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UTILIZATION OF THE PARTOGRAPH IN PRIMARY HEALTH CARE FACILITIES IN SOUTHWESTERN NIGERIA

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ABSTRACT

Objective: To assess knowledge about the partograph and its utilization among maternity care providers in primary health care in southwestern Nigeria.

Method: Two hundred and seventy-five maternity care providers comprising of 64 CHEWS (23.3%), 74 Auxiliary midwives (26.9%), 123 Nurses/midwives (44.7%) and 14 medical doctors (5.1%) were interviewed in primary health centres and private hospitals in three states in southwestern Nigeria using a multi-stage sampling strategy. Knowledge about the partograph and assessment of labour were assessed with an interviewer-administered questionnaire.

Results: About a quarter of respondents, 75 (27.3%) had received prior training on the partograph. Only 25 (9.1%) reported that the partograph was available in their labour wards. Knowledge about the partograph was poor; only 18 (16.0%) of all respondents correctly mentioned at least one component part of the partograph, 21 (7.6%) correctly explained function of the alert line and 30 (10.9%) correctly explained function of the action line. Prior training significantly influenced knowledge about the partograph ($\chi^2 = 49.2$; $p < 0.05$). Knowledge about assessment of labour was also poor: less than 50% of all respondents knew the normal duration of labour and just about 50% understood assessment for progress of labour.

Conclusion: The partograph is not utilized for labour management in Nigeria. Knowledge about partograph and assessment during labour is grossly deficient. Findings suggest poor quality intrapartum care. Effective interventions to improve labour supervision skills and partograph utilization are urgently required.

Key Words: Partograph, primary health care, maternity care providers, knowledge, utilization

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INTRODUCTION

The urgent imperative to improve maternal health is currently a major issue on the international scene. This recognition is expressed as one of the Millennium Development Goals¹. The need to improve maternal health is based on the huge number of maternal deaths estimated to be about 529 000 every year². The greatest burden of maternal mortality is in sub-Saharan Africa². Nigeria has one of the highest maternal deaths in the world.

Available evidence indicates that the majority of maternal deaths take place in hospitals³. Thus, concern has been raised about the quality of intrapartum care within health facilities. Delays in recognition and treatment of life-threatening complications and sub-standard care have been shown to contribute to maternal deaths⁴. Recent reports from Nigeria indicate that delay of treatment within health facilities is widely prevalent^{5,6}.

Prolonged obstructed labour continues to be one of the leading causes of maternal deaths in Nigeria⁵⁻⁸.

Yet prolonged and obstructed labour is preventable. Use of the partograph will prevent prolonged obstructed labour^{9,10} and will also avert unnecessary caesarean section¹¹. The partograph acts as an 'early warning system' in the early detection of cephalopelvic disproportion. Thus, it may assist referral decisions in outlying maternity units, intervention decisions in hospitals and ongoing evaluation of the effect of interventions¹².

It is recommended for use at all levels of health care. However, the partograph is most suitable for use in health institutions with limited obstetric personnel manned by midwives or inexperienced medical officers¹³. The partograph is cost-effective^{10,14}. When utilized as part of labour surveillance in low income countries, the partograph will reduce early neonatal deaths by 40%¹⁴. Most of the reported associations with the partograph are derived from observational studies, therefore Hofmeyr¹⁵ cautions that evidence of benefit of the partograph is still limited.

Nigeria operates a three tier national health care system. Its reproductive health policy is implemented in the context of primary health care.

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Consequently, the bulk of maternity care is provided at the primary health level. Given the crucial role of primary health care in maternity care and the value of the partograph in reducing maternal morbidity and mortality and by extension improving perinatal wellbeing, this study was designed to evaluate knowledge and practice of health care providers in this setting regarding the partograph.

MATERIALS AND METHODS

This was an exploratory study conducted among maternity care providers at the primary care level in Ogun, Oyo and Osun states in south-western Nigeria. The study design was descriptive and cross-sectional. It was coordinated by researchers at the Departments of Obstetrics and Gynaecology of the Federal Medical Centre, Abeokuta, University College Hospital, Ibadan and LAUTECH Teaching Hospital, Osogbo respectively in these states. In public health facilities, the bulk of primary health care is provided in primary health centres which are supervised by local governments. We employed multi-stage sampling technique. In each state, two local governments (one urban, and one rural) were selected. The local government in the capital city which accommodates the seat of the state government was selected. Another local government based in a rural area was randomly selected. This strategy was to take care of potential disparities in health infrastructure and personnel distribution. Using a sampling frame derived from the list of private health care facilities and primary health centres obtained from the Ministry of Health in each state, a systematic random sampling was done to select 5 primary health centres and 10 private health facilities in each local government.

