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Availability and utilization of partogram by health care providers in labour wards of the Bamenda health district, Cameroon

Eyvonne Ngequih Tumasang Verla, Anderson Doh, Robinson Mbu, James Ndipowa, Sama Dohbit, Peter Nji, Christian Wanka & Mary Bi Suh Atanga*

Department of Nursing and Midwifery, Faculty of Health Sciences, University of Bamenda, Cameroon

*Corresponding Author: Dr Atanga Mary Bi Suh

Cell phone: +237 677 23 97 37

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Abstract

The partogram is an inexpensive tool which can provide a continuous pictorial overview of labour and is essential to monitor and manage labour. The success of its use requires that it is available in the first place and secondly that it is being put into use. In order to be successful, the partogram must be used in the continuous monitoring of labour (observations and documentations). Without these, monitoring of labour becomes incomplete hence problems may be identified late, resulting in complications which may cause maternal and neonatal

morbidity and mortality. Thus, this study argues that, early detection of abnormal progress and prevention of prolonged labour by the use of the partogram can significantly improve the outcome of labour. The study identified the working experiences of the health care providers; attitudes (desire for routine use, desire for further training, and awareness of the usefulness); practice (Frequency of utilization, availability, and correlation of use and working experience); factors that hinder partogram use; and number of women in labour monitored with the partogram.

A cross sectional descriptive study was used involving three tools, namely: self-administered questionnaire, record review and an interview guide.

Major findings indicated among the public health facilities studied, some were not using the partogram. Only 34.8% of the files reviewed included filled partograms, and they were partially filled, while 3.6% of the filled partograms were well filled. Statistical relationships were found between availability and utilization of the partogram.

Thus, the implementation of the partogram in health facilities where they are not being used, availability of the partogram in labour wards and capacity building were recommended for effective use of the partogram.

Keywords: Labour, monitoring, partogram, availability, utilization, hindering factors, maternal mortality

Introduction

The partogram is a tool that enables birth attendants to record maternal and foetal observations simply and pictorially [1]. Besides, its routine use, it aids early detection of abnormal course of labour and also, assures the best possible maternal and perinatal outcome [2]. The partogram serves as an early warning system and assists in early decision on transfer, augmentation and termination of labour. Furthermore, it increases the quality and regularity of all observations on the foetus and the mother in labour, and aids early recognition of problems [3,4,5]. However, even after the WHO simplified the partogram to make it more user-friendly in the year 2000, the partogram is still rarely used in low-resource areas, and, when actually used, it is rarely interpreted correctly [6]. Referral systems for women in labour who experience complications are often non-existent or inadequate. Trained labour and delivery

personnel who are competent in the use of the partogram are in short supply. The tool itself may present difficulties for health providers because they lack the underlying knowledge and skills that it requires [7] and be inexperienced. Maternal mortality is unacceptably high [8]. About 800 women die from pregnancy- or childbirth-related complications around the world every day [9]. In 2010, 287 000 women died during and following pregnancy and childbirth [9]. Almost all of these deaths occurred in low-resource settings, and most could have been prevented [8]. The majority of maternal deaths and complications attributable to obstructed and prolonged labour could be prevented by cost-effective and affordable health interventions like the use of the partogram [10].

Types of partograms

The world Health Organization (WHO) partograms are the best known in most countries with three types published between 1990 to date [10].

Composite Partogram

This is the first of the partograms; it includes a latent phase of 8 hours and an active phase starting at 3 cm cervical dilatation. It has an alert line with a slope of 1 cm per hour which commences at 3 cm dilatation and the action line is 4 hours to the right of and parallel to the alert line. It also provides space for recording descent of the foetal head, indicators of maternal and foetal well-being and medications administered [11].

Modified Partogram

The WHO modified the partogram for use in hospitals in the year 2000. In the amendment, the latent phase was excluded and the active phase commences at 4 cm dilatation with the other features remaining the same as in the composite. The reasons for excluding the latent phase were that interventions are more likely if the latent phase is included and because staff reported difficulties in transferring from latent to active phase. The choice of 4 cm was made to reduce the risk of interventions in multiparous women with patulous cervixes who were not yet in labour. A study of the modified WHO partogram in Ethiopia concluded that

labour could be managed without the latent phase being plotted on a partogram [12].

