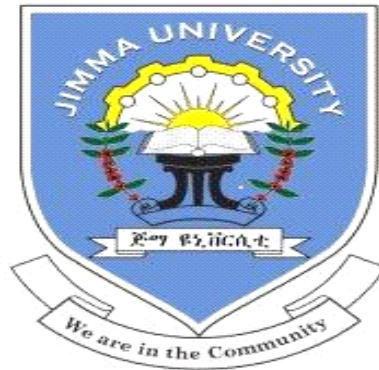


PARTOGRAPH UTILIZATION AND ASSOCIATED FACTOR AMONG
OBESTERIC CARE PROVIDERS IN ANYWA ZONE, GAMBELLA
REGION, WESTERN ETHIOPIA



BY:

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INSTITUTE OF HEALTH,
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Abstract

Background: Partograph is the graphic representation of labor and it is used to prevent prolonged labor with its complications. Health care providers assisted delivery using a partograph during labor has paramount importance in identifying any deviation during labor. Despite the recommendation, studies indicated that the partograph utilization among obstetric care providers is still low.

Objective: The aim of this study is to assess partograph utilization and associated factors among obstetrics care providers in public health institutions in Gambella Region, Anywa Zone western Ethiopia 2021.

Methods: An Institution based cross-sectional study design was conducted from August 1st to September one 2021 .A pre-tested and structured self-administered questionnaire was used to collect data .In Anywa Zone there are 1 primary hospital and 11 health centers. Primary hospital was selected and 6 health centers were selected by using simple random method. The collected data was checked manually for completeness then, coded entered into Epi data version 4.6.0.4, then exported to SPSS version 26 for analysis.

Result: 95.3% of study participants was utilized partograph routinely and Majority (83.5%) and (91%) had good knowledge and favorable attitude on partograph utilization respectively. The odds of currently working in the hospital were about 13 times higher to utilize the partograph than the one who were working in health centers ($P= 0.022$, AOR = 13.278, CI:1.462, 120.616). workload, lack of supervision and lack of trained human power, those are a variables that affected the utilization of partograph. Current working in, Receive any training on the use of partograph (P-Value .000, AOR 19.440, CI, 2.747,137.561) and favorable attitude(P-Value .002, AOR.10, CI, 2.384, 41.948) were variables significant associated with partograph utilization

Conclusion: The study revealed that higher proportion of obstetric care providers use partograph to follow the progress of labor. Majority of them has good knowledge about partograph utilization, almost all of them has favorable attitude about partograph utilization

Recommendation Further study will be done on the large simple size in order to make the representative the result with different method, so that the generalization is possible.

Evaluate the actual practices of health care providers if they have follow mothers in labor that possible use has feedback for the labor outcome

Key words: Partograph, Utilization, Gambella Region, Ethiopia

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Table of Contents

Contents	Page
Abstract.....	i
Acknowledgment.....	ii
List of Table.....	v
List of Figure.....	vi
List of Acronyms and Abbreviation.....	vii
CHAPTERS ONE: INTRODUCTION.....	1
1.1 Background.....	1
1.2 Statement of the problem.....	3
1.3 Significance of the study.....	5
CHAPTER TWO: LITERATURE REVIEW.....	6
2.1. Partograph utilization.....	6
2.2 Factors affecting utilization of partograph.....	6
2.2.1 Socio-demographic factors.....	6
2.2.2 Knowledge on utilization of the partograph.....	6
2.2.3. Attitude of obstetric care providers towards partograph utilization.....	7
2.2.4. Health facility related factors.....	7
2.2.4.1. Lack of resources.....	7
2.2.5. Conceptual framework of partograph utilization.....	9
CHAPTER THREE: OBJECTIVE.....	10
3.1 General objective.....	10
3.2 Specific objectives.....	10
CHAPTER FOUR: METHODS AND MATERIALS.....	11
4.1. Study area and Study period.....	11
4.2 Study Design.....	12
4.3 Population.....	12
4.3.1 Source population.....	12
4.3.2 Study population.....	12
4.4. Eligibility criteria.....	12
4.4 .1. Inclusion criteria.....	12
4.4.2. Exclusion criteria.....	12
4.5. Sampling Techniques.....	12
4.6. Sample size determination.....	12

4.7. The study variables	14
4.7.1 Dependent variable	14
4.7.2 Independent variable	14
4. 8. Operational definition and definition of terms	15
4.9. Data collection tools	16
4.10. Data Quality measures.	16
4.11. Pre-test of the questionnaire.....	16
4.12. Data management and analysis	16
4.13. Ethical consideration.....	17
4.14. Dissemination of the result	17
CHAPTER FIVE: RESULTS	18
5.1 Socio-demographic characteristics of study participants.....	18
5.2: Knowledge of obstetric care providers towards partograph utilization	19
5.3Attitude of obstetric care providers towards partograph utilization	21
5.4 Health facility related factor about Partograph utilization.....	23
5.5 Partograph utilization.....	24
5.6 Multivariate logistic regression.....	24
CHAPTER SIX: DISCUSSION	26
6.1 Discussion	26
CHAPTERS SEVEN: CONCLUSION AND RECOMMENDATION	29
7.1 Conclusion	29
7.2 Recommendation	29
7.3 Limitation of the study.....	30
References	31

List of Table

Table 1 : Socio-demographic characteristics of the study participants in Gambella region, Anywa zone Western Ethiopia. 2021. (n=212).....	18
Table.2 Knowledge of health care provider toward partograph utilization in Gambella region, Anywa zone Western Ethiopia. 2021. (n=212).....	20
Table 3: Attitude of obstetrics care provider toward partograph utilization in Gambella region, Anywa zone Western Ethiopia. 2021. (n=212).....	222
Table 4 : Health facility related factor toward partograph utilization in Gambella region, Anywa zone Western Ethiopia. 2021.(n=212).....	23
Table 5 : Factors associated with partograph utilization of bivariate and multivariable logistic regression analysis among obstetric care providers in public Health institution in Gambella region, Anywa zone Western Ethiopia. 2021. (n=212).	25

List of Figure

Figure,1 Conceptual framework.....	9
Figure.2 Administrative map of Anywa Zone.....	11
Figure.3 Schematic diagram of sampling	14
Figure.4 Knowledge of obstetric care providers towards partograph utilization in Gambella region, Anywa zone Western Ethiopia. 2021.....	19
Figure.5 Attitude of obstetric care providers towards partograph utilization in Gambella region, Anywa zone Western Ethiopia 2021.....	21
Figure.6 Partograph utilization among study participants in Gambella region, Anywa zone Western Ethiopia. 2021.....	24

List of Acronyms and Abbreviation

EDHS	Ethiopian Demographic and Health Survey
FMOH	Federal Ministry of Health
HSDPs	Health Sector Development Plans
HSTP	Health Sector Transformation Plan
MMR	Maternal Mortality Rate
NGO	Non-Government Organization
OL	Obstructed Labor
SNNPR	Southern Nation Nationalities and Peoples Region
WHO	World Health Organization

CHAPTERS ONE: INTRODUCTION

1.1 Background

Partograph is a graphical chart that facilitates monitor the interpartum period and serves as a reliable tool for the health workers in identifying the complications, Once the woman has true signs of labour, the health workers initiates the use of the partograph to record her findings [1].

The partograph was first discussed by Friedman in 1950s, and then it was developed and designed by Philpott in Harare in 1971 using the concept of warning signs and action line. In 1973, partograph became a tool to differentiate between normal and abnormal labor. Moreover, World Health Organization (WHO) launched partograph which is used to monitoring cervical dilatation, fetal head loss, uterine contractions, and fetal heart rate [2]

Globally over 20 million women become pregnant annually [3]. And around 585,000 maternal deaths occur as a result of complications related to pregnancy and Childbirths [3]. About 99 percent of maternal death occurs in developing countries of which 62 percent occurs in sub-Sahara Africa and 24 percent in South East Asia [4]. Early detection and timely intervention of obstetric complications are the most important activities to prevent maternal and perinatal mortality and morbidity [5].

According to 2015,WHO estimated that the rate of mortality was expected to be reduced to 353 deaths per 100,000 live births. The partograph is an important tool in managing labor by generating a pictorial overview of the labor progress, and maternal and foetal condition, on a single sheet of paper, which allows the obstetric caregivers the opportunity to preemptively identify and diagnose symptoms of abnormal labor. Therefore, its use is critical in preventing and reducing the incidence of both maternal and perinatal morbidity and mortality by reducing unnecessary interventions and labor complication [6].

