



## Assessment of Knowledge and Associated Factors of Partograph Utilization among Healthcare Providers in Selected Primary Healthcare Centres in Osun State

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### Abstract

**Background:** Prolonged and obstructed labour have been described to be among the common causes of maternal morbidity and mortality which can be prevented by the use of partograph. Partograph is a valuable tool for monitoring the progress of labour and ensuring safe deliveries. **Aim:** This study assessed knowledge and associated factors of partograph utilization among healthcare providers in selected primary healthcare centres in Osun State, Nigeria. **Methods:** A cross-sectional descriptive research design was adopted and a total number of 120 healthcare providers were selected from 9 primary healthcare centres using a multi-stage sampling technique. Data were collected using a well-structured self-developed questionnaire. All data collected were coded same were analyzed using the statistical package for Social Science (SPSS) 25 version. **Results:** The result showed that 59% have good knowledge. Findings from the study also revealed that only 47.8% of the respondents had ever used a partograph despite the high level of awareness.(65.2% ). **Conclusions:** This study concluded that less than half of the respondents had utilized partograph despite its importance in reducing perinatal morbidity and mortality. Efforts should be made to promote proper training of healthcare providers, raise awareness about the importance of partograph and implement policies that will encourage its routine utilization in primary healthcare facilities.

**Keywords:** Awareness, Assessment, Knowledge, Partograph, Utilization, Healthcare Providers

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### Introduction

Prolonged and obstructed labour are among the common causes of maternal morbidity and mortality in the world. This accounted for 22% and 9% of pregnancy complications and maternal death respectively in Sub-Saharan Africa (Bedada et al., 2020). In Nigeria, the prevalence of obstructed labour was estimated to be 0.78-4% (Ayenew, 2021).

The World Health Organization (WHO) recommends the routine use of partographs as a key intervention to avoid prolonged and obstructed labour (Ayehubizu et al., 2022; Bedada et al., 2020). It's one of the instruments to detect if labour is progressing normally and to warn against signs of fetal distress. As such, the quality of intrapartum care can be achieved with effective utilization of

this tool as it provides evidence for any alteration in maternal health, and birth outcomes (Bedada et al., 2020).

Despite wide publicity of monitoring the progress of labour with the use of partographs and advocacy over the years, cases of obstructed labour continue to be reported, indicating ineffective use of partographs in monitoring labour cases by healthcare providers (Mwari et al., 2022). Evidence suggests that a significant proportion of healthcare providers working in labour units in various hospitals across Africa, especially in primary healthcare centres have poor attitudes towards partograph utilization (Bedada et al. (2020). According to Mwari et al., (2021), there were inconsistencies in the use of partographs in labour management as a larger proportion of healthcare providers deviated from the WHO recommendation on monitoring of labour with partographs in the first stage of labour. Most of pregnancy-related complications can be averted with proper and appropriate utilization of partograph, however, there are various factors associated with effective utilization of this tool such as lack of reprinted partograph in health institutions, poor knowledge, and attitude towards partograph utilization during labour. The challenges to the use of partographs can be resolved by the

provision of pre-service and on-the-job training on partographs for younger nurses. Due to the peculiarity of the nature of primary health facilities with the composition of different healthcare providers from different training institutions, it is essential to assess knowledge and factors associated with the utilisation of partograph among healthcare providers in selected primary healthcare centres in Osun State.

**Methodology**

**Research Design**

A cross-sectional descriptive research design was utilized to assess the level of knowledge and associated factors with partograph utilization among healthcare providers in primary healthcare centres in Osun State.

**Research Setting**

This study was carried out in Osun State, Nigeria. It was created in 1991, it has 3 senatorial districts (Osun Central, East and West). Each of the senatorial districts has at least 10 local government and area offices: out of which Ede, Obokun, Osogbo local government and 9 primary healthcare centers were selected.

**Target Population**

The total population of healthcare providers in the 9 selected primary healthcare centres (3 from each of the local governments) was 120.

