

FACTORS ASSOCIATED WITH NON-UTILIZATION OF PARTOGRAPH IN (PRIVATE/PUBLIC) HEALTH INSTITUTIONS IN OWERRI NORTH AND OWERRI MUNICIPAL, IMO STATE

Nwabuko Anastasia Ngozi*, Emesowum Anthonia Chinwendu, Nwagwu Adanma Solomon, Osaka Sandra
Department of Nursing Science, Faculty of Health Science, Imo State University, Owerri, Nigeria.
Corresponding Author: Nwabuko Anastasia Ngozi, Email: ngozimercyann@gmail.com

Abstract: Partographs are recommended by the World Health Organization as essential tools for monitoring labor progression and preventing complications such as prolonged labor. However, despite their importance, usage in many Nigerian healthcare facilities remains inconsistent. This study aims to identify the institutional, socio-economic, patient-related, and attitudinal factors influencing the non-utilization of partographs in Owerri North and Municipal. This study explores the factors associated with the non-utilization of partographs in public and private healthcare institutions in Owerri North and Owerri Municipal, Imo State. The partograph is a critical labor-monitoring tool recommended by the World Health Organization (WHO) for preventing complications such as prolonged labor. Despite its benefits, its consistent use in healthcare settings remains a challenge. A descriptive cross-sectional survey was conducted among 299 midwives. Data were collected using self-administered questionnaires. Data were analyzed using descriptive statistics, including frequency, percentages, and mean scores, with a criterion mean of 2.50. Hypotheses were tested using multiple regression analysis at a significance level of 0.05. Statistical analyses were conducted using SPSS version 22.0. Factors such as institutional practices, socio-economic conditions, patient factors, and attitudes were analyzed for their impact on partograph utilization. The findings reveal that institutional barriers, such as insufficient resources, lack of training, and inadequate supervision, significantly hinder partograph utilization. Socio-economic factors, including poor working conditions, inadequate remuneration, and disparities in patient socioeconomic status, also contributed to non-utilization. Patient-related challenges, such as lack of awareness, cultural beliefs, and mistrust in medical procedures, further limited acceptance. Attitudinal factors among healthcare providers, including perceptions of irrelevance and the burden of heavy workloads, were less significant but still notable. In conclusion, the non-utilization of partographs is influenced by interconnected institutional, socio-economic, patient, and attitudinal factors. Addressing these barriers requires targeted interventions such as resource provision, regular training programs, public health education campaigns, and better remuneration for healthcare workers.

Keywords: Factors; Non-utilization; Partograph; Health institutions; Owerri

1 INTRODUCTION

A partograph is a printed chart that records labor observations in a graphic format for the purpose of alerting midwives and obstetricians to deviations in labor progress as well as maternal or fetal wellbeing [1]. It is widely used as part of the safe motherhood initiative to improve labor management and reduce maternal and fetal morbidity and mortality; as an obstetric tool, the partograph's usefulness and efficiency cut across both resource-poor and developed nations. There is ample evidence that learning how to use it and making sure that knowledge is applied correctly would result in a notable decrease in the incidence and outcomes of prolonged and obstructed labor [2].

The observations displayed on the partograph consist of fetal vital signs, maternal vital signs, features of labour and therapeutics undertaken in the course of the labour. The partograph also contains an alert line (a signal of alert to deviations in labour progress) and an action line, which is the mandatory time to commence actions to correct the deviations in labour progress [3].

Globally, around 303,000 maternal deaths occurred in the year 2015 during and following pregnancy or childbirth. Of all the deaths, 99% were in developing countries in which 546 per 100,000 live births (66%) of them occurred only in Sub-Saharan Africa [4].

Most of the time, maternal deaths and complications are the results of obstructed and prolonged labor. 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. It may also contribute to maternal infection or hemorrhage and to neonatal infection. This can be prevented by accessing skilled delivery services such as plotting partograph during the progress of labour [5].

Partograph is cost effective and affordable tool designed to provide a continuous pictorial overview of labour progress used to prevent prolonged and obstructed labour. It consists of key information about progress of labour, fetal condition and

maternal condition. Its role is to improve outcomes labour; predict the progress of labour; leads to an on time decision and proven intervention [5].

