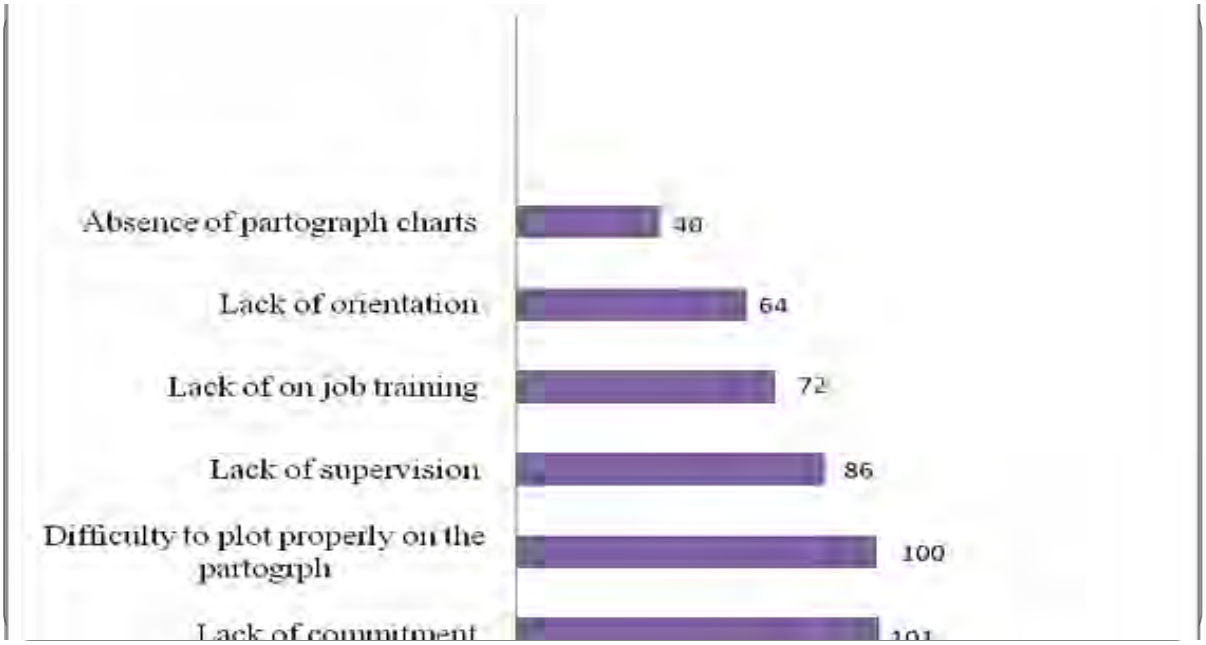


**Figure 6: Reasons for not using the partograph by obstetric care providers of public health institution in West Shoa Zone, Oromia Ethiopia; 2015**

In-depth interviews with four senior clinicians and six labour ward team leaders were also used to explore or gain insight into attitudes, beliefs, motives and behaviour of the health care providers. Almost all of them said that health care providers did not use partograph consistently because of different things like work load, lack of commitment, negligence and also some of them do not appreciate the importance of partograph. On the other hand they indicate skill incompetency and lack of supportive and facilitative supervision. Some of them also remember a bad scenario that women in labour cames to institution with her alive fetus

became intera-uterine death were happened due to lack of supervision. Using partograph consistently need a great commitment and strong supportive supervision and enough staff.

*"A 34 years male respondent said ''as far as the mother and fetal condition is normal, following with a partograph every 30 minutes is not practical and we forget that we need to document''*

Respondents from hospital stress on problems on the referral system. A woman in labour who referred from PHCU as emergency case often arrive at hospital without any documentation (partograph) to provide crucial information about the preceding hours or days of that labour. Another senior participant said that „*"I can just say it is negligence or lack of supervision. Sometimes there is enough time to observe and follow with a partograph according to the standard but we don't do it''.*

The qualitative study participants agreed that this tool is necessary at all levels to follow a laboring mother and control any deviation from normal. However, health workers surfaced some challenges they faced on the theoretically accepted level of cervical dilatation at 4cm. This s because if it started early at 4cm some clients may cross action line despite of any abnormal sign on both mother and fetus. So it may mislead or hurry the concerned person to take unnecessary intervention.

