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Knowledge and utilization of partograph among primary healthcare workers in Sokoto metropolis, Nigeria

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ABSTRACT

Background: Although, evidence from several studies has shown that the majority of maternal and perinatal deaths and complications could be prevented by use of partograph, its use remains poor in the sub-Saharan African countries and other developing countries. **Aim**: This study aimed to assess the knowledge and utilization of partograph among primary healthcare workers in Sokoto metropolis, Nigeria. **Materials and Methods:** A cross-sectional study was conducted among 239 health workers (selected by a 2-stage sampling technique) working at the maternity units of the Primary Healthcare Centers (PHCs) in Sokoto metropolis, Nigeria. A set of semi-structured self-administered questionnaire was used to obtain data on the research variables. Data were analyzed using the IBM SPSS version 20 statistical computer software package. **Results**: A larger proportion, 103 (43.1%) of the 239 respondents were community health extension workers (CHEWs). Most of them (80.3%) knew that partograph is a graphical representation of the events in labour, but only about half (55.2%) knew that it contains 3 components, and only about half to two-thirds of respondents knew the usefulness of the information contained in the various components of the partograph. Only about a fifth of respondents (22.2%) have ever used partograph to monitor women in labour, and the most commonly cited barrier to its use was unavailability (65.6%). **Conclusion**: This study showed sub-optimal knowledge and poor utilization of partograph among primary healthcare workers in Sokoto metropolis, Nigeria. The state government should recruit sufficient number of qualified personnel to run the maternity units of the PHCs in the state, while the management of the respective hospitals should periodically train their staff on the use of partograph and ensure its constant supply in their maternity units.

Keywords: Partograph, knowledge, utilization, primary healthcare workers

INTRODUCTION

Obstructed labour accounts for a substantial proportion and it is also believed to be the most disabling of all maternal conditions worldwide, causing both maternal and perinatal morbidity and mortality.[1] In 2015, the global estimates from the World Health Organization (WHO) showed that developing countries account for approximately 99% of global deaths with sub-Saharan Africa alone accounting for 66%; and with over one-third of all maternal deaths worldwide being from Nigeria (19%) and India (15%).[2] The cause for concern is the fact that although evidence from several studies has shown that the majority of maternal and perinatal deaths and complications could be prevented by use of partograph (a simple pre-printed form which provides a pictorial overview of progression of labour with charts of fetal and maternal conditions which assists in identifying deviations from "normal" labour progression), its use remains poor in the sub-Saharan African countries and other developing countries. In addition, even in the few situations where it is used, it is often incompletely and incorrectly filled, and the results are often misinterpreted; and in several instances, it is filled retrospectively after delivery, thus making it just a midwifery recording sheet instead of a labour management tool.[3-7] It is disturbing that despite the fact that the simple design of the partograph makes it

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applicable and useful at all levels of healthcare delivery including primary and secondary healthcare facilities where the bulk of maternity services are provided, and are mostly manned by midwives and inexperience medical officers, it is utilized mainly in the tertiary healthcare facilities.[3,8-10]

In Sokoto State, Nigeria, most, 574 (92.7%) of the 619 functional health facilities are primary healthcare facilities, and they provide maternity care services for most of the populace. Assessment of the knowledge and utilization of partograph among PHC workers is important in view of its effectiveness in preventing and reducing maternal and perinatal morbidity and mortality. Previous studies conducted among healthcare workers across Nigeria reported wide variations in the knowledge and utilization of partograph with higher levels of knowledge of partograph among health workers in the tertiary healthcare facilities as compared to those in the secondary and primary healthcare facilities, while utilization of partograph was mainly in the tertiary healthcare facilities.[11-13] Currently, little is known about the knowledge and utilization of partograph among health workers in Sokoto State, Nigeria. This study was conducted to assess the knowledge and utilization of partograph among primary healthcare workers in Sokoto metropolis, Nigeria.

MATERIALS AND METHODS

Study Design, Population and Area

A cross-sectional study was conducted among healthcare workers working at the maternity units of the Primary Healthcare Centers (PHCs) in Sokoto metropolis, Nigeria, from September to November 2017. All those who consented to participate were considered eligible for enrollment into the study.

Sample Size Estimation and Sampling Technique

The sample size was statistically estimated at 239 and the eligible participants were selected by a 2-stage sampling technique. At the first stage, 5 PHCs were selected from each of the 4 Local Government Areas (LGAs) in Sokoto metropolis, Nigeria, by simple random sampling using the ballot option. At the second stage, eligible participants were selected from each of the selected PHCs by systematic sampling technique using the staff list in the respective facilities to constitute the sampling frame. Proportionate allocation was done in the selection of participants from the respective health facilities based on their staff strength.