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 [6].

In Nigeria, 70.8% of obstetric care givers were well aware and had good general knowledge of the partograph but far below expectation. They also lacked detailed knowledge of the components. Midwives in labour and delivery room are not using partograph to all mothers continuously to follow the labour process. Similarly, different health facilities not utilized partograph due to different determinant factors such as: time of admission, nature of membrane during admission, knowledge, training, attitude, sex, lack of institutional policy to utilize partograph and number of health professionals per shift [7].

The partograph as a graphic assessment is recommended for routine monitoring of ;the first stage of labour and prevent prolonged labour and its complications .The partograph is an inexpensive tool used to identify abnormal labours which are the causes of problems that led to morbidity and mortality [8].

The role of the partograph in labour management is to allow the midwives and obstetricians to manage all labour at the periphery or central ;unit when labour progress remain normal and to refer when labour progress cross the alert line for obstetric management of the slow labour progress. The action line on a partograph is a prompt intervention by the obstetric team to solve the problem ;of delayed/slow progress of labour. Hence, the alert line and action line is a design to allow labour to be managed by the midwives and obstetricians at the right time to ensure efficient correction of the anomalies so that prolonged labour and other complications are completely prevented and then normal delivery outcome will occur. The partograph therefore is more appropriately a tool for manpower deployment for labour management and care [9]

A considerable number of woman suffer complications from labour and childbirth, some of these complications result in maternal or infant mortality while this problems can be significantly reduced through the use of partograph to monitor labour. Although it is now almost 20 years since World Health Organization recognized partograph as an essential tool in labour monitoring and management, its use has been very inconsistent and incorrect. It was observed by the researcher that the midwives in the labour ward of Owerri North and Owerri Municipal in Imo State neither use nor document their findings on the partograph after reviewing a woman in labour despite its availability. Therefore the researcher deemed it necessary to investigate the Factors Associated with Non-Utilization of Partograph in (Private/Public) health institutions in Owerri North and Owerri Municipal, Imo State.

2 MATERIALS AND METHODS

2.1 Area of Study

This study was carried out among the public health facilities (government owned health centers and hospitals) in the Owerri North and Owerri Municipal, Imo State. It is the capital of Imo State in Nigeria, set in the heart of Igboland. It is also the state's largest city, followed by Orlu, Okigwe and Ohaji/Egbema. Owerri consists of three local government Areas including Owerri Municipal, Owerri North and Owerri West

2.2 Target Population

The target population of this study included 1,180 midwives in private and public health institution in Owerri North and Owerri Municipal, Imo State.

2.3 Sampling Size

Kendra (2018), defined sample as a subset of population that is used to represent the entire group as a whole. Sample size for the study was statistically determined by Taro Yamene formular which is

$$\begin{aligned}
 &\text{Where } n = \text{Sample size} \\
 &N = \text{Population Size} \\
 &I = \text{Constant} \\
 &e = \text{Margin of error test of significance } (0.005)^2 \\
 &\text{(Yamane, 1967).} \\
 &n = \frac{N}{1 + N(e)^2} \\
 &n = \frac{1180}{1 + 1180(0.05)^2} \\
 &n = \frac{1180}{1 + 1180(0.0025)}
 \end{aligned} \tag{1}$$

$$\begin{aligned}
 n &= \frac{1180}{1+2.95} \\
 n &= \frac{1180}{3.95} \\
 n &= 298.735 \\
 n &= 299 \\
 \text{Therefore} \\
 n &= 299
 \end{aligned}$$

2.4 Sampling Technique

Convenience sampling of a non-probability sampling method was used for the study where collection of data was gotten from members of the population who were conveniently available to participate in the study. The researcher visited the health institution in Owerri North and Owerri Municipal in Imo State during the study and got the number of midwives needed for the study using convenience sampling. The midwives who were present and willing to give out information were given questionnaire to fill and was collected instantly. This exercise lasted for 6 months with a total of twelve visits and recorded monthly.

2.5 Instrument for Data Collection

The instrument used for data collection in this study was a self-administered questionnaire. The questionnaire is a set of questions relating to the objectives of the study. The questionnaire were divided into two (2) sections. Section A had structured item which elicited information on demographic data while section B contained information from the respondents which helped the research in solving the research problem. This research work also uses chi-square analysis to very the questions obtain form field survey.