Participants agreed that health professionals need to know more about partograph training, experience, competence, management, and supervision. Senior clinicians have to be included in the training on paragraph promoting and appreciating staffs that were used the tool correctly and consistently needs encouragement.

## 5.5. Attitude of respondent toward partograph utilization

More than half 207 (79.9%) of the respondent strongly agree that the partograph is beneficial. 158(61%) respondents strongly agree that partogrph is favorable as it alerts obstetric care givers of any deviation from normal and 145(56%) agree that health care providers are able to identify problems and recognize complications early. Most132 (51%) of them agree and 119(45.9%) strongly agree that skilled birth attendant must use a partograph on every labouring mother. One hundred ninety (73.4%) strongly agree and 68(26.3%) agree that using partograph enables health care providers perform essential basic interventions

and make referrals to appropriate levels of care when necessary. This finding also less than study conducted in Nigeria Delta. (22).

The qualitative study is in line with this finding where participants mentioned that the partograph may have quality-of-care benefits that go beyond effective labor monitoring and management. The partograph on its own does not address all aspects of quality of care, but it can play an important role. For instance, the partograph can enhance communication among providers, increase interaction between providers and the laboring women, promote continuity of care across providers, and encourage teamwork. One of the participants indicated that

"*Practically some of us have difficulty in assessing and interpreting the finding to document on the graph*"

On the other hand 45(17.4%) strongly agree and 142(54.8%) agree that using partograph is not beneficial as the estimate it gives is exaggerated, also 45(17%) strongly agree and 139(53.7%) agree that using partograph misleads management as the progress of labour and the parthograph alert line are not aligned in most pregnant woman while the condition of both mother and fetus were in normal condition.

**Table 4: Shows frequency and percentage of Attitude of respondent associated with partograph Utilization of obstetric care givers in public health institution in west Showa Oromia Ethiopia; 2015**

| Attitude statement | Favorable | Unfavorable |
|---|---|---|
| To follow a women in labour using partograph is beneficial | 257(99.2%) | 2(0.8%) |
| The partograph is very favorable as it alert skilled birth attendant of any deviation from normal | 257(99.2%) | 2(0.8%) |
| By using a partograph, health care providers are able to identify problems, recognize complications early. | 218(84.2%) | 41(15.8%) |
| Skilled birth attendant must use a partograph on every labouring mother | 251(96.9%) | 8(3.1%) |
| Using partograph enables health care providers perform essential basic interventions and make referrals to appropriate levels of care when necessary | 258(99.6%) | 1(0.4%) |
| Using partograph is not beneficial as the estimate it gives is exaggerated | 187(72.2%) | 72(27.8.%) |
| Using partograph misleads management as the progress of labour and the parthograph alert line are not aligned in most pregnant woman | 184(71%) | 75(29%) |
| The 25$^{th}$ percentile =28 | Overall Mean 30 | |
| The 50$^{th}$ percentile =30 | SD 2.16 | |
| The 75$^{th}$ percentile =32 | | |

## 5.6. Factors associated with parthograph utilization by obstetric care providers

Logistic regression for factors associated with partograph utilization was performed. As shown in Table 4 below in bivarate logistic regression analysis respondent services year (<5yrs)(COR=7, CI=2.5-19.5), profession (Midwifery)(COR=11, CI=2.6-47.5), Work institutions/place (Hospital)(COR=4,CI=1.4-11.3), Availability of partograph (,COR=3.4, CI=1.59-7.4) and training (COR=5,CI=1.9-14.2) were significantly associated with partograph utilization.