**Table:** Showing the Population of Healthcare Providers in Selected Health Centers

SN	Local Government Area	Healthcare Facilities	Population of Healthcare Providers	Percentage
1	Osogbo	Isale-Agbara PHC	15	12.5
2		Alekuwodo PHC	13	10.8
3		oKe-Baale PHC	14	11.7
4	Olorunda	Enikan oyun PHC	12	10.0
5		Atelewo PHC	14	11.7
6		Akogun PHC	13	10.8
7	Ede	Alajue 2 PHC	13	10.8
8		Akode PHC	13	10.8
9		Jagunjagun	13	10.8
		<b>Total</b>	<b>120</b>	<b>100</b>

**Sample size Determination**

The sample size for the study was determined using the Taro Yamane formula (1967).

$$n = N/1+Ne^2$$

$$n = 120/1+(120*0.05^2)$$

$$n = 120/1+(120*0.0025)$$

$$n = 120/1+0.3$$

$$n = 120/1.3$$

$$n = 92.307,$$

SN	Local government Area	Healthcare facilities	Population of healthcare providers	Percentage	Proportionate s
1	Osogbo	Isale-Agbara PHC	15	12.5	11
2		Alekuwodo PHC	13	10.8	10
3		oKe-Baale PHC	14	11.7	11
4	Olorunda	Enikan oyun PHC	12	10.0	9
5		Atelewo PHC	14	11.7	11
6		Akogun PHC	13	10.8	10
7	Egbedore	Alajue 2 PHC	13	10.8	10
8		Akode PHC	13	10.8	10
9		Jagunjagun	13	10.8	10
	<b>Total</b>		<b>120</b>	<b>100</b>	<b>92</b>

**Sampling Techniques**

A multistage sampling technique was utilized for the study.

1st stage involved the random selection of one senatorial district from the three districts in Osun State, thus Osun Central Senatorial District was selected for the study.

2nd stage involved the selection of three local government areas from Osun Central using a simple random method. Thus Osogbo, Olorunda and Ede local government were selected.

3<sup>rd</sup> stage involved the purposive selection of primary healthcare centres in each of the selected local governments that have a higher number of staff strength, it is located in an urban city within the local government. A total of 9 primary health care centres were selected.

4th stage: this is the final stage; convenience sampling techniques were used to select 92 consented healthcare providers who were willing to participate in the study at the time of sample collection.

**Instruments of Data Collection:** A well-structured self-developed questionnaire by the researcher was used to collect data after the validity and reliability of the instruments were assured. It comprises of three sections as follows: section A: this section contains 6 items on socio-demographic data of the respondents.

Section B: This section has 16 items on knowledge of healthcare Providers on partograph.

Section C: This section contains 9 items on challenges facing healthcare providers as regards partograph utilization.

**Method of Data Collection**

Data were collected throughout 3 weeks to ensure that all interested respondents were captured for the study. Five research assistants were trained for the study.

**Method of Data Analysis**

All data collected were coded same were analysed using the Statistical Package for Social Science (SPSS) 25 version. Descriptive statistics was used for frequency, percentages and standard deviation and results were presented in tables.

**Ethical Consideration**

Ethical approval with registration number OSPHCDB/315/VOL.II/68 was secured from the Osun State Primary Health Care Development Board (OSPHCDB), consent was gained, the anonymity of

identity was maintained, and all information supplied was purposely for academics and they were free to withdraw from the study anytime without any penalty attached to it. Also, they were well informed that there are no monetary rewards attached to participation in the study.

**Results**

The socio-demographic characteristic of the respondent is represented in Table 1.

Findings revealed that respondents below the age of 30 years were 43.5% of the total population, Christians 58.7%, Yoruba 89.1%, married were above average 58.7%, Senior Community Health Extension Workers 38.0 % and 78.3% were diploma holders.

**Table 1: Socio-Demographic Characteristics of the Respondent (92)**

Socio-demographic characteristics	Frequency	Percentage
<b>Age of the respondent</b>		
Below 30 years	40	43.5
30-40 years	45	48.9
41 years and above	7	7.6
<b>Religion</b>		
Christianity	54	58.7
Islam	37	40.2
Traditional	1	1.1
<b>Ethnicity</b>		
Yoruba	82	89.1
Igbo	10	10.9
<b>Marital status</b>		
Married	54	58.7
Divorced	5	5.4
Widow	2	2.2
<b>Qualification</b>		
Senior community health extension worker	35	38.0
Junior CHEW	19	20.7
Nurse	17	18.5
Midwife	12	22.8
<b>Level of education</b>		
Diploma	72	78.3
BSc. Degree	18	19.6
Master's degree	2	2.2