Data Collection and Analysis

A set of pretested semi-structured self-administered questionnaire was used to obtain information on the participants' socio-demographic characteristics, and their knowledge and utilization of partograph. The questionnaire was pretested on 20 primary healthcare workers working at one of the PHCs that were not selected for the study. The necessary modifications were effected based on the observations that were made during the pretesting. Data were analyzed using the IBM SPSS version 20 computer statistical software package. Quantitative variables were summarized using mean and standard deviation, while qualitative variables were summarized using frequencies and percentages.

Ethical Consideration

Ethical approval was obtained from the Research and Ethical Committee of Sokoto State Ministry of Health, Sokoto, Nigeria. Permission to conduct the study in the selected PHCs was obtained from the administration of the respective Local Government Areas, and informed written consent was obtained from the study participants before commencing questionnaire administration.

RESULTS

Socio-demographic characteristics of respondents

All the 239 questionnaires administered were adequately completed and found suitable for analysis, giving a response rate of 100%. The mean age of the respondents was 33.7 ± 8.1 years. Majority of respondents were aged 20-39 years (73.6%), belong to Hausa ethnic group (71.1%), and were males (58.6%). Most, 219 (91.6%) of the 239 respondents were Muslims, majority of them were married (66.5%), and a larger proportion of respondents (43.1%) were community health extension workers (CHEWs). Majority of respondents (71.5%) have spent ≤ 10 years in service (Table 1).

Respondents' knowledge of partograph

Most, 192 (80.3%) of the 239 respondents knew that partograph is a graphical representation of the events in labour, but only about half of them (55.2%) knew that it contains 3 components (i.e., fetal condition, progress of labour, and maternal condition). Also, only about half to two-thirds of respondents knew the usefulness of the information contained in the various components of the partograph in monitoring the progress in labour objectively, reducing or preventing morbidity and mortality in both mother and fetus, and in making referral decisions (Table 2).

Table 1: Socio-demographic characteristics of respondents

Variables	Frequency (%), n = 239
Age group (years)	
20-29	88 (36.8)
30-39	88 (36.8)
40-49	54 (22.6)
≥ 50	9 (3.7)
`Sex	
Male	140 (58.6)
Female	99 (41.4)
Marital status	
Single	69 (28.9)
Married	159 (66.5)
Separated	5 (2.1)
Divorced	4 (1.7)
Widowed	2 (0.8)
Religion	
Islam	219 (91.6)
Christianity	20 (8.4)
Ethnicity	
Hausa	170 (71.1)
Yoruba	43 (18.0)
Igbo	17 (7.1)
Others	9 (3.8)
Cadre	
Doctor	15 (6.3)
Nurse	56 (23.6)
Midwife	65 (27.2)
CHEW	103 (43.1)
Length of practice	
1-10	171 (71.5)
11-20	53 (22.2)
≥ 21	15 (6.3)

CHEW: Community Health Extension Workers

Utilization of partograph by respondents

Whereas, most of the respondents (80.8%) have ever conducted labour, only about a fifth of them (22.2%) have ever used partograph to monitor labour. The most common abnormalities ever detected and referred through use of partograph by the respondents that had used it were prolonged labour (100%), obstructed labour (67.9%), and fetal distress (50.9%). The most common reasons given by those who have never used partograph were unavailability of partograph (65.6%) and lack of skills in monitoring labour with partograph (22.0%) [Table 3].

DISCUSSION

This study assessed the knowledge and utilization of partograph among primary healthcare workers in Sokoto metropolis, Nigeria. A larger proportion of the respondents in this study (43.1%) were community health extension workers (CHEWs), this is in contrast to the finding in a study conducted in southwest Nigeria[11] in which only 15.3% of respondents were CHEWs. This finding indicates inadequate staffing of the PHCs in the study area with skilled birth attendants, and it underscores the need for the state government to recruit sufficient number of qualified personnel to run the maternity units of the PHCs in the state. Knowledge of partograph was sub-optimal among the respondents in this study. Whereas, most of them (80.3%) gave correct description of partograph, only about two-thirds (59.8%) knew that it is a chart containing maternal and fetal information during pregnancy, and only about two-thirds and below knew the components of a partograph and their functions. While this finding is similar to the finding in a study conducted among midwives in the Niger Delta Region of Nigeria[12] in which 84% of respondents knew what a partograph is, it differs from the finding in study conducted among obstetric care givers in southwest Nigeria[11] in which only 37.3% of respondents could mention at least one component of the partograph. While the findings in this study and the latter studies highlight the variations in the knowledge of partograph across the Nigeria, it also reflects the wide variations in the knowledge of partograph in studies conducted across sub-Saharan Africa.[14-16]