Ethiopian demographic and health survey 2016 showed that the maternal mortality ratio was 471 deaths per 100,000 live births[7]. However, Eighty-five percent of deaths can be prevented with cost effective interventions like partograph during labor and delivery [8]. Understanding this will help police makers, stakeholders, program planners and obstetric care providers to improve the quality of intrapartum care.

World Health Organization (WHO) recommends the partograph to be used for monitoring all laboring mothers. It is still not broadly used in the developing world especially in Africa due to different factors such as lack of human resources, time pressure, stock-outs of partograph paper, inadequate monitoring of maternal and fetal key indicators [9].

According to the study conducted in India on assessment of knowledge regarding partograph among staff nurses Medical institute of Amritsar, in 2019 it revealed that 25% staff nurses had good knowledge [10]. The study conducted in Nigeria on assessment of utilization about partograph among obstetric caregivers concluded that 70.8% of obstetric care givers were well aware and had good knowledge of the partograph but far below expectation. [11].

This study is important for health care providers to improve interpartum care and maternal and fetal mortality and morbidity and also important if health care providers use partograph expectably can easily recognizes complications and obstructed labor and then can refer to other high level of facilities on time. Hence, this study provides information on the partograph utilization and its associated factors among obstetric care providers in Gambella Region, Anywa Zone, western Ethiopia.

1.2 Statement of the problem

Globally, about 295,000 women died during and following pregnancy and childbirth in 2017. Majority of these deaths (94%) occurred in low-resource settings, and most could have been prevented [12]. Ethiopian demographic and health survey 2016 showed that the maternal mortality ratio was 471 deaths per 100,000 live births [7].

However, 85% of deaths can be prevented with cost effective interventions like partograph during labor and delivery [2]. 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.

The top five causes of maternal mortality in Ethiopia; hypertension 10-12%, hemorrhage 25%, unsafe abortion 20-40%, infection and Obstructed Labor 10% and uterine rupture cover 9% of maternal deaths. Among those causes of maternal death obstructed labour, infection, uterine rupture and hemorrhage can be prevented by the fortunate utilization of partograph during labour and delivery [13].

According to the data done across African countries has shown that the utilization of partograph is poor despite preparing the tool that is simple and inexpensive for intra partum monitoring of labor [15]. The overall magnitude of routine utilization of partograph among participants to monitor labor for all laboring mothers was found to be only 217 (54.4%) even if using partograph is recommended for all laboring mothers by the WHO.

A study conducted in West Shoa Zone, Central Ethiopia, on Low Utilization of Partograph it shows that ,Most 259 (80.4%) of the respondents' defined partograph correctly. Most of the respondents 267(82.9%) used partograph during labor and 208 (64.6%) know the components of partograph. Similarly, 271 (84.2%) respondents knew alert and action lines. One hundred eighty-five (57.5%) respondents had good knowledge, while 137 (42.5%) of them had poor knowledge of partograph. More than half of the obstetric care providers (54%) had a favorable attitude [14].

Similarly, different studies in Ethiopia revealed low utilization of the partograph .That means the study conducted in Addis Ababa (57%) [2], in North Shoa (40.2%) [16], Amhara Region (29%) [15], this has led to complications of labor mothers, undiagnosed obstructed labor and babies born with birth asphyxia who later develop cerebral palsy. The lack of preprinted

partograph in the health institutions, being a general practitioner, poor knowledge and attitude towards partograph were reason for not using partograph during labor [17].

Therefore, Partograph use play important role that a health care professional should be able to identify problems, recognize complications early to perform essential basic interventions and referral. 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 there is no study shown that how many of them utilize it.

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[18]. Understanding about the partograph utilization and its associated factors, will help police makers, stakeholders, program planners and obstetric care providers to improve the quality of interpartum care. The overall purpose of this study is to asses'partograph utilization and its associated factors among obstetric care providers' selected in governmental public's health institution in Gambella Region, Anywa Zone western Ethiopia.

1.3 Significance of the study

In Ethiopia, only 28% of births were being attended by a skilled birth provider. Out of those who get professional attention there is no record about the proportion of women who had uncomplicated labor. 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 suitable instrument 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.

Partograph use play important role that a health care professional should be able to identify problems, recognize complications early to perform essential basic interventions and referral.

So results of this study help to inform the institutions participating in this study and other obstetric care providers, about factors that affect partograph use and also use has a base line for further study and help the concerns authority to take action on the identify gap and this may goes a long way to increase partograph use and help to reduce maternal and neonatal morbidity and mortality associated with labor, ultimately leading to the attainment of HSDPs and HSTP.

CHAPTER TWO: LITERATURE REVIEW

2.1. Partograph utilization

Cross-sectional study conducted in the Niger delta of Nigeria it showed that utilization of partograph was 98.8% [19]. Also the study conducted in Gambia 78% [20], South Africa 64% [21], in Kenya Coast general referral hospital, Mombasa 98% [22], in Ethiopia, Health care professionals' adherence to partograph use 21.5% [23], in Eastern zone of Tigray 83% [24], in Western Oromia 89.1% [25] in Wolaita Zone, SNNPR 71.1% [26] and in North Shoa Zone, Central Ethiopia 40.2% [16]. Were utilized partograph during labor.

2.2 Factors affecting utilization of partograph

2.2.1 Socio-demographic factors

A cross sectional study done in Nigeria it reveals that a significant relationship existed between midwives years of experience and its utilization [27]. According a cross sectional study which conducted in Wolaita Zone, SNNPR showed that profession was significantly associated with partograph utilization. It reports that those who were midwives by profession were about Eight times more likely to have a consistent utilization of the partograph than general practitioners [26].

2.2.2 Knowledge on utilization of the partograph

A cross sectional study done in Nigeria showed that 22.2% factors affecting utilization of the partograph was lack of knowledge in the use of the partograph, and also reported that significant relationship existed between knowledge of the partograph and its utilization [14]. 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 65% of the midwives had poor knowledge of partograph utilization [28].

Study conducted in Addis Ababa on assessment of knowledge and utilization of partograph revealed that 30.66 were lack of knowledge of the partograph [2].

A cross sectional study which conducted in North Shoa Zone, Central Ethiopia shows that knowledge of obstetric care providers towards partograph were significantly associated with partograph utilization, and also reported that 70.5% obstetric care providers were knowledgeable about partograph [16].

Study conducted in Western Oromia, Ethiopia, it showed that, 83.7% had satisfactory and 16.3% had unsatisfactory knowledge of partograph utilization [25].

2.2.3. Attitude of obstetric care providers towards partograph utilization

Study conducted in Cameroon Bamenda Health District it reveal that 81 % were favorable attitude towards the utilization of the partograph and believe utilization of the partograph would help making timely decision and facilitate early referral to better health care. [27].

According to the study done in Niger delta, among 165 midwives of, 92.7 percent of the respondents agreed that, the use of partograph would increase efficiency of labor monitoring and 84.8% percent of them were agreed the use of partograph is necessary to improve the quality of care [29].

A cross sectional study which conducted in hospitals of Western Oromia, Ethiopia, it showed that, 92.6% had favorable attitude while the remaining 7.4% had unfavorable attitude towards partograph utilization and it also reported that, 91.1% agreed that using partograph reduces maternal morbidity and mortality while 98.5% agreed that using partograph enables health care providers to recognize obstetric complication early [25].

Partograph utilization was significantly higher among obstetric care providers who had a favorable attitude as compared to those who had the unfavorable 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 [16]. Study conducted in West Shoa Zone, Central Ethiopia it reveal that 54% obstetric care providers had a favorable attitude towards partograph utilization [15].

2.2.4. Health facility related factors

2.2.4.1. Lack of resources

According to study done in Cameroon Bamenda Health District, North-West Region, showed that 42.9 percent partograph were available in the health facilities and 56.7 percent of the participants said unavailability of the partograph meant that they could not use it to monitor women in labor [27]. According to the study done in Nigeria showed that factors affecting utilization of the partograph were: -non-availability of the partograph 30.3 percent, shortage of staff 19.4% [30].

According to Study done on assessment of knowledge and utilization of partograph in Addis Ababa show that reasons for not routinely using it were cited as time consuming 28.23 percent and lack of adequate number of personnel 6 percent [2]. The number of nurses who were working per shift varied from one hospital to another. For those who were in a ratio of one health care providers to five mothers were 36.4%, those with a ratio of one health care providers to more than five mothers in labor were represented by 47.3% while the remaining 16.4%, represented cases where the ratio of to health care providers mothers in labor was one nurse to two mothers in labor [31].

A cross-sectional study conducted in the labour ward of an Academic Hospital in Johannesburg showed that 65% factors that were quoted by respondents as contributing to the inefficient use of partograph were shortage of midwives [32].

