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KNOWLEDGE AND UTILIZATION OF PARTOGRAPH AMONG MIDWIVES IN SELECTED HEALTH FACILITIES IN ANAMBRA STATE

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ABSTRACT

Introduction: Poor intrapartum care remains one of the major causes of maternal morbidity and mortality worldwide. Globally, a woman dies of pregnancy-related causes every two minutes and most of the deaths are preventable with the right care at the right time. The major complications, which account for almost 75% of all maternal deaths are preventable including complications during childbirth. One of the major components of quality management of labour to prevent maternal mortality is the use of partograph by the skilled birth attendant during management of labour.

Aim: This study aimed to determine the level of knowledge and utilization of patograph among midwives working in the labour ward in health facilities in Anambra state, Nigeria.

Methods: This is a cross-sectional descriptive study in which a self-administered questionnaire was used to collect data from 100 midwives in 17 health facilities consisting of 2 tertiary, 3 secondary and 12 primary healthcare centres (PHC) in Anambra state. Obtained data was summarized using mean, and percentages.

Results: Thirty-nine (39%) of the respondents aged less than 30 years, 52% were within 30-45 years while 9% aged 40 years and above. Twenty-one (21%) were just registered midwives while 68% and 11% were registered nurse-midwives and registered nurse-midwives with B.NSc degree respectively. Almost half, 48%, of the respondents have had 5-10 years working experience; 14% of the respondents worked in the primary health facility, 37% of the respondents in the secondary health facility while 49% worked in the tertiary health facility. The results show a 78% level of knowledge among the midwives, although only 72% and 60% knew the level of cervical dilation to start the use of partograph and the benefit of partograph respectively. Level of utilization was 96%, although only 30.2% used partograph always while 51% used it often and 18.9% rarely used it. Barriers identified were shortage of staff, unavailability of partograph and time constraints.

Conclusion: There is good level of knowledge of partograph among midwives working in labour wards across different levels of health care facilities but the depth of the knowledge is not encouraging.

Keywords: *Partograph, knowledge, utilization, midwives, health facilities*

INTRODUCTION

Poor intrapartum care remains one of the major causes of maternal morbidity and mortality worldwide[1]. According to the World Health Organization(WHO) statistics, globally, a woman dies of pregnancy-related causes every two minutes and most of the deaths are preventable with the right care at the right time[2]. From 2000 to 2020, the global maternal mortality ratio (MMR) declined from 339 deaths to 223 deaths per 100,000 live births showing 38% decrease[3]. Unfortunately, the African Region accounted for 69% of global maternal deaths in 2020. More worrisome, in 2020, the average maternal mortality ratio in the African Region was estimated at 531 deaths per 100 000 live births but Nigeria MMR same year was 1047 deaths per 100,000live births, making Nigeria to rank third among countries with extremely high maternal morbidity[2]. It is important to note that

for the world to achieve the Sustainable Development Goal in 2030, the MMR needs to be reduced by at least 20.3% each year from 2020[2].

The major complications, which account for almost 75% of all maternal deaths, are severe haemorrhage, infection, pre-eclampsia, eclampsia, complications during childbirth and unsafe abortion[2]. These complications are preventable through combined safe motherhood strategies of focused antenatal care, prompt referral, active management of labour and immediate post-partum period and access to family planning[4]. One of the major components of quality management of labour to prevent prolonged labour and its deadly consequences is the use of partograph by the skilled birth attendant[1].

The partograph or partogram has been established as the "gold standard" labour monitoring tool universally[5]. It is recommended by the World Health Organization (WHO) for use in active labour [6]. The function of the partograph is to monitor the progress of labour and identify and intervene in cases of abnormal labour. Partograph is a valuable tool for early detection of problems in labour and it is used to recognize and deal with slow progress before labour becomes obstructed. For instance, if there is a need for a caesarean section for the delivery of the baby, it would be performed on time to save the mother and baby[1]. The Partograph helps to reduce, not only the maternal mortality, but also controls perinatal morbidity and mortality[2]. Consequently, it is one of the major training tool for the midwives to record intrapartum details timely and appropriately such that problems of labour are identified for prompt intervention [5,6,7].