In multivarate analysis Midwives(AOR=13, CI=2.6-66.2),those who have less service year(<5 years)(AOR=6,CI:1.8-19.9), Those obstetric care providers who received on job training on partograph were about 4 times more likely to utilize partograph than who haven't received on- job training (AOR=4 ,CI=0.9-21.7), those who had good knowledge about partograph utilization (AOR=7,CI=2.8-21.8), availability of the partograph in the facility (AOR=8.8 CI:2.8-27.6) and those who were working at hospitals (AOR=0.09, CI:0.03-0.26) were less likely to use partograph than their counter parts.

**Table 5: Factors associated with partograph utilization of obstetric care giver in public Health institution in west Showa Oromia Ethiopia; 2015**

| Variables | Partograph Utilization | | Crude OR (95%CI) | AOR (95%CI) |
|---|---|---|---|---|
| | Yes No (%) | No No (%) | | |
| **Services year** | | | | |
| <5year | 186(71.8) | 15 (5.8) | **7(2.5-19.5)** | **6(1.8-19.9)*** |
| 5-10 years | 19 (7.3) | 17(6.6) | 0.6(0.22-1.9) | 0.6(0.17-2.4) |
| >10year | 8(3.1) | 14(5.4) | 1.00 | 1.00 |
| **Profession** | | | | |
| Midwifery | 138((53.3) | 38(14.7) | **11(2.6-47.5)** | **13 (2.6-66.2)*** |
| Others** | 81(31.3) | 2(0.8) | 1.00 | 1.00 |
| **Work place** | | | | |
| Hospital | 70(27) | 31(12) | **4(1.4-11.3)** | **0.09(0.03-0.26)*** |
| PHCU | 149(57.5) | 9(3.5) | 1.00 | 1.00 |
| **Availability of partograph** | | | | |
| Yes | 192(74.1) | 27(10.4) | 3.4(1.59-7.4) | **8.8(2.8-27.6)*** |
| No | 27(10.4) | 13(5) | 1.00 | 1.00 |
| **Knowledge** | | | | |
| Yes | 185(71.4) | 31(12) | 18.(8.2-42.9) | **7(2.8-21.8)** |
| No | 34(13.1) | 9(3.5) | 1.00 | 1.00 |
| **Training** | | | | |
| Yes | 32(12.4) | 209(80.7) | 5(1.9-14.2) | **4 (0.9-21.7)** . |
| No | 8(3.1) | 10(3.9) | 1.00 | |

**Health officer, MD and Gynecologist

## 6. Discussion

In this study, 15.4% of obstetric care providers were not routinely upartograph during labor; less service year, working in health centers, availability of the tool, profession, Knowledge of obstetric care providers were significantly associated with partograph utilization.

From this study most health institution had partograph but was not used according to the standard. Even if the majority of health care providers who were knowledgeable about how to use this tool, the study revealed that there is gap between knowledge and skill on the use of a partograph as only five parameters out of 15 were completed properly. From the observed labour sheets, there were incomplete and poor recording of parameters on the partograph against the recommended standards of WHO partograph that reflect poor skills of birth attendances on the use of a partograph. This finding indicates the importance of having skilled health workers to take part in providing obstetric care.

However, this finding is higher than the study conducted in Amhara region (29%) (25) and Addis Ababa (57.3%) (26) as well as study conducted in South West Nigeria that only 25% to 33% of obstetric care givers use partogrph to monitor women in labour (27). This implies that even though the partograph is a simple and inexpensive tool which prevents maternal deaths and complications due to obstructed or prolonged labour, it is not as widely implemented as it should be. The differences between these findings might be due to trainings provided on partograph (28).