Simplified Partogram

The WHO further modified the partogram for the third time, this time for use by skilled attendants in health centres. This simplified partogram is colour coded. The area to the left of the alert line in the cervicograph is coloured green, representing normal progress. The area to the right of the action line is coloured red, indicating dangerously slow progress in labour. The area in between the alert and action line is coloured amber, indicating the need for greater vigilance. In a cross over trial in Vellore, India, the composite partogram was rated as less user-friendly than the simplified partogram [13].

Some other Partograms

A simplified round partogram was compared with the rectangular or composite version WHO partogram in Seno province, Burkina Faso, West Africa. The most common errors in the utilization of the composite WHO partogram were the incorrect recording at the initial examination and the transition from latent to active phase which is largely avoided with the round partogram. The round partogram is not widely used. A second-stage partogram has been described. This is on the basis of descent and position of the foetal head. Normograms have been developed for nulliparous and multiparous women. The best scores are associated with occipito-anterior presentation and station below +1cm.

An electronic partogram (www.epartogram.eu) is currently being evaluated. Recently an Indian partogram has been introduced; it is also called paperless partogram. In the paperless partogram model, birth attendants (Bas) calculate 2 times, an alert Estimated Time of Delivery (ETD) and an action ETD. The alert calculation uses Friedman's widely accepted rule that the cervix dilates 1cm/hour while a woman is in active labour. The birth attendant simply adds 6hrs to the time at which the woman becomes dilated to 4cm to find the Alert ETD (when cervical dilatation is at 10cm). The BA then adds 4 hours to the Alert ETD to get the Action ETD. Both ETDs should be written in big letters on a woman's case management sheet, with

the Action ETD circled in red [14]. Cited advantages of this paperless partogram are: It is simple and easy to use, not bothering about complex curves and graphs, reduces the hassles of paperwork, ensures safe delivery with precise and timely intervention [14].

The WHO partogram model

Principles

The WHO model partogram was devised by an informal working group, who examined most of the available published work on partograms and their design [11,15]. It represents in some ways a synthesized and simplified compromise which includes the best features of several partograms. It is based on the following principles: The latent phase of labour should not be longer than 8hrs. However in the new model the latent phase has been removed and plotting on the partogram begins in the active phase when the cervix is at least 4cm dilated to make it simpler and easier to use [16].

During the active phase, the rate of cervical dilatation should not be slower than 1cm/hr. A lag time of 4hrs between a slowing of labour and the need for intervention is unlikely to compromise the foetus or the mother and avoids unnecessary intervention. Vaginal examinations should be performed as infrequently as is compatible with safe practice (once every 4 hours is recommended).

Components of the partogram

The modified WHO partogram [11, 15, 16], consist of the following components: patient information, the foetal condition, the labour condition, maternal condition. The patient information for example should comprise of: name; gravida, para, hospital number, date and time of admission and time of ruptured membranes all written at the top of the graph.

Statement of problem

Complicated deliveries are more detrimental because they cause severe psychological and physical harm to women; impute serious economic and social changes as well as adverse maternal and foetal outcomes. Managing complications is expensive for both the mother and

the institution. The partogram is an underutilized tool for the prevention of prolonged or obstructed labour, which is a significant cause of reproductive morbidity and mortality [17]. The WHO recommends the universal use of the partogram, based on the findings of its multi-centre trial in Southeast Asia indicating improved labour outcomes [18]. Most partograms have three distinct sections where observations related to maternal condition, foetal condition and labour progress are recorded [19]. Besides, a partogram has clear demarcations which, if arrived at or exceeded clearly indicate the need to address existing or imminent complications like poor progress of labour, prolonged labour, foetal distress, and in the worst cases, obstructed labour and ruptured uterus. As mentioned earlier, the detection of prolonged labour greatly contributes to the prevention of obstructed labour and other related complications such as postpartum haemorrhage (PPH), ruptured uterus, puerperal sepsis and obstetric fistula [20]. Yet after more than 50 years of training and investment in the partogram in low-resource settings, the implementation rates and provider competencies remain low [17]. Sometimes the attitudes and practices of health care providers play a role in the availability and utilization amidst other hindering factors which were investigated in this study

Questions

1. Are partograms available in the health facilities being studied?
2. What is the perception of BAs with regard to the use of the partogram?
3. To what extent is the partogram being used and completed in the selected public health facilities?
4. What are the factors limiting the use of the partogram?