Since 1987, global efforts have been focused on reducing maternal and neonatal mortality and morbidity associated with intrapartum care, especially in the developing countries. Many programs and tools have been developed to monitor and manage women in labour, one of which is the use of a new partograph developed by Philpott in 1971 and was later modified by the World Health Organization[6]. Competent use of the partograph can save lives by ensuring that labour is closely monitored thereby reducing the incidence of maternal and child morbidity and mortality[7].

A cross-sectional descriptive study among nurse-midwives in tertiary health institutions in Enugu state found between 69% and 80% utilization of parthograph[8]. A descriptive survey of midwives across tertiary health facilities in South-South Nigeria found that 84% of the midwives had good knowledge of partograph although the percentage of utilization was not clear[9]. A more recent descriptive study among obstetric care givers in primary health centres in Imo state found very poor utilization of partograph[10]. Several factors such as poor knowledge, lack of skill, non-availability of partograph charts, lack of adequate number of health care personnel, an additional time consuming task for the staff, lack of understanding of the relevance of the partograph in preventing obstructed labour, lack of training and continuing education has been identified to affect the utilization of partograph[11]. However, there is paucity of literature on knowledge and use of partograph among midwives in Anambra State that will inform planning for effective nursing services and policies in sub-national and national health systems. This study will provide information on the level of knowledge and utilization of partograph among midwives working in different levels of health facilities in Anambra state.

MATERIALS AND METHODS

This is a cross-sectional descriptive survey that involved seventeen health facilities consisting of two tertiary, three secondary and twelve primary healthcare centres (PHC) in Anambra state. One public tertiary hospitals in the state was purposively selected, while three public secondary hospitals were randomly selected from the state- one secondary health facility from each senatorial district, and four Primary health centres randomly selected from each senatorial district. Overall, a total of seventeen health facilities (2 tertiary, 3secondary and 12 PHCs) were selected for the study. A five section self-administered questionnaire was utilized for data collection. Section A assessed the demographics of the respondent, while section B assessed the knowledge of partograph, Sections C and D assessed the extent of utilization of partograph and elicited the suggestions to effective use of partograph respectively. The data collection instrument was pretested in a secondary health facility in Anambra state. Split-half and Spearman Brown Correlation Coefficient, and Spearman-Brown Prophecy formula was used to test the reliability and a score of 0.99 was obtained which showed that 99% of the variance in the score was reliable and has 1% error variance. Data were collected from the respondents during working hours at the health facilities. Descriptive statistics was used to summarize data. Mean score was calculated using mean score formular as follows.

Mean score = Total number of all the right options (%) divided by Total number of questions

Knowledge rating: <50 = poor knowledge, 50 - 70= fair knowledge,>70 = good knowledge.

Ethical approval for the study was gotten from the Research Ethics Committee of Faculty of Health Sciences and Technology, Nnamdi Azikiwe University, Nnewi Campus, Nnewi. Oral permission was received from the Heads of units/wards of the health facilities before the commencement of data collection. Written informed consent was sought and obtained from the respondents before data collection.

RESULTS

Table 1 shows that thirty nine (39%) of the respondents were less than thirty years, fifty two (52%) were within 30-45 years and nine (9%) were forty years and above. Twenty one (21%) were just registered midwives while sixty eight (68%) and 11% were registered nurse-midwives and registered nurse-midwives with B.NSc. degree respectively. Almost half 48% of the respondents have had 5-10 years working experience. Fourteen (14%) of the respondents work in the primary health facility, thirty-seven (37%) of the respondents work in the secondary health facility while forty nine (49%) work in the tertiary health facility.

Table 2 shows that 100% of the respondents know about Partograph. However, 76% knew exactly what partograph is used for and 68% knew the components of a Partograph. The table also show that 84% and 90% of the respondents knew the function of the alert line and the action line respectively. Unexpectedly, a lower percentage (72%) and (60%) knew the level of cervical dilation to start the use of partograph and the benefit of partograph respectively. Applying the formula for mean score for knowledge, the mean score for level of knowledge was 78%.