On the other hand, 190 (73.4%) respondents who score above mean on knowledge related questions had good knowledge about partograph were more utilized partograph than others. This implies that those health care providers who had knowledge about the importance of partograph were more utilized the tools than their counter part to prevent maternal and child mortality as a result of complicated or prolonged labour. The finding were higher than a study done in Cameroon (35%), (29), but a study conducted in Amara region (46.2%) (25) is a little bit higher. This discrepancy might be due to different in place of the study that may be explained with different strategies in partograph utilization, different level of knowledge and attitude of care providers towards partograph. The other possible explanation could be; different in data collection procedure and involvements of a single profession of midwifery

with a great chance to be trained on partograph than other profession which might in turn improves their knowledge and skill of its utilization. In contrast to this, relatively large numbers of study participants from different profession participated in our study.

In this study fetal heart rate, cervical dilation and uterine contraction were recorded completely only on the first visit (when a women in labour admitted to the ward for follow-up), from the information found on the partograph sheet which should be completely field but were not monitored according to the standard till the end. Time of rupture of membrane 50%, status of amniotic fluid 43.2%, and molding of fetal head (not recorded at all); this is revealing of poor monitoring of parameters on the partograph against standards. In the present study the reasons for not using partograph during labor were; using different monitoring tools other than partograph, lack of commitment, lack of supervision and lack of orientation on how to use the partograph being used at the institution. This finding is more or less consistent with the study in Nigeria and Addis Ababa (22,27).

Profession of obstetric care provider is one of the factors for partograph utilization. Partograph utilization was higher when the providers were midwives and nurses than general practitioner and health officers (AOR=18, 95% CI: 2.9-113) This is in line with the study done in nineteen Ethiopian hospitals(27). This might be due to the fact that, midwife obstetric care providers had more chance to be assigned in delivery wards and consequently received training on partograph that might in turn improves their knowledge and skill to utilize partograph than others. This concept is in agreement with the study done in Amhara region (26). In which midwives had better knowledge about partograph. Secondly, as obstetric care is their major duty; they might have better understanding about partograph utilization than others.

In this study work place i.e., working in Hospitals makes professionals less likely to use paertograph than those health caregiver working at heath center (AOR=0.09, CI=0.03-0.26) this may be because health workers at health centers use partograph as a guide to take action early since should have adequate evidence/justification even to refer the laboring women to higher health institution (Hospital) for better management. Furthermore, they had less client load and most of them received recent training as the majority has less service year. In contrast, health workers from Hospitals may be overconfident and neglect to monitor the laboring mother by using partograph tools since they think that incase if the mother got

complications they can easily manage the complication at their own premises without wasting time for transporting to other facilities

Health care providers service years was also associated with partograph utilization (AOR=6 (1.8-19.9) i.e. those health provider who service less than 5yrs were 6 times more likely to use partograph to monitor the progress of the labour. This may be due to the fresh knowledge those health provider have and also they may believe that they have to stick to procedures as per their school exposure. Another explanation may be avoiding risk becouse of their lack of experience. .

In addition to this availability of the partograpgh(AOR=8.8, CI:2.8-27.6) also associated with the tool utilization. Those health care providers who had partograph tools in their institution were 8.8 times more likely to use partograph than others. This implies that the availability of the tools is necessary for the utilization of the tools to monitor the progress of the labour.

Those obstetric care providers who received on job training on partograph were about 4 times more likely to utilize partograph than who haven‟t received on- job training (AOR=4 ,CI=0.9-21.7), Knowledge about partograph is also one of the influencing factors for partograph utilization. Obstetric care providers who were knowledgeable about partograph were about 10 times more likely to utilize partograph than those who were not knowledgeable (AOR=10.3, CI: 2.5-42). This is in line with the study done in Niger delta region of Nigeria (2, 23). This implies that, having knowledge about partograph is important to implement partograph during labor.