Objectives

1. To assess the availability of the partogram in the health facilities under study.
2. To identify the perception of BAs with regard to the use of the partogram.
3. To assess the extent to which the partogram is being used and completed in the selected health facilities.
4. To identify the factors limiting/hindering the use of the partogram.

Materials and methods

The descriptive cross sectional study approach was used, and all district hospitals in the study site were considered. A consecutive sampling was used to then choose the particular district hospitals that were used in the study. The study population was made up of doctors, reproductive health nurses, midwives, nurses and other personnel who were attending to women in labour at the sites. For inclusion criteria, the study included all the personnel working in the delivery and postpartum wards. They were those who participated in the follow up and delivery of pregnant women who accepted freely to participate in the study. Those not included were students on internship, permanent health personnel working in the delivery room but who had nothing to do with women in labour and those who refused to participate. The data collection process began with a pilot study (pre-test) which was used to check the instruments for reliability and to validate them. Informed consent was obtained before the questionnaires were distributed and each participant was expected to complete and drop it in a box that was kept in the office of the service head. The filled questionnaires were collected after two weeks. Interviews were carried out with the matron of each labour ward using an interview guide. Records were reviewed to see how the partograms were filled using a checklist in each of the health facilities. The data was then analysed using the EPI Info 3.3.2 and X^2 test. The quantitative variables were presented in means and standard deviations and qualitative variables were presented in frequency and percentages. The p value was set at $p < 0.05$ for any statistically significant relationships.

Results

The years of working experience were considered as tools often required continuous use for the practice to be instilled in practitioners. These years matched to the kind of worker or professional (table 1)

Table 1: Years of working experience of Participants according to their profession

Years of experience	GPs	MW	SRN	RHN	NA	TOTAL
< 5 years	2	1	18	1	9	31
5-10 years	1	1	7	3	7	19
11-15 years	0	1	2	9	2	14
16-20 years	0	2	1	0	0	3
> 20 years	0	0	3	5	1	9
TOTAL	3	5	31	18	19	76

All the GPs had working experience of less than 10yrs. Meanwhile 9 of the 18 RHNs had experience of more than 10yrs and 4 of them with experience of less than 10yrs. Two (2) of the MW had experience of more than 15yrs. Out of the 31 SRN who responded, 18 of them had experience of less than 5yrs and 7 of them had experience between 5 to 10yrs. 16 of the NAs had experience of 10 and below. Generally majority of the participants had experience of less than 5 yrs.

Participants were made to state whether or not they desire to use the partogram as a tool during the labour and delivery process (checking attitude on partogram use) and responses were as on figure 1 below.