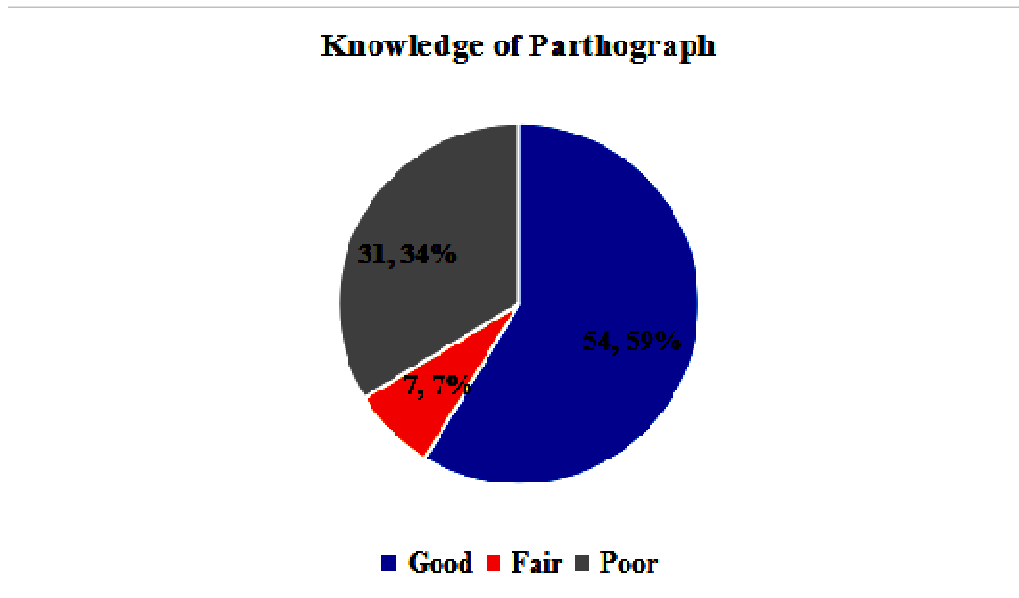
The knowledge of partograph among healthcare providers is represented in Table 2. Findings showed that 65.2% have heard about partograph before, 52.2% disagreed to have used it, 59.8% agreed to the definition given to it, 62.0% saw it as a tool to guide decision making during labour, 54.3% agreed that it should be commenced in the active stage of labour and 59.8% agreed to the monitoring of labour progress and plotting it on the alert time. Furthermore, there were 63.0% and 62.0% benefits reduction in mortality and morbidity rates respectively. The benefit of partograph is seen in 63.0% reduced

newborn death, 62.0% increases in labour efficiency, and 64.1% improved maternal and child quality care. From the knowledge about the use of partograph 71.1% see it as one of the tools for implementing safe motherhood, 76.1% say it will reduce maternal and newborn deaths, 69.6% says in normal progress of labour, the graph plot should fall on the alert line, 64.1% mentioned that in normal labour, a woman has got 2 contractions in 10minutes and 67.4% added that in normal labour, the minimum duration of a strong contraction is 40 seconds.

**Table 2: Knowledge of Partograph among Healthcare Providers (92)**

Variables	Agree	Disagree
	F (%)	F (%)
You have heard about partographs before	60(65.2%)	32(34.8%)
You have used a partograph before	44(47.8%)	48(52.2%)
For you, the partograph may be defined as: A simple graphic recording of the progress of labour and salient conditions of mother and foetus against time in hours	55(59.8%)	37(40.2%)
Partograph is a tool to guide decision-making during labour	57(62.0%)	35(38.0%)
Partograph must be commenced only on clients that are not in the active stage of labour	50(54.3%)	42(45.7%)
Monitoring of progress of labour, and plotting of partograph is on the alert line	55(59.8%)	37(40.2%)
<b>Knowledge of partograph benefits</b>		
Reduces maternal mortality	58(63.0%)	34(37.0%)
Reduces maternal morbidity	57(62.0%)	35(38.0%)
Reduces newborn death	58(63.0%)	34(37.0%)
Increases efficiency in labour	57(62.0%)	35(38.0%)
Required for improved maternal and child quality care	69(64.1%)	33(35.9%)
<b>Knowledge about the use of partograph</b>		
The Partograph is one of the tools for implementing safe motherhood	66(71.7%)	26(28.3%)
The partograph will reduce maternal and newborn deaths	70(76.1%)	22(23.9%)
In normal progress of labour, the graph plot on the Partograph should fall on the alert line	64(69.6%)	28(30.4%)
In normal labour, a woman has got 2 contractions in 10 minutes	59(64.1%)	33(35.9%)
In normal labour, the minimum duration of a strong contraction is 40 seconds	62(67.4%)	30(32.6%)

**Figure 1:** Shows the distribution of respondents based on knowledge of the partograph, and it depicts that 59% have good knowledge, while a good number of them 34% have fair knowledge and 7% have poor knowledge of the partograph.