Reflection of respondent‟s attitude on analysis, 64.1% had favorable attitude above mean value whereas 35.9% had unfavorable attitude below mean toward partograph utilization. And their responds to each attitudinal questions revealed that majority of obstetric care providers agree on the importance of this tool But some of them 45 (17.4%) strongly agree and 142(54.8%) agree that using partograph is not beneficial as the estimate it gives is exaggerated, also 45(17%) strongly agree and 139(53.7%) agree that using partograph misleads management as the progress of labour and the parthograph alert line are not aligned in most pregnant woman may leads to unnecessary interventions while the condition of both mother and fetus were in normal condition.

## Conclusion

The study revealed that high proportion of obstetric care providers use partograph to follow the progress of labour, However it was not properly plotted in accordance with WHO partograph parameters. Despite the reported use of partograph, observation findings indicated that continues monitoring of maternal and fetal condition was lacking. Most of the partograph parameters plotted only once at admition and some providers put the partogaph paper in the client card after they complete the procedure(conducted delivery) only to fulfill the format for the sake of reporting this will then put women and their fetous in danger. In addition, the fact that professionals are not aware of the start time and application of partograph needs a serious attention visa a vis avoiding complications.

**Strength of the** Method triangulation using both qualitative and quantitative research methodology

**Limitation of the study**

Small sample size hampers the precion of some associations.

**Recommendations**

**To West Shoa Zonal health Bureau**

The WHO standards for recording in the partograph should be accessible to all institutions using the partograph to maintain consistency in its utilisation

**To stake holders**

- Monitoring and supervision of obstetric staff to ensure appropriate use of the partograph should been given highest priority by every hospital administrator and PHCU leader.
- A provision of on-job training on partograph is mandatory, to improve knowledge and attitude of obstetric care providers towards partograph utilization

**To obstetric care providers**

- The partograph should be used for every woman in labour and taken seriously by the care providers and it should be considered as a tool for diagnosing problems during the progress of labour. A great commitment also necessary.

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## Annex I: study information sheet

This sheet is to be read for the participants of the study.

Good morning/afternoon, my name is_____ and I am one of the data collectors for the study being conducted by Addis Ababa University, College of Health Sciences, School of Public Health. The objective of the study is toassess the magnitude of partograph use and factors that affect utilization of partograph among obstetric caregivers in public health institutions of West Showa Zone, Oromia Regional state, Ethiopia. You are selected to be a participant of this study if you give me consent after you have understood the following information sheet:

Title of the study: across sectional study onfactors that affect utilization of partograph among obstetric caregivers in public health institutions of West Shoa zone, Oromia Regional state, Ethiopia

Back ground of the study:A partograph is one of the valuable appropriate technologies in use globally for improved monitoring of labour progress, maternal and foetal wellbeing. It is an important tool for managing labour. The partograph is used to recognize any deviation during labours which causes of problems that lead to maternal morbidity and mortality.

Objective of the study: The aim of this study is to assess the magnitude of partograph use and factors that affect utilization of partograph among obstetric caregivers in public health institutions of West Showa Zone, Oromia Regional state, Ethiopia.

There is no benefit, payment or possible risk associated with participating in this study except the time spent for responding to the questionnaire. All information given by you will be kept confidential. Your participation is voluntary and you are not obligated to answer any question you do not willing to respond. If you feel any discomfort with the question, it is your right to drop it any time. If you have questions regarding this study, you can contact the principal investigator.

Address of the principal investigator:

Wakeshe Willi :Phone Number: 09111896260, E-mail: wakeshewilli@gmail.com

## Annex II. Consent form

I, the selected participant of the study have read the information sheet carefully and understood the purpose, benefit, and what is required from me and what is the consequences of the study on me if I take part in the study. I understood that all the information regarding me, like name and all answers given by me should not be transferred to the third party with out my permission. I also understand that I can decide whether or not to take part in the study or even withdraw from the study at any time.