2.6 Validity of the Instrument

Validity is defined as the ability of an instrument to measures what it is supposed to measure. The questions on the questionnaire having reflected on the identified problems of the study were constructed by the researcher and were presented to the supervisor for correction and approval before distribution.

2.7 Reliability of Instrument

Reliability is the extent to which an instrument measures whatever it measures consistently (Chinweuba, et al. 2023). The reliability of the instrument was established with a trial test administered on 20 respondents in the outpatient clinic of Amachara general hospital, Umuahia Abia State. This was so because, these respondents in Umuahia have similar experience as it regards to the factors associated with non-utilization of Partograph in (Private/Public) health institutions and they are not part of the study sample. The reliability of the instrument was determined by using Cronbach's Alpha. The coefficient alpha of the instrument for the 4 sections are 0.907, 0.849, 0.828 and 0.875 respectively, which gave overall reliability index mean of 0.865 which shows that the instrument is reliable.

2.8 Ethical Consideration

An identification letter signed by the H.O.D. Nursing department, Imo State University and a letter of consent was presented to the person in-charge of the purposively selected wards and respondents to gain their co-operation and confidence. Informed voluntary consent was obtained from the respondents, confidentiality was maintained. Those whose works were used were properly referenced.

2.9 Method of Data Collection

An identification letter signed by Head of Department in Nursing department , Imo State University was presented to the person in-charge of the purposively selected wards to allow the researcher distribute the questionnaires to the midwives in their different shifts (morning, afternoon and night shifts). The researcher used "on the spot" method in the administration of the questionnaire who after giving out the questionnaire, she waited until the respondents finish answering the questions in the questionnaire before collecting back the questionnaire. 299 copies of questionnaire were distributed and all were collected back after completion, giving a return rate of 100%.

2.10 Statistical Analysis

Frequency, Percentage, and mean which are descriptive statistics were used to answer research question 1 – 4. For answering research questions, 2.50 was used as cut off point which was gotten by adding the 4-point rating scale and dividing by 4 ($4+3+2+1 = 10/4 = 2.5$). Any item with mean score of 2.50 or above were regarded as agreed while any item with mean score of 2.49 or below were regarded as disagreed. The hypothesis was tested at a significance level of 0.05 using multiple regression analysis. All the statistical analyses were performed using Statistical Package for Social Sciences (SPSS), version 22.0.

3 RESULTS

Table 1 Respondents Demographic Characteristics (n = 299)

S/N	Item	Frequency(F)	Percentage (%)
	Age		
	Below 30	13	4.35
	30 – 40	58	19.40
	Above 40	228	76.25
	Gender		
	Male	0	0.00
	Female	299	100.00
	Marital Status		
	Single	21	7.02
	Married	261	87.29
	Divorced/separated	4	1.34
	Widowed	13	4.35
	Total	299	100%

The analysis on Table 1 which was carried out to assess the respondents' demographic characteristics shows that 13(4.35%) are below 30 years, 58(19.40%) are between 30 – 40 years while 228(76.25%) are above 40 years. All the respondents 299(100%) are female as none of them 0(0%) is male. 21(7.02%) are single, 261(87.29%) are married, 4(1.34%) are divorced/separated while 13(4.35%) are widowed.

Table 2 Institutional factors associated with non-utilization of partograph (n = 299)

S/N	Items	SA 4	A 3	D 2	SD 1	Total	Mean	Remark
1	My institution has sufficient partograph charts available at all times.	299	0	0	0	1196	4.00	Agreed
2	Poor enforcement of policies promoting partograph use	143	97	59	0	981	3.28	Agreed
3	Unavailability of equipment and resources necessary for partograph use affects utilization	299	0	0	0	1196	4.00	Agreed
4	Little emphasis on the importance of partograph use	71	126	81	21	845	2.83	Agreed
5	Irregular supervision on the proper use of partographs	299	0	0	0	1196	4.00	Agreed
6	Irregular workshops or training on partograph use	299	0	0	0	1196	4.00	Agreed
	Grand Mean						3.69	Agreed