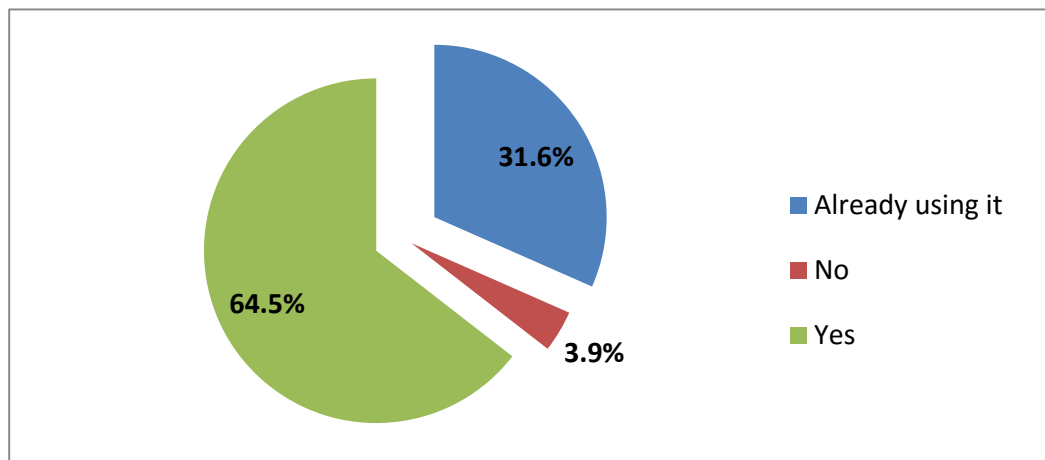


Figure 1: Desire for routine use of partogram

Among the respondents, 31.6% of them were already using the partogram routinely, 64.5% desire to be using it routinely and 3.9% do not want to use the partogram routinely. In the same line, the desire for further training on the partogram use was assessed (Fig 2).

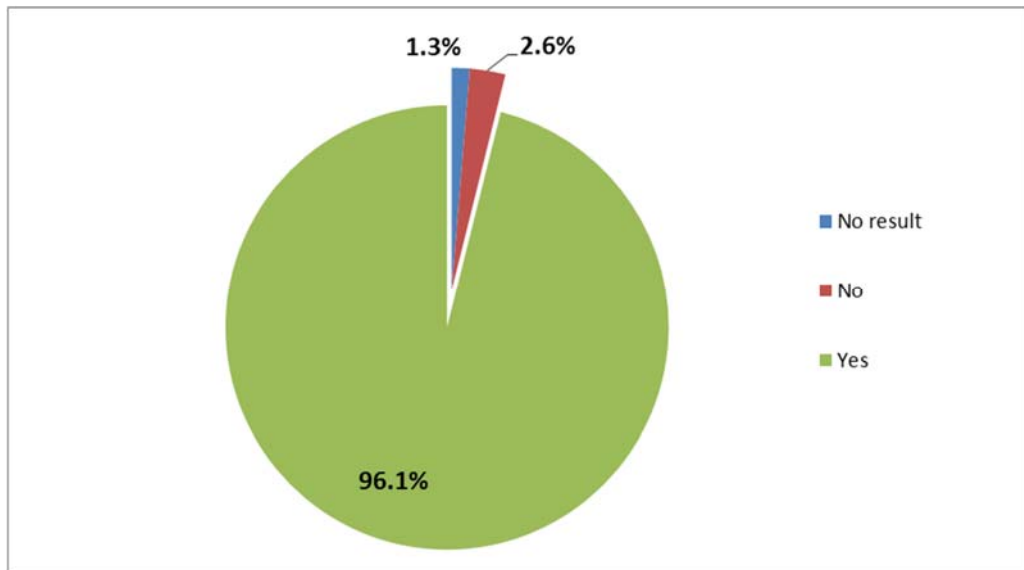


Figure 2: Desire for further training

Ninety six point one percent (96.1%) of participants desire further training on the use of the partogram while 2.6% do not desire further training with 1.3% of the participants not responding. The assessment on the usefulness of partogram was as on figure 3 below,