The participant Sign_____

Questionnaire identification number _____

Name of the Interviewer _____Signature_____date _____

Name of the supervisor _____Signature _____date _____

## Annex III: English questionnaires

6. Questionnaire for assessment of partographs

Part I. Q 1—7 Socio-demographic characteristics of study participants in W/Shoa Zone Oromia Regional State 2014 (Select the most appropriate answer and tick one from the list below)

| S.No | Questions | Coding Categories |
|---|---|---|
| Q101 | Sex | 1. Male 2. Female |
| Q102 | Age in years( enter number) | _____years |
| Q103 | What is your current marital status? | 1. Never married(single)<br>2. Married<br>3. Divorced<br>4. Widowed<br>5. Other_____ |
| Q104 | Religion | 1. Orthodox 4. Catholic<br>2. Protestant<br>3. Muslim 5.Other, specify___ |
| Q105 | What is your profession | 1. Gynaecologist<br>2. General practitioner (MD)<br>3. . Health Officers (HO)<br>4. Nurse BSc.<br>5. Nurse Diploma<br>6. Midwives BSc<br>7. Midwives Diploma. |
| Q106 | Currently working in | 1. Hospital<br>2. Health center<br>3. Other, specify_____ |
| Q107 | Service year( enter number) | 4. _____years |

Part II. Participants‟ level of knowledge of the partograph, in W/Shoa Zone Oromia Regional State. Q201----207(Please tick one for each statement below to indicate your response)

| S.No | Questions | Coding Categories |
|---|---|---|
| Q201 | Have you heard about partograhp? | 1. Yes<br>2. No |
| Q202 | What is partograph?. (tick all correct answers) | 1. A tool to be used only in active phase of labour<br>2. A graphic methods of recording 1st stage of labour<br>3.A salient feature of recording the whole process of labour<br>4. Other specify |
| Q203 | During attending women in labour, when do you start plotting on the partograph? | 1. When labour s diagnosed<br>2. At 4cm cervical dilatation<br>3. When complication is detected<br>4. At 3cm cervical dilatation5. Other specify |
| Q204 | Did you learn about partograph while you are in college/university or Have you been received on-job training on partograph utilization? | 1. Yes<br>2. No |
| Q205 | Type of client that needs partograph use | 1. Primigravida<br>2. Multiparus<br>3. All women in active phase of labour<br>4. On eclamptic patient |

Part II. Attitude related questions

Please, tick one box to indicate to what extents do you agree or disagree with the following statement.

| S.No | Questions | Coding Categories |
|---|---|---|
| Q301 | To follow women in labour, using partograph is beneficial for the labouring women | 1. strongly agree<br>2. Agree<br>3. Uncertain<br>4. Disagree<br>5. Strongly dis agree |
| Q302 | The partograph is very favorable as it alert skilled birth attendant of any deviation from normal | 1. strongly agree<br>2. Agree<br>3. Uncertain<br>4. Disagree<br>5 Strongly dis agree |
| Q303 | By using a partograph, health care providers are able to identify problems, recognize complications early. | 1. Strongly agree<br>2. Agree<br>3. Uncertain<br>4.Disagree<br>5.Strongly dis agree |
| Q304 | Skilled birth attendant must use a partograph on every labouring mother | 1. strongly agree<br>2. Agree<br>3. Uncertain<br>4.Disagree<br>5.strongly dis agree |
| Q305 | Using partograph enables health care providers perform essential basic interventions and make referrals to appropriate levels of care when necessary. | 1. strongly agree<br>2. Agree<br>3. Uncertain<br>4.Disagree<br>5.strongly dis agree |
| Q306 | Using partograph is not beneficial as | 1. strongly agree |

| | | |
|---|---|---|
| | the estimate it gives is exaggerated | 2. Agree<br>3. Uncertain<br>4.Disagree<br>5.strongly dis agree |
| 307 | Using partograph misleads management as the progress of labour and the parthograph alert line are not aligned in most pregnant woman | 1. strongly agree<br>2. Agree<br>3. Uncertain<br>4.Disagree<br>5.strongly dis agree |