**Figure 1:** Knowledge of Partograph among Healthcare Providers

Table 3 shows factors associated with the utilisation of partographs among healthcare providers and the results reveal 76.1% Shortage of equipment, clinical supplies and medicines, 65.2% Frequent staff rotation, 80.4% Lack of adequate orientation to its use, 77.2% shortage of staff, 69.6% Late Admission of patients, 52.2% Lack of confidence in midwives, 75.0% Poor graphing skills,

67.4% Negative attitude of midwives, 48.9% Using partograph is not beneficial as the estimate it gives is exaggerated, 90.2% Unavailability of partograph, 92.4% Lack of training, 84.8% Partograph is time consuming, 88.0% Lack of supervision, 82.6% Easier to use other monitoring tool and 87.0% Inadequate knowledge

**Table 3: Factors Associated with Utilization of Partograph among Healthcare Providers.**

Variables	Agree	Disagree
Shortage of equipment, clinical supplies, and medicines	70(76.1%)	22(23.9%)
Frequent staff rotation	60(65.2%)	32(34.8%)
Lack of adequate orientation to partograph use	74(80.4%)	18(19.6%)
Shortage of staff	71(77.2%)	21(22.8%)
Late Admission of patients	64(69.6%)	28(30.4%)
Lack of confidence in midwives	48(52.2%)	44(47.8%)
Poor graphing skills	69(75.0%)	23(25.0%)
The negative attitude of midwives	62(67.4%)	30(32.6%)
Using a partograph is not beneficial as the estimate it gives is exaggerated	45(48.9%)	47(51.1%)
Unavailability of partograph	83(90.2%)	9(9.8%)
Lack of training	85(92.4%)	7(7.6%)
Partograph is time-consuming	78(84.8%)	14(15.2%)
Lack of supervision	81(88.0%)	11(12.0%)
Easier to use another monitoring tool	76(82.6%)	16(17.4%)
Inadequate knowledge	80(87.0%)	12(13.0%)

### Discussion

Monitoring labour with the use of a partograph enables the obstetric caregiver to early identify any delay in the progress of labour and detect signs of maternal or fetal distress so that interventions that can prevent their morbidity and mortality can be undertaken on time. The knowledge and utilization of partograph were therefore assessed among health care providers in selected primary health care centres from each of the senatorial districts of Osun State Nigeria. The findings of this study show that most of the respondents (92.4%) are below 40 years of age, 43.5% below 30 years and 48.9% between 30 and 40 years. This age range reflects the true age of young and vibrant healthcare workers in Nigeria. Generally, the findings revealed that the respondents are majorly Community Health Extension Workers(CHEW) (58.7%) who have attained the level of diploma and more than half of the respondents have good knowledge of partograph 54(58.6%) utilization. This finding is in tandem with the findings of

Zeleeuw and Tegegne, (2018) and Umar et.al., (2019).

Nevertheless, a closer look at the data revealed that only 47.8% of the respondents have ever used partograph despite the 65.2% awareness. More than half (52.2%) have never used it in monitoring labour despite knowing its benefits of reduction in maternal mortality (63%), morbidity (62%) and fetal death (63%). This agrees with the findings of Umar et. al., (2019), but slightly higher than his documented 22% of the respondents that have ever used the partograph in labour monitoring. It is however contrary to the findings of Assifuah et. al., (2020) who documented 97% of partograph utilization in labour monitoring in a metropolis in the central region of Ghana. This disparity might be due to using the midwives alone as the respondents from the primary healthcare centres.

The study by Tilahun et. al., (2021), on the utilisation of partograph and its associated factors among obstetric

caregivers in public health institutions of Southwest Ethiopia, revealed that being a Nurse or Health officer decreases utilization of partograph by 63 % as compared to being Midwifery professionals. Therefore, the shortage of other formally trained obstetric caregivers in primary healthcare centres especially midwives cannot be overemphasized. Nevertheless, it calls for concern for the government and other professional healthcare bodies to activate the training and retraining of all primary healthcare workers on the usage of partographs if the sustainable development goal of reduction of maternal morbidity and mortality is to be achieved. Obande et.al., (2020), have confirmed that Nursing intervention on partograph utilization, not only successfully increases the knowledge and utilization of partograph among the midwives, but also among various cadres of obstetric caregivers such as the CHEW. Nurses are saddled with the responsibilities of health education training and supervision of partograph utilization.