In each health facility, systematic sampling was employed to select the sample to be interviewed ensuring adequate representation for doctors and nurses/midwives; we planned to interview at least 5 doctors and 5 nurses. When the number of each cadre of maternity care providers was less than the required number, all the available personnel were interviewed.

All health care providers who supervise care during labour were eligible to participate in this study including Community Health Extension Workers (CHEWS) and Auxiliary midwives. CHEWS are individuals with minimal education who have received some basic formal training in conducting labour and deliveries; they are employed in both public and private health facilities at the primary level of care. Auxiliary midwives also have minimal education but have received informal training from Physicians and midwives to conduct labour and delivery; they are employed in private health

facilities.

Being an exploratory study, we aimed to interview as many health care workers as the sampling strategy would permit.

The study instrument was a semi-structured questionnaire containing 26 questions. Reliability and validity of the study instrument were ensured by adequate review of literature^{12,16,17}. Responses to questions were varied: correct answers to some questions were circled from a list of options, some questions were open-ended while responses to other questions were 'yes' or 'no' as appropriate. The instrument was further pre-tested in a primary health centre on 20 maternity care providers prior to commencement of the study and necessary adjustments made. It took about fifteen minutes to complete the questionnaire.

The questionnaire documented the respondents' biodata, professional status and experience. Specific questions explored the availability of the partograph in the health facility, respondents knowledge about the partograph and also his/her use of the partograph. Respondents' knowledge score was determined by converting the number of correct component parts or items recordable on the partograph listed into a percentage (given a maximum of 10 items). Knowledge was further evaluated by requesting respondents to explain the functions of alert and action lines.

The questionnaires were administered by research assistants who had received prior training to familiarize them with the instrument before commencement of data collection. During data collection, progress was reviewed and research assistants re-trained periodically in each coordinating centre.

Ethical approval was given by the ethical review committees of the coordinating centres. Permission to conduct the study was also obtained from the supervising authorities of the selected health facilities. A written informed consent was also obtained from each participant.

Data entry and analysis were performed with the EPI-INFO 2002 software. We utilized the chi-square test, Fisher's exact test and analysis of variance as appropriate. Two sided significance level was put at less than 5%. The study methodology had been previously described elsewhere¹⁸.

RESULTS

Questionnaires were administered in 48 private hospitals and 31 primary health centres to 275 maternity care providers in the three states. Respondents comprised of 74 Auxiliary midwives (26.9%), 64 CHEWS (23.3%), 123 nurses/midwives (44.7%) and 14 medical doctors (5.1%). There were 163 (59.3%) respondents from

private health facilities and 112 (40.7%) respondents from primary health centres. All respondents affirmed that they supervised women during labour. The partograph was reported to be available in the labour ward of the health facility by 25 (9.1%) respondents. This was evenly reported in the two settings of care: 13 (4.7%) in primary health centres and 12 (4.4%) in private hospitals.

The partograph was employed in monitoring labour by only 23 (8.4%) respondents: 8 (2.9%) in primary health centres and 15 (5.5%) in private hospitals. Of these 23 respondents who utilize the partograph to monitor women in labour, 16 (69.6%) reported having previously referred women on account of information obtained from the partograph. Knowledge about assessments that could be made with the partograph was generally poor across the two settings of care as illustrated in Table 1.

Only 44 (16.0%) respondents could correctly mention at least one component part of the partograph.

More respondents from private health facilities 26 (9.5%) correctly mentioned at least one component of the partograph compared with respondents from primary health centres, 18 (6.6%); but this difference did not reach statistical significance ($\chi^2 = 0.0007$; $p > 0.05$). The correct number of components of the partograph mentioned by respondents was awarded a percentage score. The median score by CHEWS, Auxiliary midwives and trained nurses/midwives was 0% while the median score for medical doctors was 15.0%. Only 21 (7.6%) respondents could correctly explain the function of the alert line. More respondents from private health facilities 17 (6.2%) correctly explained the function of the alert line than those in primary health centres (4, 1.5%). This difference was statistically significant ($\chi^2 4.43$; $p < 0.05$). Only 30 (10.9%) respondents could correctly explain the function of the action line. Although more respondents in private hospitals 20 (7.3%) correctly explained function of the action line than respondents from primary health centres - 10 (3.6%), this difference was not statistically significant ($\chi^2 = 0.76$; $p > 0.05$).

About a quarter 75 (27.3%) - of all respondents admitted to having received prior training on the partograph. Twice as many respondents in private hospitals 51 (18.6%) had been trained on the use of the partograph compared with primary health centres 24 (8.7%). The difference was however not statistically significant ($\chi^2 = 3.25$; $p > 0.05$). Respondents with previous training on the partograph were significantly more likely to correctly mention at least one component part of the partograph ($\chi^2 = 49.2$; $p < 0.05$).