2.2.4.2. Lack of supportive supervision

Study in the Bamenda Health District, North-West Region, Cameroon reported that there was a significant relationship between supervision by the service heads and the use of the partograph, about 45.2% of the health workers admitted to having regular supervision from their service heads [28].

According to the study conducted in Uganda it reported that the health workers lacked follow-up and supervision. This resulted in poor monitoring of maternal–fetal condition and there were high perinatal deaths. One of the eight centers which participated in the study in Uganda correctly used the partograph. This center received more supportive technical supervision than any other center [33].

According to cross sectional study which conducted in Wolaita Zone, SNNPR Ethiopia shows out of 269 respondents the main factors that were reported by obstetric care givers as reasons for not utilizing partograph around 10.8% was lack of supervision [26]. And also study conducted in West Shoa Zone, Central Ethiopia it reveal that 53.4% were lack supervision [15].

2.2.5. Conceptual framework of partograph utilization

In childbearing, women need a continuum of care to ensure the best possible health outcome for them and their newborns. Management of labor using a partograph is the center of the continuum of care. However, basic factors such as Knowledge, training, experience, profession and place of work and factors like Attitude toward use of partograph and unavailability of pre-printed graph paper may affect partograph utilization.

Conceptual Framework

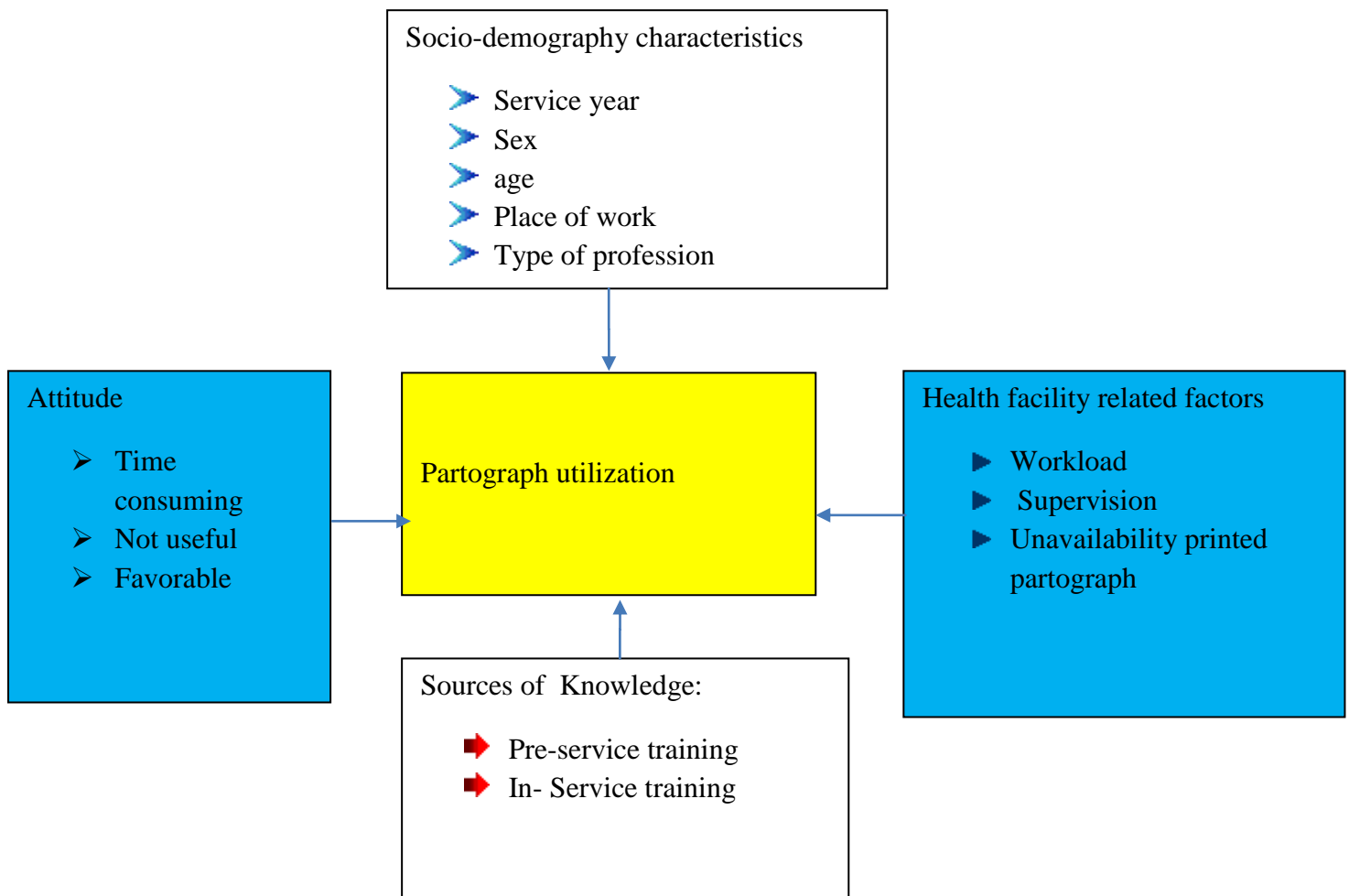


Figure.1. Conceptual framework of factors associated with partograph utilization among obstetric care providers in GambellaRegion, Anywa Zone Western Ethiopia (Based on different literature review). Adapted and modified from Donabedian (2003).

CHAPTER THREE: OBJECTIVE

3.1 General objective

- ❖ To assess partograph utilization and associated factors among obstetrics care providers in public health institutions in Gambella Region, Anywa Zone western Ethiopia 2021.

3.2 Specific objectives

- ❖ To determine the partograph utilization among obstetric care providers in maternity units of selected public health institutions of Anywa Zone western Ethiopia 2021
- ❖ To identify factors associated with partograph utilization among obstetric care providers in selected maternity units of public health institutions of Anywa Zone western Ethiopia 2021

CHAPTER FOUR: METHODS AND MATERIALS

4.1. Study area and Study period

This study was conducted in Gambella regional state particularly in Anywa zone. It is located in West of Ethiopia. It is about 766 Km far away from Addis Ababa the capital city of Ethiopia. The main nationalities represented in the locality of the regional are, Anywa, Nuer, Majang, Opuo and Komo. It has 14 Wareda and 3 Zone with total populations 483098. From the 3 Zone, Anywa Zone has one of from those, with total population 95737 and 5 woredas and 83 kebeles.

With regard to health facility, there are one primary hospital and 11 health centers and two non-governmental health centers and 83 health posts. According to 2013 zonal Health Bureau report, the number of health professionals working in public health facilities in the zone was 15 medical doctor (general practitioners), 1 emergency surgeon, 31 health officers, 35 BSc nurses, 12 BSc midwives and 30 diploma midwives, 290 diploma clinical nurses and total 429 health care providers without including Lab, Pharmacy and Anesthesia. The study period was from August to September one 2021.

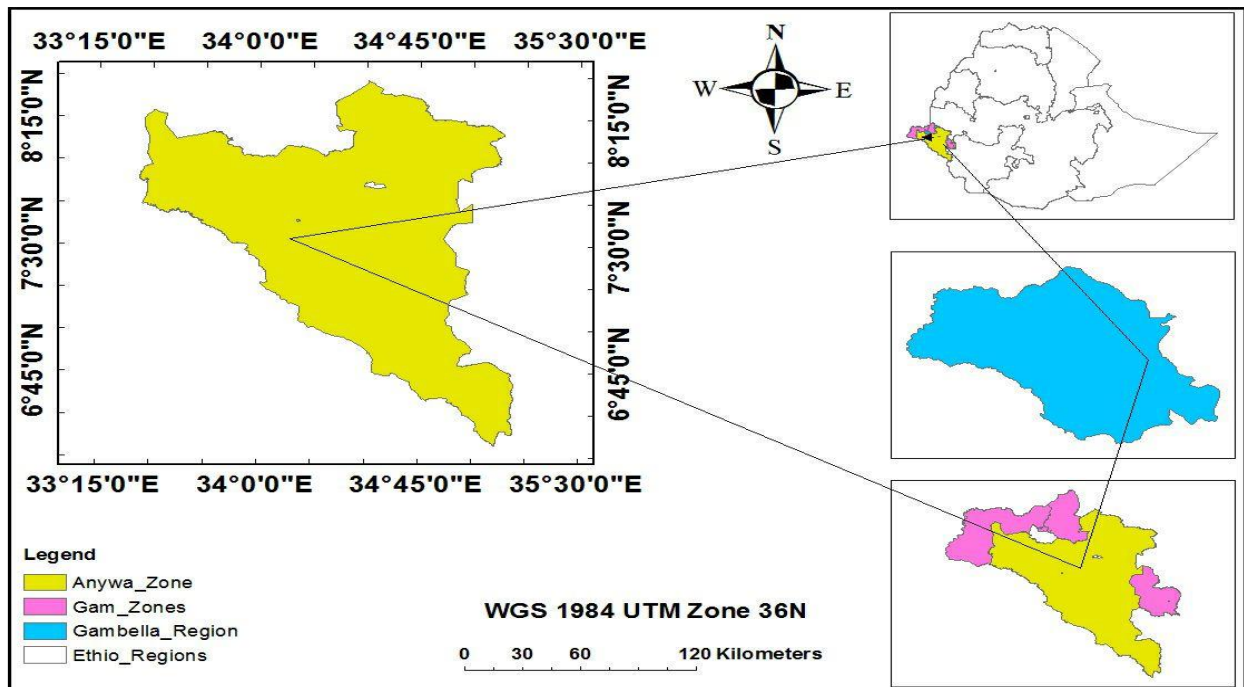


Figure 2: Administrative map of Anywa Zone

4.2 Study Design.

An Institution based cross-sectional study design was used from August 1st to September one 2021.