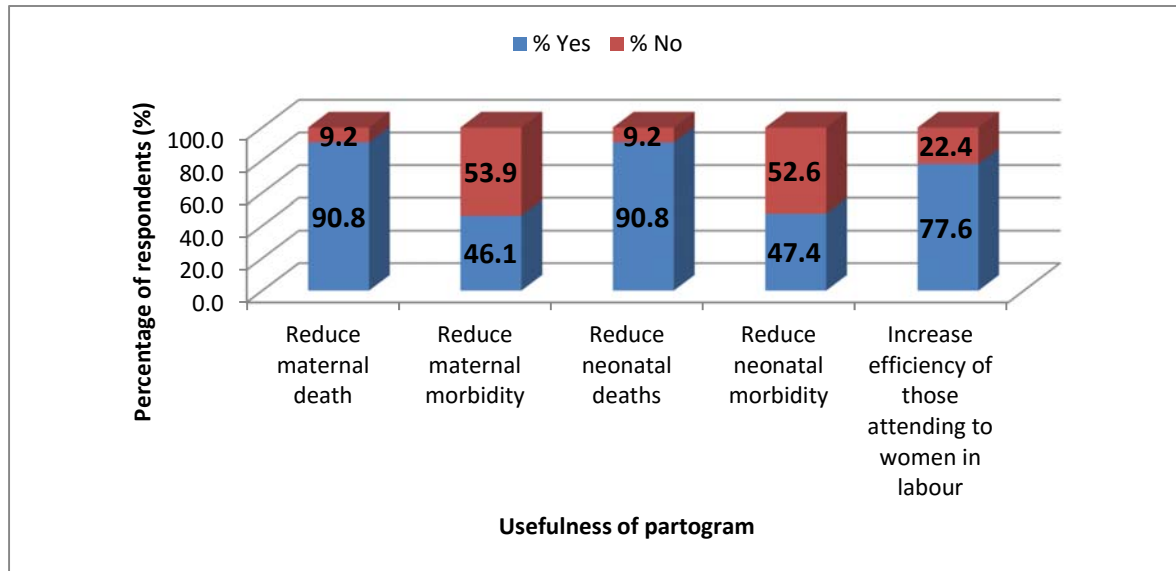


Figure 3: Usefulness of the Partogram.

Health personnel found the partogram most useful in reducing maternal and neonatal deaths (90.8%). Of these, 77.6% found the partogram useful in increasing the efficiency of those attending to women in labour.

Since three levels of care were used, the frequency of utilization of the partogram is as below (fig 4)

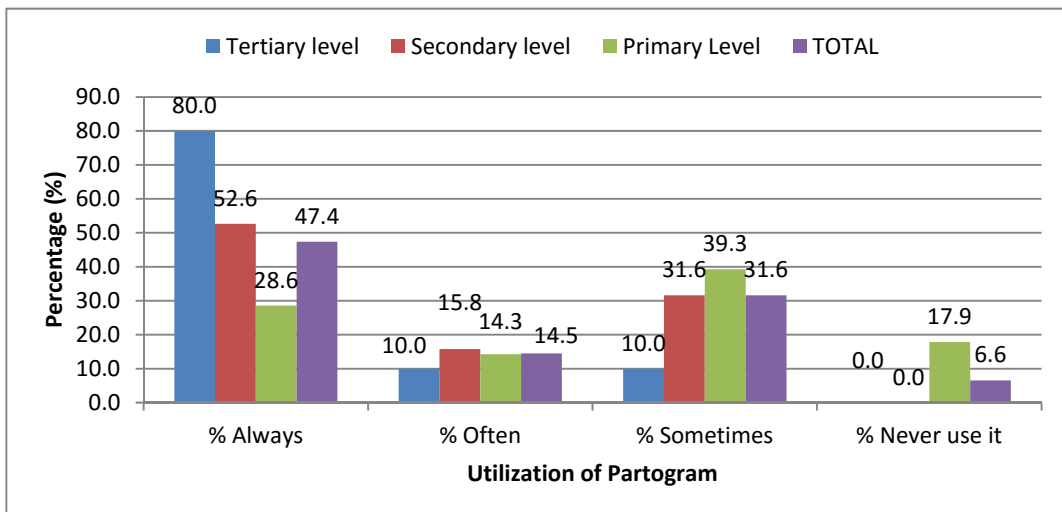


Figure 4: Frequency of Utilization of partograms in the various levels of care.

Three (3.9%) participant had never seen a partogram before and 5 (6.6%) had never used it. The use of partogram was reported more significantly in tertiary level than at primary level ($X^2=12.7, df=6, p=0.047$) with 80.0% of BAs at the tertiary level reporting always using a partogram compared to 28.6% of BAs of primary level of care. However, BA only one (17.9%) reported the non use of the partogram at the primary level. On the other hand, availability of the tool was as on figure 5 below