Note: Criterion Mean = 2.5

The criterion mean for this study is 2.5. Hence, weighted mean response equal to or above the criterion mean (2.5) indicates acceptance region whereas weighted mean response below the criterion mean (2.5) denotes rejection region. The analysis on table 2 which seeks to identify the health institutional factors associated with non-utilization of partograph in (private/public) health institution in Owerri North and Owerri Municipal, Imo State shows a grand mean of 3.69 which exceeds the criterion mean of 2.5 which shows that the respondents accepted the items as the health institutional factors associated with non-utilization of partograph in (private/public) health institution in Owerri North and Owerri Municipal, Imo State. Specifically, the mean values of the items are above the criterion mean (i.e 4.00, 3.28, 4.00, 2.83, 4.00, 4.00 > 2.5) which shows that the health institution has sufficient partograph charts available at all times, there is poor enforcement of policies promoting partograph use, unavailability of equipment and resources necessary for partograph use affects utilization, little emphasis on the importance of partograph use, irregular supervision on the proper use of partographs and irregular workshops or training

on partograph use are the health institutional factors associated with non-utilization of partograph in (private/public) health institution in Owerri North and Owerri Municipal, Imo State.

Table 3 Socio-Economic Factors Associated with Non-Utilization Of Partograph (n = 299)

S/N	ITEMS	SA 4	A 3	D 2	SD 1	Total	Mean	Remark
1	Poor working conditions discourage the effective utilization of partographs	217	82	0	0	1114	3.73	Agreed
2	Some health workers prioritize immediate financial gains over accurate monitoring with partographs	299	0	0	0	1196	4.00	Agreed
3	Socio-economic disparities among patients affect the uniform application of partographs.	299	0	0	0	1196	4.00	Agreed
4	The unavailability of financial support from health institutions affects partograph usage	299	0	0	0	1196	4.00	Agreed
5	Health workers' socioeconomic background influences their perception of partograph use.	107	136	56	0	948	3.17	Agreed
6	Nurses and midwives are demotivated due to poor remuneration, impacting partograph use	299	0	0	0	1196	4.00	Agreed
7	Patients' inability to afford comprehensive maternity care discourages partograph usage.	299	0	0	0	1196	4.00	Agreed
Grand Mean							3.84	Agreed

Note: Criterion Mean: 2.5

The analysis on table 3 which seeks to identify the socio-economic factors associated with non-utilization of partograph in (private/public) health institution in Owerri North and Owerri Municipal, Imo Stateshows a grand mean of 3.84 which exceeds the criterion mean of 2.5 which shows that the respondents accepted the items as the socio-economic factors associated with non-utilization of partograph in (private/public) health institution in Owerri North and Owerri Municipal, Imo State. Specifically, the mean values of the items are above the criterion mean (i.e 3.73, 4.00, 4.00, 4.00, 3.17, 4.00, 4.00 > 2.5) which shows that the socio-economic factors associated with non-utilization of partograph in (private/public) health institution in Owerri North and Owerri Municipal, Imo State include poor working conditions discourage the effective utilization of partographs, some health workers prioritize immediate financial gains over accurate monitoring with partographs, socio-economic disparities among patients affect the uniform application of partographs, the unavailability of financial support from health institutions affects partograph usage, health workers' socioeconomic background influences their perception of partograph use, nurses and midwives are demotivated due to poor remuneration, impacting partograph use and patients' inability to afford comprehensive maternity care discourages partograph usage.

Table 4 Patient Factors Associated with Non-Utilization of Partograph (n = 299)

S/N	ITEMS	SA 4	A 3	D 2	SD 1	Total	Mean	Remark
1	Lack of patient awareness of the benefits of partographs leads to their non-utilization	247	52	0	0	1144	3.83	Agreed
2	Language barriers between patients and health workers can hinder partograph use	193	84	22	0	1068	3.57	Agreed
3	Cultural or religious beliefs among patients may discourage the use of partographs	231	68	0	0	1128	3.77	Agreed
4	The patient's consent process may delay the initiation of partograph monitoring	299	0	0	0	1196	4.00	Agreed
5	Emergency labor cases often lead to the omission of partograph use	299	0	0	0	1196	4.00	Agreed
6	Illiterate patients are less likely to understand the importance of the partograph	299	0	0	0	1196	4.00	Agreed
7	Patients' mistrust in medical procedures reduces acceptance of partograph use	107	142	50	0	954	3.19	Agreed
Grand Mean							3.77	Agreed