Table 3 show that 96% of the respondents had ever used Partograph for management of labour. However, only 30.2% of them used Partograph always while the majority, 51%, used it most

times and 18.9% rarely used partograph . Table 3 also shows that all respondents at the selected tertiary health facility had used partograph for management of labour whereas 97.3% and 78.6% of those at the secondary and primary health facility respectively had used Partograph.

Table 4 shows that 88.5% of those that used partograph experienced barriers in some cases. Shortage of staff was highest (47.1%) among the most frequent barriers experienced. This is followed by time constraint (32.9%) and unavailability of partograph (20.0%) respectively. The table also shows that 100%, 97.2% and 79.6% of those that ever used Partograph across primary, secondary and tertiary respectively experienced barrier to the use of Partograph. Almost all (90.9%) of the respondents at the primary health centre had unavailability of Partograph as their major barrier, while time constraint (62.9%) and shortage of staff (47.1%) were the major barriers experienced at the secondary and tertiary health facilities respectively.

Table 1: Demographic characteristics of the respondents **n=100**

Variables		Frequency	Percentage
Age:	Less than 30	39	39.0
	30 to 45	52	52.0
	45 and above	9	9.0
	Total	100	100.0
Sex:	Male	4	4.0
	Female	96	96.0
	Total	100	100.0
Educational Qualification: RM		21	21.0
	RN/RM	68	68.0
	RN/RM/BSc.	11	11.0
	Total	100	100.0
Years of experience: less than 5years		40	40.0
	5 to 10year	48	48.0
	Above 10years	12	12.0
	Total	100	100.0
Level of Facility:	Primary	14	14.0
	Secondary	37	37.0
	Tertiary	49	49.0
	Total	100	100.0

Table 2: Knowledge of Partograph

Variables	Frequency	Percent
Do you know about Partograph		
Yes	100	100.0
No	0	0
What is Partograph?		
A tool for effective labour monitoring	76	76.0
A chart used to diagnose labour	12	12.0
A tool for monitoring pregnancy	8	8.0
Not sure	4	4.0
Total	100	100.0
What are the components of a Partograph?		
Fetal condition; Progress of labour; Maternal condition and outcome	68	68.0
Progress of labour and fetal condition	11	11.0
maternal condition and outcome of labour	9	9.0
Not sure	12	12.0
Total	100	100.0
What is the function of alert line?		
Assists for early indication of neonatal resuscitation.	84	84.0
Helps for early indication for proper referral for expert management	8	8.0
Not sure	8	8.0
Total	100	100.0
What is the function of action line?		
Helps for early indication for proper referral for expert management	90	90.0
Assists for early indication of neonatal resuscitation.	8	8.0
Not sure	2	2.0
Total	100	100.0
At what cervical dilatation do you apply the use of partograph?		
2cm	18	18.0
4cm	72	72.0
5cm	5	5.0
Total	100	100.0
What are the benefits of **Partograph**?		
Ensures Maternal and Child Safety	60	60.0
Early Identification of child abnormality	20	20.0
Prevents complications of caesarian section	10	10.0
Prevents abruptio placentae	10	10.0
Total	100	100.0

Table 3: Use of Partograph and frequency of use across different health facilities

variables	Primary n (%)	Secondary n(%)	Tertiary n(%)	Total N(%)
Use of Partograph				
Yes	11(78.6)	36 (97.3)	49(100)	96 (96)
No	3 (21.6)	1 (2.7)	0 (0.0)	4 (4)
Total	14 (100)	37(100)	49 (100)	100 (100)
How often:				
Rarely	9 (81.8)	4 (11.1)	5 (10.2)	18 (18.8)
Most times	2(18.2)	25 (69.4)	22(44.9)	49(51.0)
Always	0 (0.0)	7 (19.5)	22(44.9)	29(30.2)
	11(100)	36(100)	49(100)	96(100)