4.3 Population

4.3.1 Source population

Health care providers who were working in public health institution of Gambella region Anywa Zone western Ethiopia.

4.3.2 Study population

Health care providers who are working in maternity unit of selected health facilities.

4.4. Eligibility criteria

4.4 .1. Inclusion criteria

All Health care providers (midwives, nurses, general practitioners, emergency surgeon and health officers who are working in maternity ward of selected governmental health institutions) in Gambella Region, Anywa Zone western Ethiopia is included in the study

4.4.2. Exclusion criteria

Health care providers who have severely ill, mental disorder excluded in the study.

4.5. Sampling Techniques

A total number of health professional working in Gambella, Anywa Zone western Ethiopia public health institution is 429. It has one primary hospital and 11 health centers, primary hospital were selected and from 11 health centers, 6 health centers were selected by simple random sampling techniques (lottery method). All obstetric care providers who are given delivery service by regular time, rotation and duty time in the study area were considered as study participants.

4.6. Sample size determination

The required sample size was determined by using single population proportion formula. According to studies conducted to assess partograph utilization and factors that affect its utilization among obstetric caregivers in public health institutions Wolaita Zone SNNPR, Ethiopia Proportion was (71.1%) [26].

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

$$n_0 = \frac{(Z_{1-\alpha/2})^2 \cdot P \cdot (1-P)}{d^2}$$

Where:

n= the desired sample size

p= the largest prevalence taken from the research done in wolaita Zone SNNPR, Ethiopia was (71.1%)

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

$n = \frac{(Z_{\alpha/2})^2 \cdot p \cdot (1-p)}{d^2} = \frac{(1.96)^2 \cdot X \cdot (0.71 \times 0.29)}{(0.05)^2} = \frac{0.79}{0.0025}$ <p>=316</p>
--

Since, the source population was less than 10,000, correction formula was used to estimate the final sample size required. Therefore, $n = \frac{n_0}{1 + (n_0/N)} = \frac{316}{1 + 316/429} = 182$ non-response rate 10% = 32+ 182, then Total sample size was 214.

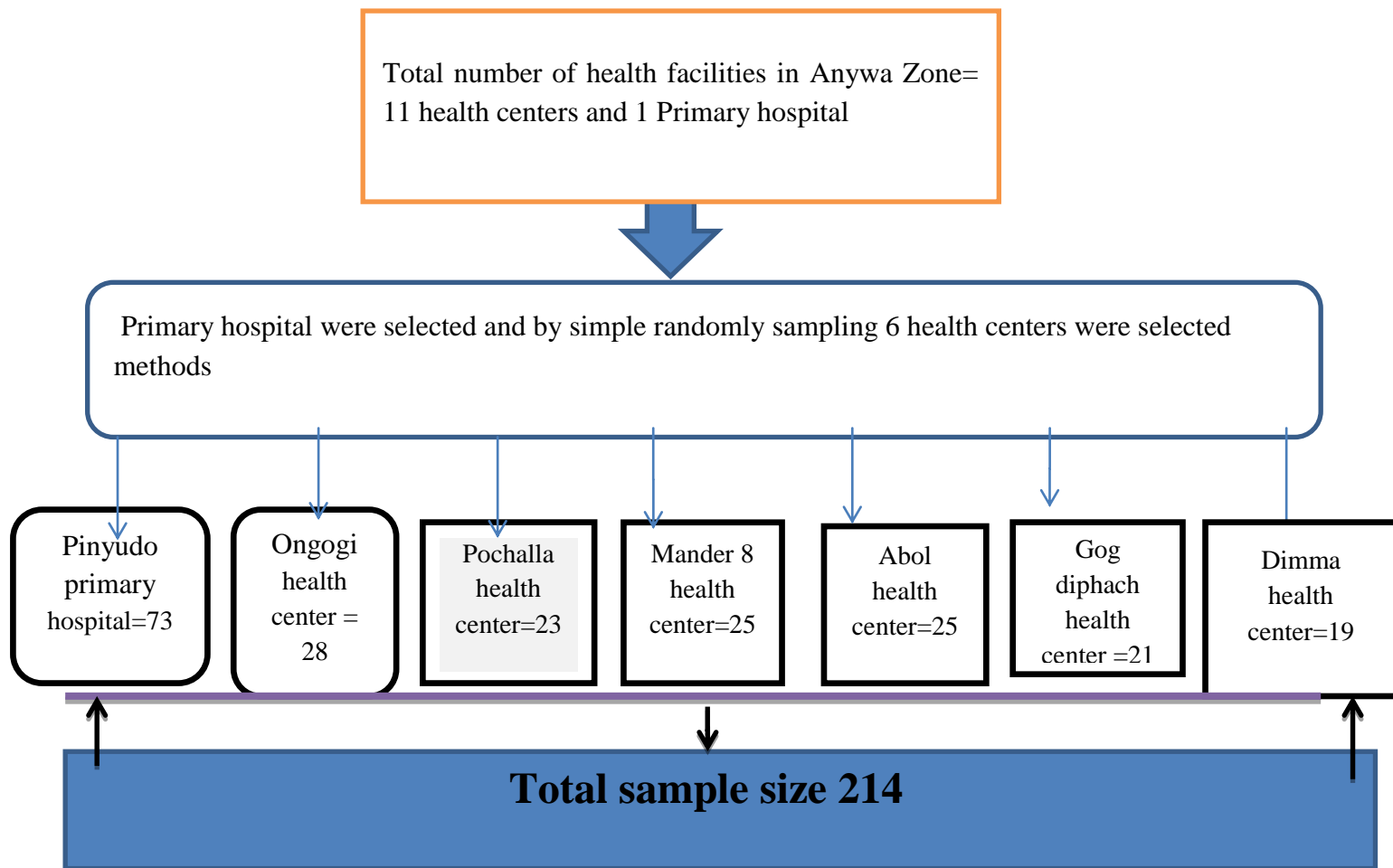


Figure 3:Schematic diagram of sampling diagram

4.7. The study variables

4.7.1 Dependent variable

- Partograph utilization

4.7.2 Independent variable

- Socio-demographic characteristics: Sex, age, service year Place of work ,type of profession
- Obstetric care providers' factors: knowledge, attitude,
- Health facilities related factors: work load, supervision, availability of partograph and place of work

4. 8. Operational definition and definition of terms

- **Utilizing of partograph:** - Obstetric care providers who have been using partograph routinely for all laboring mother.
- **Not utilizing partograph:** - Obstetric care providers who have been using partograph sometimes or occasionally.
- **Health care providers:** - The providers include medical doctor, midwifery, nurse emergency surgeon and health officers which are given delivery service by regular time, rotation and duty time.
- **Good knowledge:** - Obstetric care providers who score 50% and above to knowledge related
- **Poor knowledge:** - Obstetric care providers who score less than 50% to knowledge related questions.
- **Favorable attitudes:** - Obstetric care providers who score mean value and above to attitude related questions.
- **Unfavorable attitudes:** - Obstetric care providers who score less than mean value to attitude related questions.
- **Partograph:** A pre-printed graphic paper that is used to record and monitor progress of labor, maternal condition and fetal condition for women in labor.
- **Time pressure:** -Is a psychological stress that occurs when amother who give birth has less than time available (real or perceived) than is necessary to complete task or obtain a result.
- **Stock out of partograph:** -A pre-printed graphic paper is unavailable at hand or in the health facilities
- **Cervical dilatation:** -Is the opening of the cervix, the entrance to the uterus, during childbirth, miscarriage, induced abortion, or gynecological, as the labor nears, the cervix may start to thin or stretch (efface) and open (dilate).
- **Labor progress:** -Childbirth progresses in three stages: labor, delivery of the baby and delivery of the placenta. Unless labor is cut short by a C-section, all women go through labor, the first stage of childbirth. Labor is in turn broken down into three phases: early, active and transitional.