The other specific objective seeks to describe the challenges facing healthcare workers and factors influencing healthcare providers with regard to the utilization of partographs. The result in Table 4.3 revealed findings similar to the findings of Assifuah et.al., (2020), who documented that the leading challenges and factors responsible for the low utilization of partograph in labour monitoring were a majorly shortage of staff (88.0%), unavailability of partograph /instrument (90.2%), inadequate knowledge (87%), poor graphic skills (75%), lack of training (92.4%) and lack of supervision (88.0%). This study also revealed that the negative attitude of the midwife (67.4%) and their lack of confidence in them was a major

challenge for partograph utilization which are in tandem with the findings of Okoroafor et. al., (2022) and Tilahun et. al., (2021). Managers of primary healthcare centres are encouraged to provide incentives and support for training and retraining while midwives make it a point of duty to provide effective health education and supervision to other healthcare workers in primary healthcare centres and imbibe the skill of crisis management.

### **Conclusion and Implication for Practice:**

This study revealed that less than half of the respondents had utilized a partograph despite its importance in improving fetomaternal health during labour and delivery. Therefore, efforts should be made to promote proper training for healthcare providers, raise awareness about the importance of partograph use, and implement policies to encourage its routine utilization in maternal care facilities.

### **References**

- Assifuah, A. P., Hormenu, T., Domfeh, C., & Ebu, N. I. (2020). Knowledge and Challenges of Partograph Utilisation among Midwives in the Central Region of Ghana.
- Ayehubizu .L. .M., Tibebeu .A. .T., Fetene .M .T., Yohannes .S. .H.,& Yadita .Z. .S. (2022)
- Ayehubizu, L. M., Tibebeu, A. T., Fetene, M. T., Yohannes, S. H., & Yadita, Z. S. (2022). Partograph utilization and associated factors among obstetric care givers in governmental health institutions of Jigjiga and Degehabur towns, Somali region, Ethiopia: A cross-sectional study. *PloS one*, 17(3), e0264373.



- Ayeneu, A. A. (2021). Incidence, causes, and maternofetal outcomes of obstructed labor in Ethiopia: systematic review and meta-analysis. *Reproductive health, 18*, 1-14.
- Ayeneu, A. A., & Zewdu, B. F. (2020). Partograph utilization as a decision-making tool and associated factors among obstetric care providers in Ethiopia: a systematic review and meta-analysis. *Systematic Reviews, 9*, 1-11.
- Bedada, K. E., Huluka, T. K., & Bulto, G. A. (2020). Low utilization of partograph and its associated factors among obstetric care providers in governmental health facilities at West Shoa Zone, Central Ethiopia. *International Journal of Reproductive Medicine, 2020*.
- Desalegne Amare Zelellw, D. A. Z., & Teketo Kassaw Tegegne, T. K. T. (2018). Level of partograph utilization and its associated factors among obstetric caregivers at public health facilities in East Gojam Zone, Northwest Ethiopia.
- Mwari, P. S., Gitonga, L. K., & Mukhwana, E. S. (2021). Assessment of the Midwives' Knowledge on Utilization of Partograph in Management of Labour in Public Health Facilities in Tharaka Nithi County.
- Obande, E. I., Sowunmi, C. O., & Obande, J. O. EAS Journal of Nursing and Midwifery.
- Okoroafor, N. L., Judith, E. N., Maduakolam, I., & Okoronkwo, I. (2022). The Determinants of Partograph Utilization Among Obstetric Care Providers At Primary Healthcare Level in South-East Nigeria. A Mixed-Methoss Study. *Midwifery, 5(4)*, 9-27
- Tibebeu, A. T., Fetene, M. T., Yohannes, S. H., & Yadita, Z. S. (2022). Partograph utilization and associated factors among obstetric care givers in governmental health institutions of Jigjiga and Degehabur towns, Somali region, Ethiopia: A cross-sectional study. *PloS one, 17(3)*, e0264373.
- Tilahun, A. G., Gebeyehu, D. G., Adinew, Y. Y., & Mengstu, F. W. (2021). Utilization of partograph and its associated factors among obstetric caregivers in public health institutions of Southwest Ethiopia. *BMC Pregnancy and Childbirth, 21(1)*, 404.
- Umar A, Ameh C, Muriithi F. Matthai M. (2019). Early Warning Systems in Obstetrics: systematic review of literature. *PLOS ONE. 14(5)*, p.e0217864.
- Zelellw, D. A., & Tegegne, T. K. (2018). Level of partograph utilization and its associated factors among obstetric caregivers at public health facilities in East Gojam Zone, Northwest Ethiopia. *PloS one, 13(7)*, e0200479.