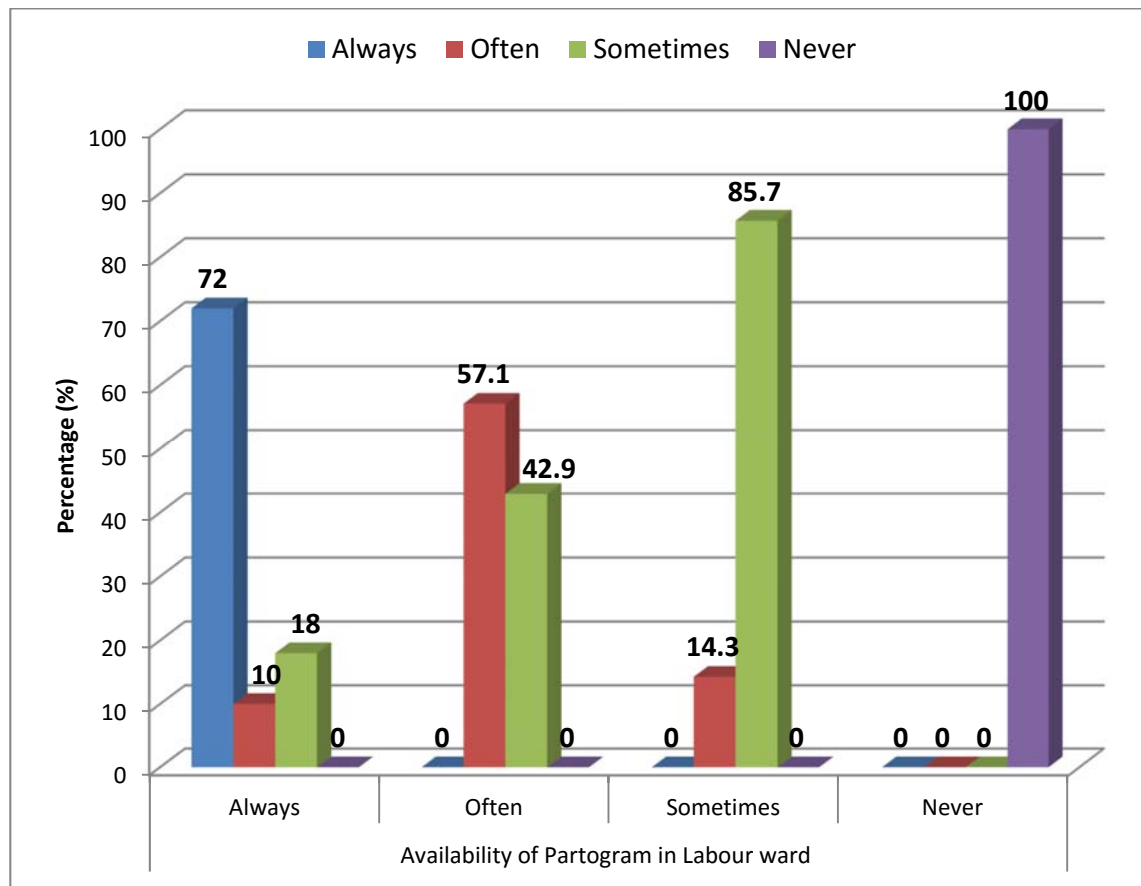


Figure 5: Availability of partogram against utilization in health facilities

There was a statistically significant relationship between availability and utilization of partogram in health facilities ($X^2=117.7136, df=9, p<0.0001$) with the highest utilization of partogram being amongst those who reported having a partogram at all times (72%).

The use of the partogram was correlated with the years of working experience as on figure 6.