4.9. Data collection tools

Structured self-administered questionnaire was used to collect the data. The questionnaires are adapted from different peer reviewed literature developed for similar purposes by different authors; it was modified to suit the local condition. During data collection one BSc midwife was assigned as supervisor from Pinyudo primary hospital and six diplomas midwives were assigned facilitators from each selected health facility based on their previous experience or related activity to facilitate during self-administered questionnaire.

The questionnaire also has a section. It identified the Socio-demographic characteristics of respondents and knowledge, attitude of health care providers on partograph use. Consent form was signed by the participant after the purpose of the research has been explained.

4.10. Data Quality measures.

Facilitators and supervisor was trained on data collection tools to understand the objective of study, Facilitators and supervisor attended a two days training (two days before and one day after the pretest) and supervisor checked filled questionnaire are made to ensure their completeness and consistency. All Facilitators was diploma level and all of them are midwives health professionals and the supervisor has a bachelor degree in midwives health working in Pinyudo primary hospital.

4.11. Pre-test of the questionnaire

The questionnaires was pretested at Gambella general hospital among 5% of the study subject (later not included in the main findings), which gives the internal reliability (Cronbach's alpha) 0.739.

4.12. Data management and analysis

The collected questionnaires were checked manually for completeness. Then, coded and entered into Epi data version 4.6.0.4 statistical packages, then exported to SPSS version 26 for analysis. Descriptive analysis such as frequency, percentage, and mean, were applied for different factors and outcomes and data analysis also presented on table, pie chart and different type of graphs.

Both bivariate and multivariate logistic regression analysis was used to determine the association of each independent variable with the dependent variable. Variables significant in

bi-variate analysis $P < 0.25$ were entered into a multivariate logistic regression model to adjust the effects of cofounders on the outcome variable. Finally, statistical significance was declared if $P < 0.05$. Finally interpretation, discussion and recommendation were made based on the findings of this study. Significance level and association of variables was tested by using 95% confidence interval (CI).

4.13. Ethical consideration

Ethical approval was obtained from the institutional review board of University of Jimma and submitted to Anywa Zone health offices. Permission letter was granted from Zonal health offices to respective selected health institutions. Written consent was obtained from each study participants prior to data collection process.

Those respondents who are not willing to participate in the study were not force to be involved. They were also have informed that all data obtained from them would be kept confidential by using codes instead of any personal identifiers and is meant only for the purpose of the study. Participants will inform that, they could decide not to take part in the research if they wished to do so. Participants will assure of confidentiality.

4.14. Dissemination of the result

Results of this study will be distributed to Jimma University and finally, the hard copies of the study will be distributed to Jimma University, postgraduate office; and it will also be disseminated to Gambella Region, Anywa zone western Ethiopia. Finally publication will be attempted on scientific journals

CHAPTER FIVE: RESULTS

5.1 Socio-demographic characteristics of study participants

A total of 212 study participants were involved in the study giving a response rate of 99%. About 93 (43.9%) were found between 25-29 age group categories followed by 68 (32.1%) of 30-34 age group. Majority 150(70.8%) of the study participants were males, and about 162 (76.4%) of the respondent are married and 1 (0.5%) were divorced marital status. Nearly three-fourth 148 (69.8%) of the study participants were protestant. About 39(18.4%) BSC Nurse and 53 (25%) ,35(16.5%) are diploma Nurse and Midwife by their profession respectably .This study also revealed that about 141(65.5% of study participants were working Health center with 114 (53.8%) has work experiences of 1- 3 years and 39 (18.4%) has more than 7 years' work experiences. Almost200 (94.3%) has in service training in the management of a pregnant mother.

Table 1:Socio-demographic characteristics of the study participants in Gambella region, Anywa zone Western Ethiopia. 2021. (n=212).

Variables		Frequency	Percent
Age	18-24	29	13.7
	25 – 29	93	43.9
	30 -34	68	32.1
	35 – 39	16	7.5
	40 – 44	5	2.4
	45 – 49	1	.5
Sex	Male	150	70.8
	Female	62	29.2
Marital status	Married	162	76.4
	Not Married	40	18.9
	Divorced	9	4.2
	Widowed	1	.5
Religion	Protestant	148	69.8
	Orthodox	41	19.3
	Muslim	12	5.7
	Catholic	11	5.2
Profession	Diploma nurse	53	25.0
	Nurse BSC	39	18.4
	Midwife Diploma	35	16.5
	Health officers	34	16.0
	Midwife BSC	33	15.6

	General practitioner	15	7.1
	Emergency surgeon	3	1.4
Current work in	Health center	141	66.5
	Hospital	71	33.5
Service year	1-3 years	114	53.8
	4-6 years	59	27.8
	>7 years	39	18.4
In service training in the management of a pregnant mother	Yes	200	94.3
	No	12	5.7

5.2: Knowledge of obstetric care providers towards partograph utilization

Regarding the Knowledge related towards to partograph utilization, almost all study participants have heard about partograph which is 208 (98.1%) and 173 (81.6%) of them knew that partograph is a tool to be used only in active phase of labor and 15(7.1%) of them perceived that is a tool used to measure a salient feature of recording the whole process of labor. Almost all study participants aware that the components of partograph 205 (96.7%) as assessment of fetal, maternal wellbeing and assessment of labor progress, about 169 (79.7%) study participants agreed that they have used partograph when the cervical dilatation reached 4cm and about 8(3.8%) used when complication detected. Nearly all 208(98.1%) study participants have used partograph when the cervical dilation should be plotted on partograph every 4hrs. About 177 (83.5%) of them has good knowledge about partograph utilization, and the remaining 35 (16.5%) of them had poor knowledge about partograph utilization

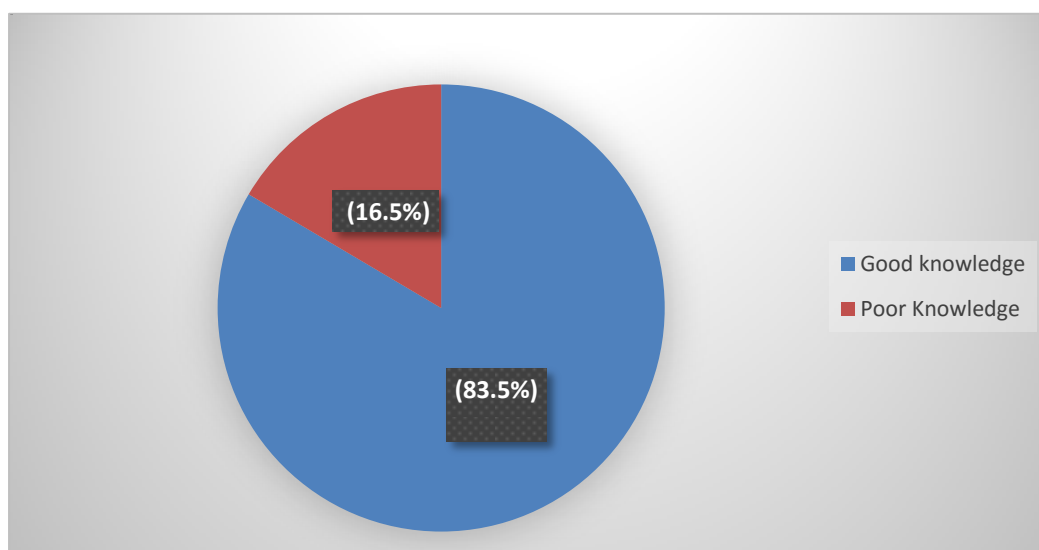


Figure 4: Knowledge of obstetric care providers towards partograph utilization in Gambella region, Anywa zone Western Ethiopia. 2021. (n=212).

Table.2 Knowledge of health care provider toward partograph utilization in Gambella region, Anywa zone Western Ethiopia. 2021. (n=212).