Part V Practice of recording of partograph. Q501-----506

| S.No | Questions | Coding Categories |
|---|---|---|
| Q501 | Are partograph always readily available at your facility?. | 1. Yes 2. No |
| Q502 | How many deliveries are conducted at your facilities on average per day | 1. _____ |
| Q503 | How many skilled birth attendants work in labour ward per shift | 1. _____ |
| Q504 | What would make a skilled attendant difficult to use the partograph when monitoring women in labour? | 1. Lack of orientation on how to use the partograph being used at the facility<br>2. Availability of other methods of observation<br>3. Lack of commitment<br>4. Lack of supervision |
| Q505 | Do you have any problem in using the partograph? | 1. Yes<br>2. No |

Part VI: Direct observation during skilled birth attendants follow a women in labour at ward (by using checklist) Observer please checks if the following are recorded on the check list. Q601--604

| S.No | Questions | Coding Categories | |
|---|---|---|---|
| Q601 | Are the following patient information recorded?- 501-1 Name | 1 Yes | 2. No |
| | 501-2 Gravida, para, | 1 Yes | 2. No |
| | 501-3 Hospital number, | 1 Ye | 2. No |
| | 501-4 Date and time of admission, | 1 Yes | 2. No |
| | 501-5 Time of membranes ruptured | 1 Yes | 2. No |
| Q602 | Are the following information about the fetus recorded | | |
| | 502-1 Fetal heart rate, | 1 Ye | 2. No |
| | 502-2 Amniotic fluid | 1 Yes | 2. No |
| | 502-3 Molding | 1 Yes | 2. No |
| Q603 | Are the following information about Lalour progress recorded:- | | |
| | 503-1 Cervical dilatation, | 1 Yes | 2. No |
| | 603-2 Contractions | 1 Yes | 2. No |
| | 603-3 Descent | 1 Yes | 2. No |
| Q604 | Are the following information about maternal conditions recoded | | |
| | 604-1 Temperature, | 1 Yes | 2. No |
| | 604-2 Pulse, | 1 Yes | 2. No |
| | 604-3 Blood pressure | 1 Yes | 2. No |
| | 604-4 Urine output | 1 Yes | 2. No |

Part VII Topic guide for in-depth interview

Q701-- Can we discuss about partograph use among care givers in general

- are health workers using it always
- if no why?
- can you remember an incident related to partograph use whether a bad or good one

.Q702. Is partograph use mandatory in your health institiute?

q703. Can we discuss about practical issuess in filling the partograph

- when do you start recording the partogrph?
- why

Q703-Can we discuss about the challenges in partograph use?

- The alert line and progress of labour
- Some professionals do not start recording until the progress of labour is more than 4 cm to avoid early alert line have you ever faced such a problem?
- Is it easy or difficult to use it
- Does it make you busy

Q704. Do you think that partograph is beneficial?

- Why?
- 704- What approaches could be considered to fill gaps in coverage and quality of partograph implementation?
- do you believe that it should be used by all midwive

Q705- What do you think should be done to ensure that midwifery providers and supervisors are competent in partograph use for monitoring and managing labor?

Declaration

I, the undersigned declare that this thesis is my own original work in partial fulfillment of the requirement for the degree of Masters of Public Health in Reproductive Health.

Name Wakeshe Willi.

Signature _____

Place of submission:  to School of Graduate Studies, Addis Ababa University Ethiopia.

Date of submission _____

This thesis work has been submitted for examination with my approval as university advisor.

Mitike Molla (PhD)

Signature _____

ASSURANCE OF PRINCIPAL INVESTIGATOR

The undersigned agrees to accept responsibility for the scientific ethical and technical Conduct of the research project and for provision of required progress reports as Per terms and conditions of the Research Publications Office in effect at the time of Grant is forwarded as the result of this application.

Name of the student: _____

Date._____ Signature _____

Approval of the primary Advisor

Name of the primary advisor:_____

Date._____ Signature _____