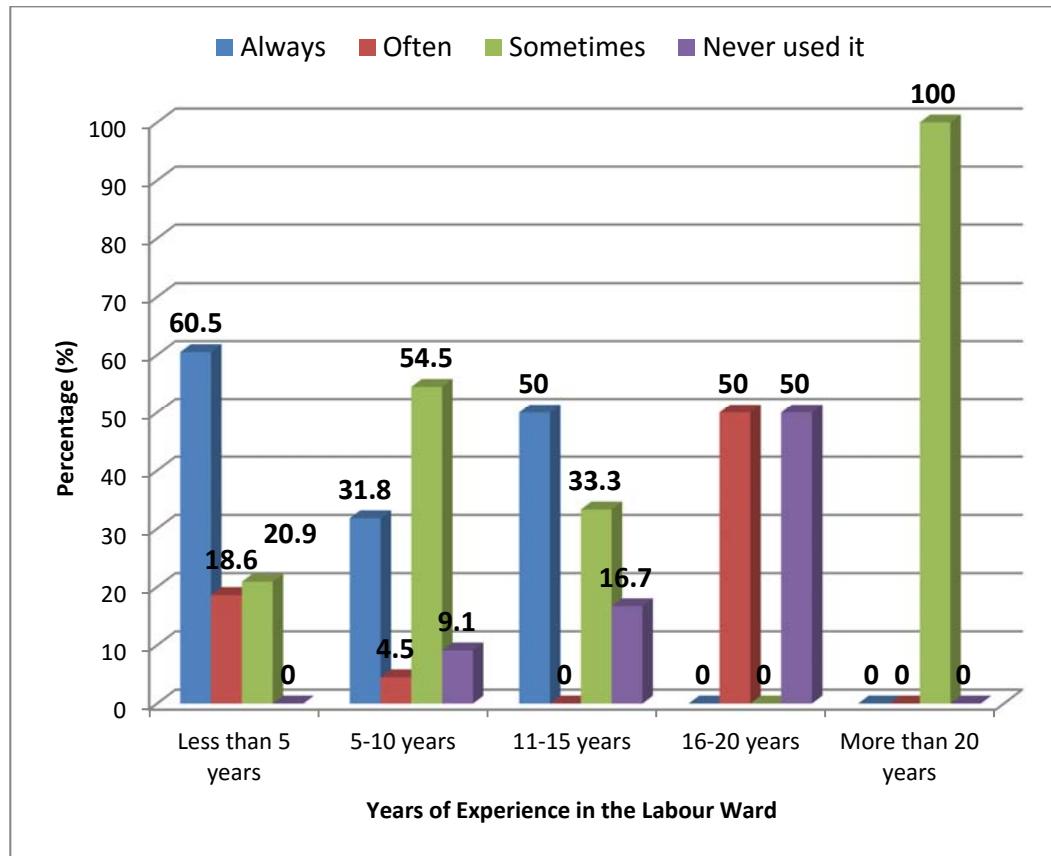


Figure 6: Correlation of utilization of partogram with years of experience

There was an inverse significant relationship between years of experience in the labour ward and frequency in utilization of partograms ($X^2=39.0309$, $df=12$, $p<0.0005$) 60.5% of those with less than 5 years of experience reporting always using a partogram compared to 0.0% of those with more than 20 years of experience.

The factors hindering the use of the partogram were found to be non availability, shortage of staff among others (fig 7)