	Variables	Frequency	Percent
Have heard about partograph?	Yes	208	98.1
	No	4	1.9
What is partograph?	A tool to be used only in active phase of labor	173	81.6
	A graphic methods of recording 1st stage of labor	24	11.3
	A salient feature of recording the whole process of labor	15	7.1
components of partograph	Assessment of foetal, maternal wellbeing and assessment of labor progress	205	96.7
	Other	7	3.3
	During attending women in labor, when do you start plotting on the partograph	When labors diagnosed	29
	At 4cm cervical dilatation	169	79.7
	When complication is detected	8	3.8
	At 3cm cervical dilatation	6	2.8
Cervical dilation should be plotted on partograph every 4hrs	Yes	208	98.1
	No	4	1.9
Partograph is designed to detect deviations from normal delivery that develop	Yes	211	99.5
	No	1	.5
What type of client that needs partograph use	Primigravida	20	9.4
	Multiparous	6	2.8
	All women in active phase of labour	186	87.7
Alert line: - A line drawn from the point of cervical dilatation noted at the first vaginal examination in active labor.	Yes	211	99.5
	No	1.00	5.00
Action line: - A line parallel and 4 hours to the right of the alert line	Yes	212	100.0
	No	0.00	0.00

5.3 Attitude of obstetric care providers towards partograph utilization

Concerning the attitudes, about 201(94.8%) study participants have strongly agreed that following the women in labour using partograph has beneficial for the women and it has used to alert the skilled birth attendant. And about 189(89.2%) of the study participants strongly agreed that using partograph can identifies the problems and they recommended to use by skilled birth attendant strongly agreed 194 (91.5%) use partograph on every laboring mother and which 192(90.6%) enables health care providers perform essential basic intervention . About 175 (82.5%) and 178(84%) of study participants are strongly disagreed that using partograph is not time consuming and misleads management as the progress of labor respectively.

Majority 193 (91%) of them has favorable attitude about partograph utilization, and the remaining 19 (9%) of them had unfavorable attitude about partograph utilization.

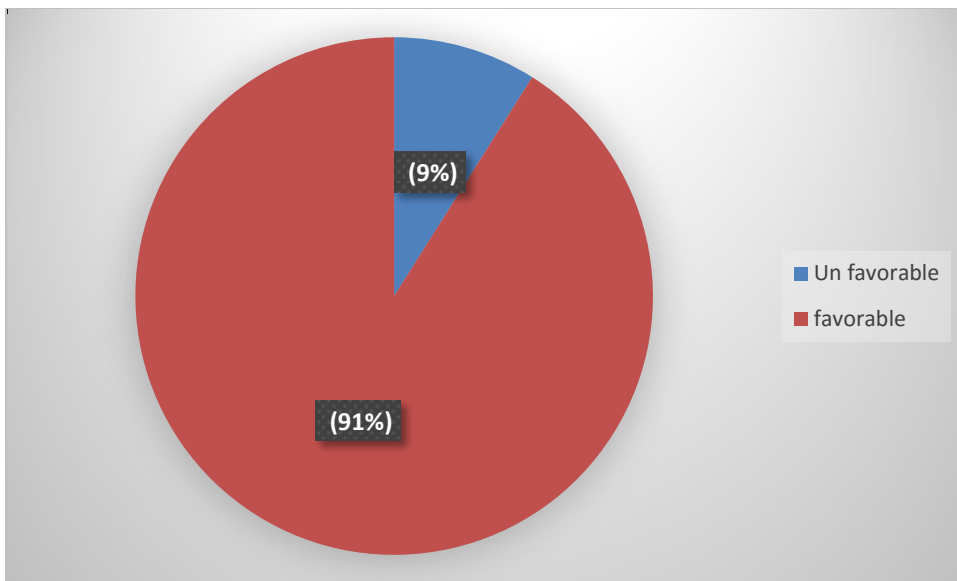


Figure.5: Attitude of obstetric care providers towards partograph utilizationin Gambella region, Anywa zone Western Ethiopia. 2021. (n=212).

Table 3: Attitude of obstetrics care provider toward partograph utilization in Gambella region, Anywa zone Western Ethiopia. 2021. (n=212).

Variables		Frequency	Percent (%)
Follow women in labor, using partograph is beneficial for the laboring women	Strongly agree	201	94.8
	Agree	11	5.2
The partograph is very favourable as its alert skilled birth attendant of any	Strongly agree	184	86.8
	Agree	27	12.7
	Uncertain	1	.5
By using a partograph, health care providers can identify problems	Strongly agree	189	89.2
	Agree	16	7.5
	Uncertain	6	2.8
	Disagree	1	.5
Skilled birth attendant must use a partograph on every laboring mother	Strongly agree	194	91.5
	Agree	17	8.0
	Disagree	1	.5
Using partograph enables health care providers perform essential basic inter	Strongly agree	192	90.6
	Agree	18	8.5
	Disagree	2	.9
Using partograph is time consuming	Strongly agree	1	.5
	Agree	9	4.2
	Uncertain	3	1.4
	Disagree	24	11.3
	Strongly disagree	175	82.5
Using partograph misleads management as the progress of labor and the partograph	Agree	9	4.2
	Uncertain	7	3.3
	Disagree	18	8.5
	Strongly disagree	178	84.0

5.4 Health facility related factor about Partograph utilization

About 137(64.6%) two health care providers work in labor ward per shift and followed three health care providers per shift, and about 123(58%) on average 1-4 deliveries over 24 hours. The ratio of mother to health care provider is 1:2 in labor ward which is about 141(66.5%). Concerning about utilization of partograph for monitoring of labor, almost in all health facilities those who are participated in the study, partograph is readily available at their facilities for use, and about 202(95.3%) of study participants utilized partograph for monitoring of labor. Workload 45(21.2%), lack of supervision 5(2.4%) and lack of trained human power 4(1.9%) are the main reason they're used partograph occasionally and sometimes respectively. About 197(92.9%) received training, from those 143(67.5%) received in-service training on the use of partograph.

Table 4:Health facility related factor toward partograph utilization in Gambella region, Anywa zone Western Ethiopia. 2021.(n=212).

Variables		Frequency	Percent
How many health care providers work in labor ward per shift?	1 per shift	18	8.5
	2 per shift	137	64.6
	3 per shift	44	20.8
	4 or more per shift	13	6.1
On average how many deliveries are conducted in a 24-hour shift?	1-4	123	58.0
	5-10	83	39.2
	10 above	6	2.8
What would you say is the ratio of health care providers to mothers in labor	1:1	21	9.9
	1:2	141	66.5
	1:3	47	22.2
	1:4	3	1.4
Are the partograph readily available at your facility	Yes	208	98.1
	No	4	1.9
Have you been using partograph to monitor labor?	Yes	202	95.3
	No	10	4.7
If *Yes* to Q25, how often is it used?	Routinely (for all labouring mother)	142	67.0
	Occasionally	9	4.2
	Sometimes	50	23.6
If “occasionally” or “sometimes” to Q402, what would make difficult to use	Non-availability of partograph	1	.5

	Using different monitoring tools	1	.5
	Lack of supervision	5	2.4
	Time consuming to use	2	.9
	Workload	45	21.2
	Lack of trained human power	4	1.9
	Shortage of staff	1	.5
Did you receive any training on the use of partogram?	Yes	204	96.2
	No	8	3.8
If *Yes* to Q28, where have been trained on the use of partograph?	From a colleague:	41	19.3
	From a medical doctor	13	6.1
	From in-service training	143	67.5

5.5 Partograph utilization

The utilization of partograph among study participant was about 95.3% was utilized and the remaining 4.7% was not utilized partograph.

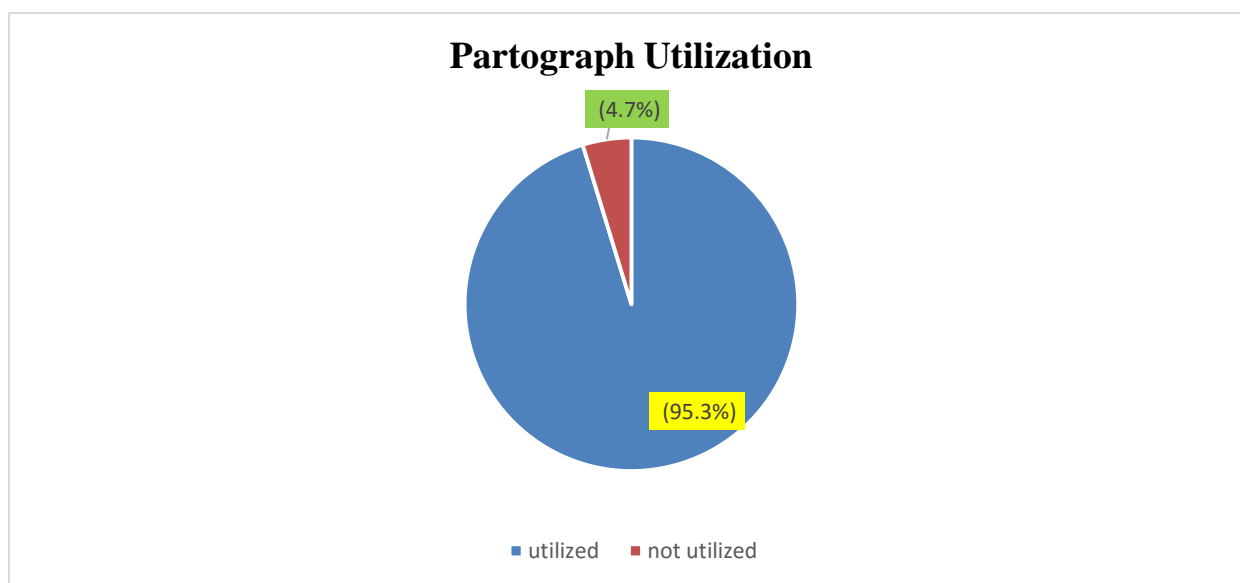


Figure.6:Partograph utilization among study participants in Gambella region, Anywa zone Western Ethiopia. 2021. (n=212).