Note: Criterion Mean: 2.5

The analysis on Table 4 which seeks to identify the patient factors associated with non utilization of partograph in (private/public) health institution in Owerri North and Owerri Municipal, Imo Stateshows a grand mean of 3.77 which exceeds the criterion mean of 2.5 which shows that the respondents accepted the items as the patient factors associated with non utilization of partograph in (private/public) health institution in Owerri North and Owerri Municipal, Imo State. Specifically, the mean values of the items are above the criterion mean (i.e 3.83, 3.57, 3.77, 4.00, 4.00, 4.00, 3.19 > 2.5) which shows that lack of patient awareness of the benefits of partographs leads to their non-utilization, language barriers between patients and health workers can hinder partograph use, cultural or religious beliefs among patients may discourage the use of partographs, the patient's consent process may delay the initiation of partograph monitoring, emergency labor cases often lead to the omission of partograph use, illiterate patients are less likely to understand the importance of the partograph and patients' mistrust in medical procedures reduces acceptance of partograph use.

Table 5 Attitudes Towards the Non-Utilization of Partograph (n = 299)

S/N	ITEMS	SA 4	A 3	D 2	SD 1	Total	Mean	Remark
1	Partograph use is not necessary when the patient is progressing well in labor	207	92	0	0	1104	3.69	Agreed
2	Partograph training should be emphasized in health worker education	299	0	0	0	1196	4.00	Agreed
3	The benefits of using partographs outweigh the challenges of utilizing them.	299	0	0	0	1196	4.00	Agreed
4	Heavy workload discourages one from consistent partograph use	241	58	0	0	1138	3.81	Agreed
5	I feel that Partographs significantly influence patient outcomes during labor	299	0	0	0	1196	4.00	Agreed
6	Partograph utilization is beneficial in both tertiary hospitals and primary health centers	299	0	0	0	1196	4.00	Agreed
							3.92	Agreed

Note: Criterion Mean: 2.5

The analysis on table 4 which seeks to ascertain the attitudes towards the non-utilization of partograph in (private/public) health institution in Owerri South, Imo Stateshows a grand mean of 3.92 which exceeds the criterion mean of 2.5 which shows the attitude of the respondents. Specifically, the mean values of the items are above the criterion mean (i.e 3.69, 4.00, 4.00, 3.81, 4.00, 4.00 > 2.5) which shows that Partograph use is not necessary when the patient is progressing well in labor, Partograph training should be emphasized in health worker education, the benefits of using partographs outweigh the challenges of utilizing them, heavy workload discourages one from consistent partograph use, Partographs significantly influences patient outcomes during labor and Partograph utilization is beneficial in both tertiary hospitals and primary health centers.

4 DISCUSSION

The study revealed that institutional factors, such as insufficient partograph charts, lack of resources, poor enforcement of policies, irregular workshops, and inadequate supervision, significantly contribute to non-utilization. These findings align with similar studies conducted in Nigeria and Ethiopia:

The study showed that 100% of respondents agreed that insufficient partograph charts hinder utilization. This finding is consistent with [5], who found that all public health institutions in Addis Ababa had partographs available but did not use them consistently due to inadequate supervision and lack of institutional support.

The study emphasized irregular training as a barrier. Similarly reported that health workers lacked adequate training on partograph usage, leading to poor adoption. It was noted that ongoing training was essential to ensure effective utilization [3].

Irregular supervision was another factor highlighted in the findings, consistent with [7], who found that effective supervision and policy enforcement significantly influenced partograph use among obstetric caregivers in Ethiopia.

These findings underscore the need for stronger institutional policies, regular workshops, and adequate supervision to ensure effective partograph utilization.

The findings indicated that socio-economic factors such as poor working conditions, health workers prioritizing financial gains, socio-economic disparities among patients, and inadequate financial support from institutions significantly influence partograph utilization:

Poor remuneration and working conditions were cited as key deterrents. These findings align with [10], who observed that midwives with better working conditions were more likely to use partographs effectively.