Table 4: Major barriers experienced for partograph utilization across different levels of health facility

Variables	Primary n (%)	Secondary n(%)	Tertiary n(%)	Total N(%)
Experienced barriers:				
Yes	11(100)	35 (97.2)	39(79.6)	85 (88.5)
No	0(0.0)	1 (2.8)	10(20.4)	11(11.5)
Total	11(100)	36(100)	49(100)	96(100)
Most frequent barrier:				
Shortage of staff	1(9.1)	7(20)	32(82.1)	40(47.1)
Time constraint	0(0.0)	22(62.9)	6(15.4)	28(32.9)
Unavailability of partograph	10(90.9)	6(17.1)	1(2.5)	17(20.0)
Total	11(100)	35(100)	39(100)	85(100.0)

DISCUSSION

The study found that the respondents had good knowledge of Partograph as the mean score of knowledge of Partograph was 78%. This is not surprising because the respondents were only midwives who by virtue of their training must have been exposed to Partograph use. However, it is expected that all the respondents should have good knowledge of Partograph being the major tool at the labour ward but the study revealed the contrary. For instance, less than the mean level of knowledge (72%) of the respondents knew the

level of cervical dilatation to start the use of partograph and even a lower percentage (60%) knew the benefits of use of partograph for management of labour. This situation calls for concern among the stakeholders in the health systems especially the national and subnational managers of maternal and child health in Nigeria because the finding is a pointer to mothers receiving unskilled birth attendance in a formal health facility. Our finding is similar to other studies in Nigeria[7,8], South Africa[9], which revealed good knowledge of partograph among midwives although our study was done across different levels of health facilities, Opiah et al. focused on tertiary health facilities only. However, in contrast to our findings, Ethiopia studies revealed a little above half of the respondents having good knowledge of Partograph although the study targeted all health workers. Our finding, however, is not consistent with another previous study in Nigeria[10] and Ethiopia[3,9,11] that found only 32.3% of the respondents used Partograph for labour management[2]. The reason for this sharp contrast may be possibly due to a wider coverage of respondents which involved doctors, midwives, community health extension workers (CHEWs), and "Auxiliary nurses", compared to our study which targeted only midwives[11].

Although all respondents claimed they knew about Partograph, only 76% knew exactly what it is used for. This is not in the interest of maternal and child health in the health industry. Partograph is a major tool for management of labour and it is expected that all midwives should have an in-depth knowledge of it, especially those working at the labour ward. Unfortunately, some thought that partograph is used for monitoring pregnancy while some were not even sure of what it is. Our finding is similar to an earlier study conducted by which also revealed that not all midwives knew what partograph is used for as they found 84% of midwives knew what the partograph was showing[5]. This calls for immediate action as midwives play a critical role in obstetric care all over the world including Nigeria. Our study also revealed that up to 90% of the respondents knew the function of the action line and unexpectedly, a lower percentage (72%) knew the level of cervical dilation to start the use of partograph while 60% of the respondents knew the benefit of partograph. These inconsistencies in the level of knowledge in specific areas of partograph is worrisome. Without in-depth knowledge of partograph, there would not be effective use of partograph in the management of labour. A previous study had reported lack of detailed knowledge of partograph across non-physician obstetric workers including the midwives[6].

Our study shows that majority of our respondents (96%) had used partograph for management of labour. This is similar to another study where it was found that 92.6% of sampled health professionals used Partograph for labour management[7]. On the contrary, our finding is higher than a previous study in Nigeria that found only 75% of the respondents ever used Partograph[8]. The higher percentage in this study may be because the respondents were midwives that are working in labour wards while their respondents were all nurses working in a tertiary institution. Other similar studies also found lower level of utilization of partograph in health facilities. Tilahum and his colleagues[13] found 43% utilization. Out of those that had ever used Partograph across different levels of health facilities, only those at tertiary health facilities had almost half (44.9%) of them using Partograph always while 0% and 19.5% of

Primary and secondary midwives used Partograph all the time. Majority (81.8%)of those that work at the Primary Health centres rarely used Partograph. This is similar to the study that found inconsistencies in the WHO guideline in the of partograph by the midwives in Kenya[14].