5.6 Multivariate logistic regression

Those variables with $P < 0.25$ during bivariate logistic regression analysis were included under multivariable logistic regression model to control the possible confounder variables and identified the real predictor variables. But only variables with $p < 0.05$ were considered to have a significant association with utilization of partograph.

The odds health care providers currently working in the hospital were about 13 times higher to utilize the partograph than the one who were working in health centers ($P= 0.022$, AOR = 13.278, CI:1.462, 120.616). The odds of partograph utilization for those who were trained on the use of partograph were 19-fold higher than those who were not trained on the use of partograph ($P=0.003$, AOR = 19.440; CI: 2.747, 137.561). The odds of favorable attitude were 2 times higher than those of unfavorable attitude (P -Value .002, AOR.10, CI, 2.384, 41.948)

Table 5: Factors associated with partograph utilization of bivariate and multivariable logistic regression analysis among obstetric care providers in public Health institution in Gambella region, Anywa zone Western Ethiopia. 2021. (n=212).

Variables		Partograph		COR (95 % CI)	AOR (95 % CI)
		Utilization	Not utilized		
Current working in	Hospital	94(97.9%)	2 (2.1%)	7.088 (.882, 57.000) *	13.278 (1.462,120.616)**
	Health center	108 (93.1%)	8 (6.9%)	1	1
Receive any training on the use of partograph	Yes	197 (96.6%)	7 (3.4%)	111.429 (19.889, 624.266*	19.440(2.747,137. 561) **
	No	5 (62.5%)	3 (37.5%)	1	1
Attitude	Favourable	187 (96.9%)	6 (3.1%)	8.311(2.112,32.711) *	10(2.384,41.948)**
	Unfavourable	15 (78.9%)	4 (21.1%)	1	1

Note: *=p-value<0.25 1=reference point

**=p-value<0.05

CHAPTER SIX: DISCUSSION

6.1 Discussion

In this study majority (95.3%) of study participants utilized partograph routinely, and the remaining 4.7% was not utilized partograph routinely. However, this finding is higher than the study conducted in Gambia (78%)[20], South Africa (64%) [21]), in Eastern zone of Tigray (83%) [24] ,Western Oromia ((89.1%) [25], Amhara region (29%) [17], Wolaita Zone, SNNPR Ethiopia (71.1%) [26]and in North Shoa Zone Central Ethiopia (40.2%)[16] were utilized partograph during labor . The reason for discrepancy might be due to period of study(study conducted in Gambia ,South Africa, and Amhara region(in 2013) , in North Shoa Zone Central Ethiopia(in 2015) ,in Eastern zone of Tigray , Western Oromia andWolaita Zone, SNNPR Ethiopia(in 2017) ,differences in the place of the study which encourage using partograph, different levels of knowledge, attitudes of care providers towards partograph utilization and differences sample size.

However this finding is lower than the study conducted in Niger delta of Nigeria which revealed that the utilization of partograph was (98.8%) [19] and in Kenya Coast general referral hospital, Mombasa (98%) [22] .The reason for the discrepancy among those findings might be due to trainings provided on partograph, close monitoring of supervision, differences in the place of the study which encourage using partograph with different strategies in partograph implementation, different levels of knowledge, attitudes of care providers towards partograph utilization and sample size.

In this study majority 83.5% had good knowledge about partograph utilization, and the remaining 16.5% of them had poor knowledge about partograph utilization, this finding is differences with study conducted in West Shoa Zone, Central Ethiopia in 2019 (57.5%) had good knowledge, while 42.5% of them had poor knowledge of partograph utilization [15]. the differentiation may be due to sample size o r might be due to the fact that obstetric care providers that received on-job training and other reasons might be the competency level and background characteristics of the study participants or due to ignorance of the importance/benefit of the partograph.

In this study about 91% of them has favorable attitude about partograph utilization, and the remaining 9% of them had unfavorable attitude about partograph utilization, this is in line with study conducted in Western Oromia it reveal that most of study participants, 92.6%, had

favorable attitude while the remaining 7.4% had unfavorable attitude towards partograph utilization [25].

Partograph utilization was significantly higher among obstetric care providers who had a favorable attitude as compared to those who had the unfavorable 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 odds of currently working in the hospital were about 13 times higher to utilize the partograph than the one who were working in health centers ($P=0.022$, AOR = 13.278, CI:1.462, 120.616). However, it was contradiction from the study conducted in Addis Ababa six year ago, on May 2015, working in Hospitals makes professionals less likely to use partograph than those health caregiver working at health center (AOR=0.09, CI=0.030.26), this discrepancy might be, due to year of study and they had less client load in the health center and most of them may not receive in-services training ,or may be due to having exposure to different on-job experience, long time experience of partograph use during labor follow up . This finding may be entry point for health institutions and other stake holders to work on how to increase partograph utilization in the health center by giving in -services and on-job training on partograph use.

The odds of partograph utilization for those who were trained on the use of partograph were 19-fold higher than those who were not took training on the use of partograph ($P=0.003$, AOR = 19.440; CI: 2.747, 137.561), this finding is contradiction from the study conducted in Western Oromia in 2017 those who were trained on the use of partograph (AOR = 0.08, 95% CI 0.02, 0.37), this discrepancy might be, due to receive in-services and on-job training , sample size and place of study or might be the competency level and background characteristics of the study participants

In this study all health facilities those who were participated in this study, partograph is readily available at their facilities for use, and about 95.3% utilized partograph for monitoring of labor, and about 67% of them routinely used and around 21.2%, workload, 2.4%lack of supervision and 1.9% lack of trained human power are the main reason they're used partograph occasionally and sometimes respectively. However, it was vary with the study conducted inEastern zone of Tigray, Northern Ethiopia, on February 2017.Majority of the participants 84.5% have available partograph chart on the labor ward. Around 96.1% of the participants used the partograph to monitor patients during labor and 78.3% of them used it routinely and 17.7%occasionally [24]. The region for discrepancy might due to competency

level and background characteristics of the study participants, consequent workload and may be also ignorance of the importance/benefit of the partograph or may be due to lack of follow up by head of the ward.

In this finding about 79.7% agreed that they have used partograph when the cervical dilatation reached 4cm and the remaining 3.8% used when complication detected. However, it was in line with the study conducted in West Showa Zone, Oromia Region 2015, majority of them 74.9% start plotting when cervix reached at 4cm dilatation and only 1.5% replay when complication detected.

CHAPTERS SEVEN: CONCLUSION AND RECOMMENDATION

7.1 Conclusion

The study revealed that higher proportion of obstetric care providers use partograph to follow the progress of labor. In this study current working in, receive any training on the use of partograph and favorable attitude were significant associated with partograph utilization.

The odds of currently working in the hospital were about 13 times higher to utilize the partograph than the one who were working in health centers and also The odds of partograph utilization for those who were trained on the use of partograph were 19-fold higher than those were not took training on the use of partograph. Majority of them has good knowledge about partograph utilization, almost all of them has favorable attitude about partograph utilization.

7.2 Recommendation

To Anywa Zonal health Bureau

- They should provide pre-services and periodic on-job training of health care providers who were working in health centers on how to use partograph and ensure deployment of an adequate number of obstetric care providers based on the available caseloads.

To stake holders (ICAP, Amref, IRC and ACF)

- Monitoring and supervision of health care providers to ensure appropriate use of the partograph should been given highest priority by every hospital administrator and PHCU leader at all time to continuous partograph utilization.

To researcher

- Further study will be done on the large simple size in order to make the representative the result with different method , so that the generalization is possible
- Assess the factors of partograph utilization among health workers using qualitative approach.
- Evaluate the actual practices of health care providers if they have follow mothers in labor that possible use has feedback for the labor outcome.