We also evaluated respondents' knowledge about

assessment of women during labour. Their knowledge about the assessment of women in labour was deficient as shown in Table 2. Only about half of all respondents in the two settings of care could satisfactorily describe parameters for assessing progress of labour and less than half knew the normal duration of labour.

Table 1: Correct Knowledge of Assessments Made on the Partograph.

	Primary Health centre		Private Hospital	
	N	%	n	%
Prolonged labour	49	43.8	59	36.2
Obstructed labour	45	40.2	44	27.0
Poor progress of labour	44	39.3	45	27.6
Inefficient uterine contraction	44	39.3	45	27.6
Satisfactory progress of labour	29	25.9	51	31.3
Need for augmentation of labour	30	26.8	45	27.6
Need for caesarean section	46	41.1	42	25.8

Table 2: Correct Knowledge about Assessment during Labour.

Characteristic	Primary Health centre		Private Hospital	
	n	%	n	%
Normal frequency of uterine contractions	61	54.5	76	46.6
Normal duration of uterine contractions	38	33.9	64	46.6
Assessment of uterine contractions	50	44.6	63	38.7
Assessment of progress of labour	57	50.9	83	50.9
Normal duration of labour	52	46.4	76	46.6

DISCUSSION

All the respondents interviewed cared for women in labour in private and primary health centres. These two settings of care provide the bulk of maternity service in Nigeria. Just about half of all respondents knew how to assess progress of labour while less than half understood the normal duration of labour. These findings underscore the value of partograph in labour management among maternity care providers. Sadly however, the partograph was available in less than one-tenth of all health facilities surveyed; in reality it was available in less than 5% of health facilities in either primary health centres or private hospitals.

The selected health facilities and maternity care providers in the three states were representative of health institutions and care providers in these three states given our sampling technique. Few studies have addressed the role of the partograph in labour management in developing countries.

Findings from this study indicate that very urgent steps are required to improve quality of intra-partum care if the ugly trends in maternal and perinatal outcomes are to be addressed earnestly. Reports on quality of intra-partum care within sub-Saharan Africa reflect low utilization of the partograph and overall poor quality of care^{19,20}.

Low utilization of the partograph had also been reported in previous surveys among health care professionals in peripheral units in Nigeria^{16, 17}. The utilization rate in this study (8.4%) is similar to the rate of 9.8% reported by Oladapo et al¹⁷. That study was conducted in one of the states involved in the present study. It is crucial that emphasis be placed on the quality of partograph use as Delvaux et al²⁰ drew attention to poor documentation on the partograph while Christensson et al¹⁹ showed that in health facilities where the partograph was available, it was rarely utilized for the individual parturient woman. Thus we agree with Oladapo et al¹⁷ on the need for continuous reinforcement and quality assurance after its implementation as stand-alone training may not be the solution. About a quarter of respondents in this study and almost one third in the Oladapo et al¹⁷ study admitted to previous training. Evidence of positive impact of prior training on knowledge reported by Oladapo et al¹⁷ is also confirmed in this study. However, such training did not translate to utilization of the partograph. Therefore mechanisms are required to support consistent use.

There is evidence to show that the partograph can be effectively used in developing countries. A recent audit of partograph use in a Nigerian tertiary hospital revealed universal application for all parturient women, satisfactory recording of information and its significant influence on decision-making²¹. Previous reports also showed that partograph was more commonly employed in tertiary care¹⁸ and by medical doctors¹⁹. It is ironical that it is not utilized in those settings where it is most needed; a sad reflection of the complex tragedy of maternal mortality in developing countries. However, midwives have been reported to be positively disposed to charting documentation on the partograph²². Therefore attention should be directed at effective scaling-up of partograph use in developing countries.

Poor knowledge on the use of the partograph reported in this study conforms to previous findings¹⁶⁻¹⁸. Urgent steps must be implemented to

train maternity care providers on the use of partograph and supervise its consistent application. Introduction into public health facilities may be easier; however, implementation of strategies for its effective utilization in private health facilities will be challenging and therefore should be well coordinated. The higher proportion of respondents from private health facilities in this study is an indication of the relative contribution of the private sector to maternity care in Nigeria, thus its significance in reproductive health care. Measures aimed at improving intra-partum care must therefore incorporate the private sector if significant impacts are desired.

Low utilization of the partograph is another example of the general lack of uniform standards in reproductive health care with the attendant poor reproductive health outcomes in developing countries. Ever since the issue of maternal mortality was recognized as a major public health problem, the unbooked woman with prolonged and obstructed labour had been recognized as a major risk factor for maternal death. Our findings confirm the potential contribution of poor quality intra-partum supervision leading to delays within health facilities and consequent morbidity and mortality as previously reported⁴⁻⁶.

Given these findings we call on policy makers and midwifery and obstetric professional associations to recognize this issue as a national emergency and map out effective short-term and long-term solutions.

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