The study found that disparities among patients influenced uniform partograph application. This aligns with [11], who reported that socio-economic inequalities impacted the consistency of partograph usage across different patient demographics.

The absence of financial support was a barrier, as also highlighted by [12], who recommended increased funding for maternal health programs to improve partograph availability and usage.

These findings emphasize the importance of addressing socio-economic disparities and providing better incentives to healthcare workers to ensure consistent partograph usage.

The study identified factors such as lack of patient awareness, language barriers, cultural or religious beliefs, and mistrust in medical procedures as significant contributors to non-utilization:

The findings align with [13], who reported that patients unaware of the benefits of partograph usage were less likely to consent to its use during labor.

Cultural or religious opposition to medical interventions was noted in your study, corroborating findings by [14], who highlighted that cultural norms often discourage the adoption of medical monitoring tools like the partograph.

Communication barriers between patients and healthcare providers were another significant finding. This is consistent with [15], who reported that language differences often hindered the effective use of partographs, especially in diverse populations.

These findings suggest the need for public health education campaigns to raise awareness and address cultural and linguistic barriers.

The study highlighted that attitudes of healthcare providers, such as viewing partograph use as unnecessary for progressing labor or feeling overburdened by the process, influenced non-utilization:

Many respondents believed that partograph use was unnecessary when labor progressed well. This finding contrasts with [16], who emphasized the partograph's role in early detection of complications, regardless of labor progression.

Heavy workload was cited as a barrier to consistent partograph usage, consistent with [17], who identified workload as a key factor affecting midwives' ability to monitor labor effectively.

Despite challenges, most respondents acknowledged the benefits of partographs in influencing patient outcomes, aligning with [18], who found that healthcare workers with positive attitudes towards partographs were more likely to utilize them effectively.

These findings suggest that while healthcare providers recognize the importance of partographs, structural and workload-related challenges must be addressed to encourage consistent use.

5 CONCLUSION

The study identified critical institutional factors, such as insufficient availability of partograph charts, inadequate training programs, irregular supervision, and poor enforcement of policies. These factors significantly hinder the utilization of partographs, emphasizing the need for systemic interventions like regular training workshops, improved supervision, and consistent resource availability to improve usage. This was further ascertained by the hypothesis that was rejected, as the study demonstrated a significant relationship between health institutional factors and non-utilization. The findings underscore the importance of institutional support, including the provision of resources and supervision, to ensure consistent usage.

Socio-economic factors, including poor remuneration of health workers, inadequate institutional funding, and socio-economic disparities among patients, were found to play a substantial role in the non-utilization of partographs. Addressing these disparities through equitable resource distribution and better financial incentives for healthcare workers is essential to enhance compliance and efficiency. This hypothesis was also rejected, with socio-economic factors showing a strong influence on the non-utilization of partographs. Improving financial incentives and addressing socio-economic disparities can mitigate these challenges.

The study revealed that factors such as lack of patient awareness, cultural and religious beliefs, language barriers, and mistrust in medical procedures contributed significantly to the non-utilization of partographs. Public health education initiatives addressing these barriers can increase awareness and improve acceptance of partograph usage during labor. The hypothesis was rejected, as patient-related factors such as lack of awareness and cultural beliefs were shown to significantly affect partograph utilization. Educating patients and addressing cultural barriers are critical steps forward.

Healthcare providers acknowledged the benefits of partograph usage but highlighted workload, perceived irrelevance during uncomplicated labor, and the lack of emphasis on training as barriers. Changing perceptions through education and reducing workload can encourage more consistent use of partographs in labor management. This hypothesis was accepted, indicating that while attitudes influence behavior, they were not the most critical determinants of partograph utilization compared to institutional, socio-economic, and patient-related factors.

The study concludes generally that the non-utilization of partographs in healthcare institutions in Owerri North and Municipal is influenced by multiple interrelated factors, including institutional challenges, socio-economic disparities, patient-related issues, and healthcare providers' attitudes. These findings highlight the need for targeted interventions to address these barriers and improve labor management practices, ultimately reducing maternal and neonatal mortality rates.

COMPETING INTERESTS

The authors have no relevant financial or non-financial interests to disclose.

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