7.3 Limitation of the study

The limitations of this study could include the fact that there might be social desirability bias which may cause the obstetric care providers who took part in this study to overstate their use of the partograph, because information was obtained from respondents through self-administered questionnaires, rather than observation. And also the study was only conducted in 7 health facilities of the Anywa Zonal. This implies that the findings cannot be generalized to the whole Zonal and all health facility in the Region. And because of Small sample size some variable may not significant associations.

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Annex I: participants 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 Jimma University Institute of Health, Faculty of health sciences School of nursing.

The objective of the study is:-To assess partograph utilization and associated factors among obstetrics care providers in public health institutions in GambellaRegion, Anywa Zone western Ethiopia 2021. 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 research: across sectional study on Partograph utilization and associated factor among obstetric care providers in Anywa zone Western Ethiopia 2021

Perceived benefits and risks: The results may benefit client, health care worker, healthcare facility managers, researchers, policy makers and other stakeholders as appropriate. Being involved in this study does not induce any risk you will face.

Confidentiality: All personal identifiers and personal information will not be taken hence your responses will be kept confidential. Data will be accessed by principal investigator, advisors and research assistant only and finally will be analyzed anonymously.

Participation and withdrawal: Your participation in this study which will take you about 10 minute is fully voluntarily. You will be free withdrawn from the study at any time or not to answer questions if you don't want to answer.

Coordinating organization: Jimma University, Institute of Health, and Faculty of health Sciences, School of nursing.

Persons to contact: If you have any questions/ concerns about this study you can contact;

Principal investigator: Mr Okuch Ochang Ojiel (phone number 0920891902/0969554141/0964582563. Email address okuchojiel@gmail.com

Annex II: Consent form

Dear participant! You are among the participants selected from the healthcare workers in the facility. It is your full rights to participate in this study but if you are not willing to take part you can leave the questionnaire empty however; your honest answers to these questions will help me to get important data on Partograph utilization and associated factor, so; you are kindly requested to give your honest responses and keep participation. It will take a maximum of 10 minutes to answer these questions. Would you willing to participate please? If your answer is yes encircle 1 and go to the next part.

1. Yes 2. No

Dear participant! For the sake of confidentiality please do not write your name or other personal identifier on the questionnaire!

The participant Sign _____

Questionnaire identification number _____

Name of the Interviewer _____ Signature _____ date _____

Name of the supervisor _____ Signature _____ date _____

Annex III: English Versions

- Questionnaire for assessment of Partograph utilization and associated factor among obstetric care providers in Gambella Region, Anywa zone Western Ethiopia 2021.

Please read the instruction and questions for each section before you answer, if you have unclear question or instruction you can ask the principal investigator or assistant.

Part I.Socio-demographic characteristics of study participants in Gambella , Anywa zone Western Ethiopia 2021 (Select the most appropriate answer and tick one from the list below)		
No	Questions	Response options
101	How old are you?	-----by years
102	Sex	1. Male 2. Female
103	What is your current marital status?	1. Not married 2. Married 3. Divorced 4. Widowed 5. Other specify _____
104	Religion	1. Protestant 2. Muslim 3. Orthodox 4. Catholic 5. Other specify _____
105	What is your profession?	1.General practitioner 2.Emergency surgeon(ISO) 3. Health officer 4. Nurse (BSc) 5. Nurse diploma 6. Midwives BSc 7. Midwives diploma
106	Currently working in	1. Hospital 2. Health center
107	Service year (enter number)	----- year
108	Did you receive any in service training in the management of a pregnant mother in labor	1. Yes 2. No

Part II. Knowledge related questions towards partograph utilization, (Please tick one for each statement below to indicate your response)

201	Have you heard about partograph?	1. Yes 2. No
202	What is partograph?	1) A tool to be used only in active phase of labor 2) A graphic methods of recording 1st stage of labor 3) A salient feature of recording the whole process of labor 4) 4.Other specify----- -
203	What are components of partograph?	1. Assessment of Fetal, maternal wellbeing and assessment of labor progress 2. Others specify_____
204	During attending women in labor, when do you start plotting on the partograph?	1) A. When labor is diagnosed 2) At 4cm cervical dilatation 3) When complication is detected 4) At 3cm cervical dilatation 5) Other specify_____
205	Cervical dilation should be plotted on partograph every 4hrs.	1. yes 2. No
206	Partograph is designed to detect deviations from normal delivery that develop as labor progresses	1. yes 2. No
207	What type of client that needs partograph use	1. Primigravida 2. Multiparus 3. All women in active phase of labour 4. On eclamptic patient
208	Alert line: - A line drawn from the point of cervical dilatation noted at the first vaginal examination in active labor.	1. yes 2. No
209	Action line: - A line parallel and 4 hours to the right of the alert line	1. yes 2. No

Part III Attitude related questions towards partograph utilization: Please, tick one to indicate to what extents do you agree or disagree with the following statement

301	To follow women in labor, using partograph is beneficial for the laboring women	A. Strongly agree B. Agree C. Uncertain D. Disagree E. E. Strongly dis agree
302	The partograph is very favorable as it alert skilled birth attendant of any deviation from normal	A. strongly agree B. Agree C. Uncertain D. Disagree E. Strongly dis agree
303	By using a partograph, health care providers are able to identify problems, recognize complications early.	A. strongly agree B. Agree C. Uncertain D. Disagree E. Strongly dis agree
304	skilled birth attendant must use a partograph on every laboring mother	A. Strongly agree B. Agree C. Uncertain D. Disagree E. strongly disagree
305	Using partograph enables health care providers perform essential basic interventions and make referrals to appropriate levels of care when necessary.	A.Strongly agree B.Agree C. Uncertain D. Disagree E. strongly disagree
306	Using partograph is time consuming	1. Strongly agree 2. Agree 3. Uncertain 4. Disagree 5. strongly disagree
307	Using partograph misleads management as the progress of labor and the partograph alert line are not aligned in most pregnant woman.	1. Strongly agree 2. Agree 3. Uncertain 4. Disagree 5. strongly disagree

Part V. Health facility related factor about Partograph utilization.		
401	Have you been using partograph to monitor labor?	1. yes 2. No
402	If *Yes* to Q401, how often is it used?	1. Routinely (for all laboring mother) 2. Occasionally 3. sometimes
403	If “occasionally” or “sometimes” to Q402, What would make difficult to use the partograph routinely when monitoring women in labor? (you can tick more than option)	1) 1. Non-availability of partograph 2) Using different monitoring tools 3) Lack of supervision 4) Time consuming to use 5) Workload 6) Lack of trained human power 7) Shortage of staff 8) 8. Absence of managerial policy
404	Did you receive any training on the use of partogram?	1. Yes 2. No
405	If *Yes* to Q404, where have been trained on the use of partogram?	1. From a colleague: 2. From a medical doctor 3. From in –service training 4. Other specify -----
406	How many health care providers work in labor ward per shift?	1. per shift 2. per shift 3. per shift 4. or more per shift
407	On average how many deliveries are conducted in a 24 hours shift?	1. 1-4 2. 5- 10 3. 10 above
408	What would you say is the ratio of health care providers to mothers in labor?	1.1:1 2.1:2 3.1:3 4.1:4 5. Others (specify).....
409	Are the partograph readily available at your facility	1. Yes 2. No

Dear Participants thank you for your cooperation

Declaration

I, the undersigned declare that this thesis is my own original work in partial fulfillment of the requirement for the degree of Master of Science in maternity nursing

Name: _____

Signature: _____

Date of Submission: _____

This dissertation has been submitted for examination with my approval advisors

Approval of main Advisor: -Dasta warken (BSN.MSc. Assistant Professor)

Signature and date

Approval of co-Advisor: -Mr .Gadisa Bekele (Bsc, Msc)

Signature and date-----

Approval sheet

As thesis advisors, we here by certify that we have read and evaluated this thesis prepared under our guidance by Okuch Ochang Ojiel entitled as “Partograph utilization and associated factor among obstetric care providers in Gambella Region, Anywa zone Western Ethiopia 2021. We recommended that it could be submitted as fulfilling the thesis requirement.

As member of the board of examiners of the Msc. Thesis open defense examination, we certify that we have read and evaluated the thesis prepared by Okuch Ochang Ojiel and examined the candidate. We recommend that the thesis be accepted as fulfilling the thesis requirement for the degree of Master of Science in maternity nursing.

Approval of main Advisor: -Mr. Dasta warken (BSN.MSc. Assistant Professor) Signature and date _____

Approval of co-Advisor: -Mr. Gadisa Bekele (BSc, Msc) Signature and date-----

Internal Examiner

Signature and date-----

External Examiner

Signature and date -----