The low proportion of respondents (22.2%) that have ever used a partograph to monitor women in labour in this study could be due to both the sub-optimal knowledge of partograph among them, and the unavailability of partograph that was cited as the main reason for not utilizing it. This position is supported by the finding in a study among obstetric care givers in southwest Nigeria[11] in which only 37.3% of respondents could mention at least one component of partograph and only 32.3% of respondents used the partograph to monitor women in labour. Similarly, a study conducted among obstetric care providers in urban referral public health institutions in northwest and southwest Cameroon[14] reported that less than one-third (29.6%) of respondents had good knowledge of partograph, and only 32.4% of respondents routinely used it in monitoring women in labour. On the contrary, a study conducted among obstetric care givers in public health institutions of Addis Ababa, Ethiopia[15] reported that 96.6% of respondents correctly mentioned at least one component of the partograph, and 57.3% used it to monitor mothers in labour. A study conducted among doctors and midwives at a district hospital in Gauteng, South Africa[16] also reported that 83.8% of respondents have had some training on the partograph, while 79.4% routinely use it. The findings in this study and the latter studies bring to the fore the need for the management of the respective health institutions across sub-Saharan Africa to promote the use of partograph in their respective facilities by periodically training their personnel on the use of partograph and ensuring its constant supply in their maternity units.

Table 2: Respondents' knowledge of partograph

Variables	Frequency (%), n = 239
Description of partograph	
Knew that a partograph is a graphical representation of the events in labour	192 (80.3)
Knew that a partograph is a chart containing both maternal and fetal information during labour	143 (59.8)
Components of partograph and their functions	
Knew that a partograph has 3 components (fetal condition, progress of labour, and maternal condition)	132 (55.2)
Knew that the fetal component enables the birth attendant to know the state of wellbeing of the fetus	160 (66.9)
Knew that the fetal component helps to prevent perinatal morbidity and mortality	144 (60.3)
Knew that the progress of labour component enables the birth attendant to know if a woman can achieve spontaneous vaginal delivery	129 (54.0)
Knew that the progress of labour component helps to reduce and prevent maternal and fetal morbidity and mortality	147 (61.5)
Knew that the maternal component enables the birth attendant to know the state of wellbeing of the mother in relation to labour	136 (56.9)
Knew that the maternal component helps to prevent maternal morbidity and mortality	129 (54.0)
Knew that the partograph provides evidence for making referral decisions	143 (59.8)
Knew that the partograph can be used as a tool for teaching and handling over of a woman in labour between shifts instead of voluminous paper writing	135 (56.5)
Knew that the fetal component contains information on:	
Fetal heart rate	166 (69.5)
Fetal descent	126 (52.7)
Knew that the maternal component contains information on:	
Maternal temperature	163 (68.2)
Maternal blood pressure	187 (78.2)
Alert and action lines	
Knew that the parturient needs close supervision if the graph crosses the alert line	140 (58.6)
Knew that the alert line serves as a guide for transfer of the parturient to a hospital with facilities for caesarean section	165 (69.0)
Knew that the action line indicates danger in the parturient and serves as a guide for critical assessment of the delay in cervical dilatation	155 (64.9)

Table 3: Utilization of partograph by respondents

Variables	Frequency (%)
Ever conducted labour (n = 239)	
Yes	193 (80.8)
No	46 (19.2)
Ever used partograph to monitor women in labour (n = 239)	
Yes	53 (22.2)
No	186 (77.8)
Common abnormalities ever detected and referred through use of partograph (n = 53)	
Prolonged labour	53 (100)
Obstructed labour	36 (67.9)
Fetal distress	27 (50.9)
Reason for not using partograph (n =186)	
Unavailability of partograph	122 (65.6)
Did not know how to monitor labour with partograph	41 (22.0)
Too busy	3 (1.6)
Not aware of its benefits	20 (10.8)

CONCLUSION

This study showed sub-optimal knowledge and poor utilization of partograph among primary healthcare workers in Sokoto metropolis, Nigeria. The state government should recruit sufficient number of qualified personnel to run the maternity units of the PHCs in the state, while the management of the respective hospitals should periodically train their staff on the use of partograph and ensure its constant supply in their maternity units.

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Conflict of interest

None declared.

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