This study also revealed that three quarters of those that had never used partograph came from the primary health care facilities and none came from the tertiary health facility. This is worrisome because primary health facilities are the first point of care including obstetric care at every community. Consequently, most pregnant women especially the poor and rural dwellers are likely to visit the primary health centre for obstetric care including labour management. Poor quality of PHC service delivery has been identified as one of the factors negatively influencing utilization of PHC services by women[15].

Our results also show that approximately 30% of the respondents used partograph every time for labour management. No wonder, statistics show that nearly 20% of all global maternal deaths occur in Nigeria. Between 2005 and 2015, it is estimated that over 600,000 maternal deaths and no less than 900,000 maternal near-miss cases occurred in the country[16] . Nigeria contributed 10 per cent of global deaths for pregnant mothers and each year approximately 262,000 babies die at birth[17]. In fact, a Nigerian woman has a 1 in 22 lifetime risk of dying during pregnancy, childbirth or postpartum/post-abortion[16]. Worst still, no respondent from the primary health care facilities used partograph at all times for labour management and 81.8% of the primary health care providers used partograph just rarely. This calls for urgent scrutiny of the quality of maternal and childcare services provided in primary health care. This is because primary health care is the first point of call for health services and without the use of adequate tools for healthcare management including labour management complications will abound. Nevertheless, our finding is contrary to a similar study in Ethiopia where 73.8% of the respondents use partograph routinely[14]. Although our study involved only midwives, the Ethiopia study included all obstetric providers.

It was also found that the majority of the respondents (88.5%) experienced one form of barrier or the other in an attempt to use partograph at the health facility. Unfortunately, all the respondents from the primary health care experienced barriers for use of partograph while 97.2% and 79.6% experienced barriers for using partograph in secondary and tertiary health facilities respectively. This situation needs the attention of the decision makers considering the importance of maternal and child health in national development. Maternal and Child Health is fundamental to the development of every nation including Nigeria[16]. Consequently, all forms of barriers that could hinder the use of an important tool like partograph needs to be addressed

Our study revealed that the most frequent barrier was dearth of staff. Our finding corroborates with the findings of other similar quantitative studies in Nigeria where shortage of staff negatively influenced use of partograph[8,10,18.] Moreover, findings of both qualitative and quantitative studies outside Nigeria are in line with those of our study, as they found shortage of staff as a major challenge in utilization of partograph[12,13,19]. However, there are differences in the most frequent barriers to use of partograph across different levels of healthcare facility in this study. While shortage of staff remains the most frequent barrier at the tertiary health

facility, unavailability of partograph was the most frequent barrier (90.9%) at the primary health care level. This agreed with findings from a previous Nigeria study which found only 9.1% respondents that had partographs available in their labour wards at primary health care facilities level[20]. Unavailability of a working tool leads to poor quality health care delivery and creates inequities in the provision of health care. However, findings from another similar study in Nigeria did not align with the current study as unavailability of partograph was not a major barrier at only the primary health care level but also at other levels especially the secondary health care.

Overall, there was reasonable knowledge of partograph among midwives working in labour wards across different levels of health care facilities in this study. However, there is a lack of detailed knowledge that can ensure high quality maternal and child care especially among midwives at the primary health care level. Moreover, there was poor utilization of partograph for management of labour because of some factors like shortage of staff and unavailability of partograph.

CONCLUSIONS

Although there seems to be high knowledge of partograph among midwives working in labour wards across different levels of health care facilities, detailed knowledge that can ensure high quality maternal and childcare especially among midwives at the primary health care level was lacking. It is important that continuous in-service training on partograph use be embedded in primary health care programmes to ensure adequate knowledge of partograph among midwives. Health facility resource allocation mechanisms need to be reviewed to ensure strategic allocation of resources that will address most important needs for quality health care delivery.

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