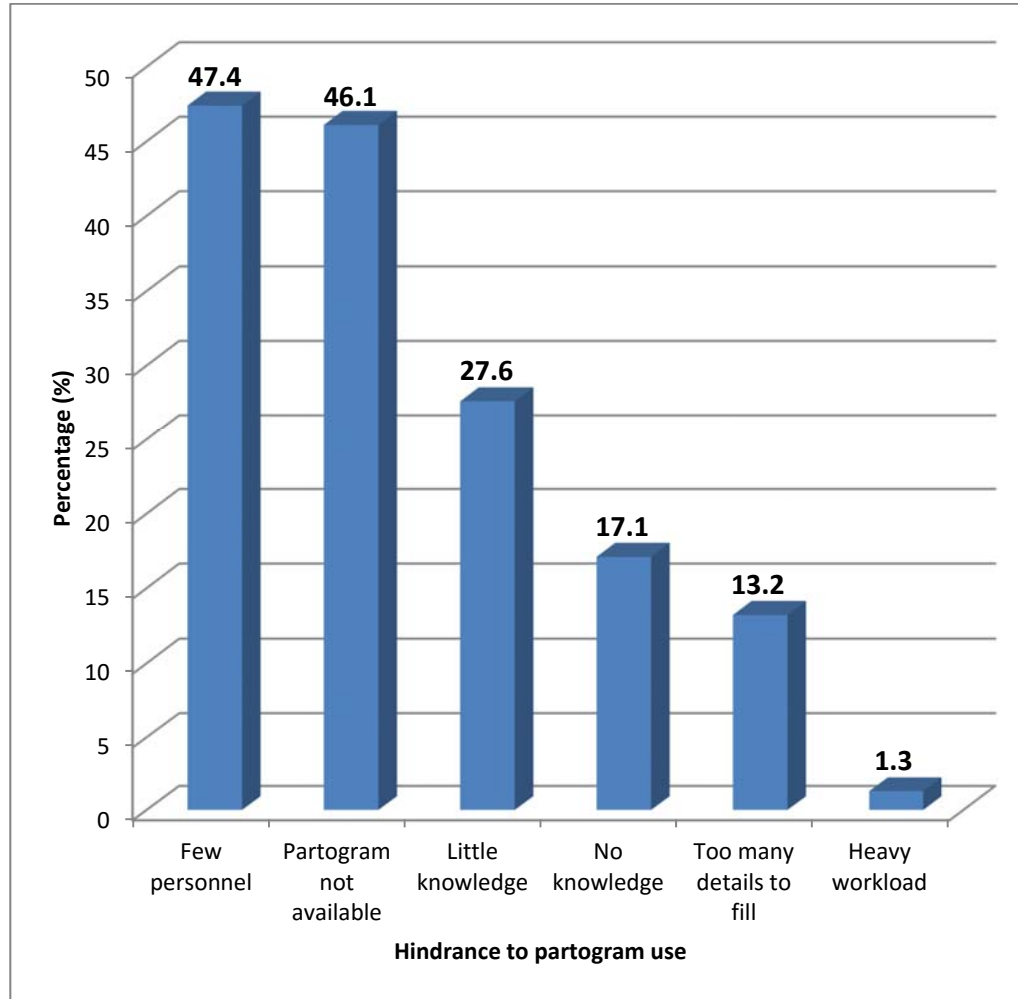


Figure 7: Factors that hinder partogram use

Overall, few personnel was identified as the highest hindrance to partogram use (47.4%) followed by non- availability of partograms (46.1%). These factors were found to vary and so are as on table 2 below.

Table 2: Showing factors that hinder the Use of Partogram in various Health Facilities

e to partogram use		BAFDH	BALDH	SDMCA	SDMCM	SDMCN	SDMCP	RHB	SDH	TDH
anel	Number	8	2	2	3	2	1	7	8	3
	%	66.7	28.6	40	60	14.3	25	70	88.9	30
not available	Number	1	1	5	3	10	1	9	4	1
	%	8.3	14.3	100	60	71.4	25	90	44.4	10
ledge	Number	5	3	0	3	0	1	3	0	6
	%	41.7	42.9	0	60	0	25	30	0	60
dge	Number	1	0	0	4	2	1	3	0	2
	%	8.3	0	0	80	14.3	25	30	0	20
details to fill	Number	0	1	0	4	0	0	3	2	0
	%	0	14.3	0	80	0	0	30	22.2	0
kload	Number	0	0	0	0	1	0	0	0	0
	%	0	0	0	0	7.1	0	0	0	0
y	Number	0	0	0	0	0	0	1	0	0
	%	0	0	0	0	0	0	10	0	0

Document Review

Documents were reviewed for number of women whose labour was monitored with the use of the partogram and compared with the health facility (table 3, fig 7)

Table 3: Comparing number of women in labour to number of women monitored with partograms in health facilities

Health Facility	Months of file review	Number of women in labour	No of files with filled partograms	% of files with filled partograms
BAFDH	Aug-25toSept 24	17	17	100.0%
TDH	Aug25 toSept24	42	34	81.0%
RHB	Aug 25 to Sept 24	156	93	59.6%
BALDH	Jul 25 to Sep24	16	6	37.5%
SDMCM	March 25 to Sept 24 2013	60	15	25%
SDMCN	Aug 25 to Sept24	140	18	12.9%
SDH	Aug25to Sept24	78	10	12.8%
SDMCA	Aug25 toSept24	20	0	0.0%
SDMCP	Aug25toSept24	25	0	0.0%
TOTAL		554	193	34.8%

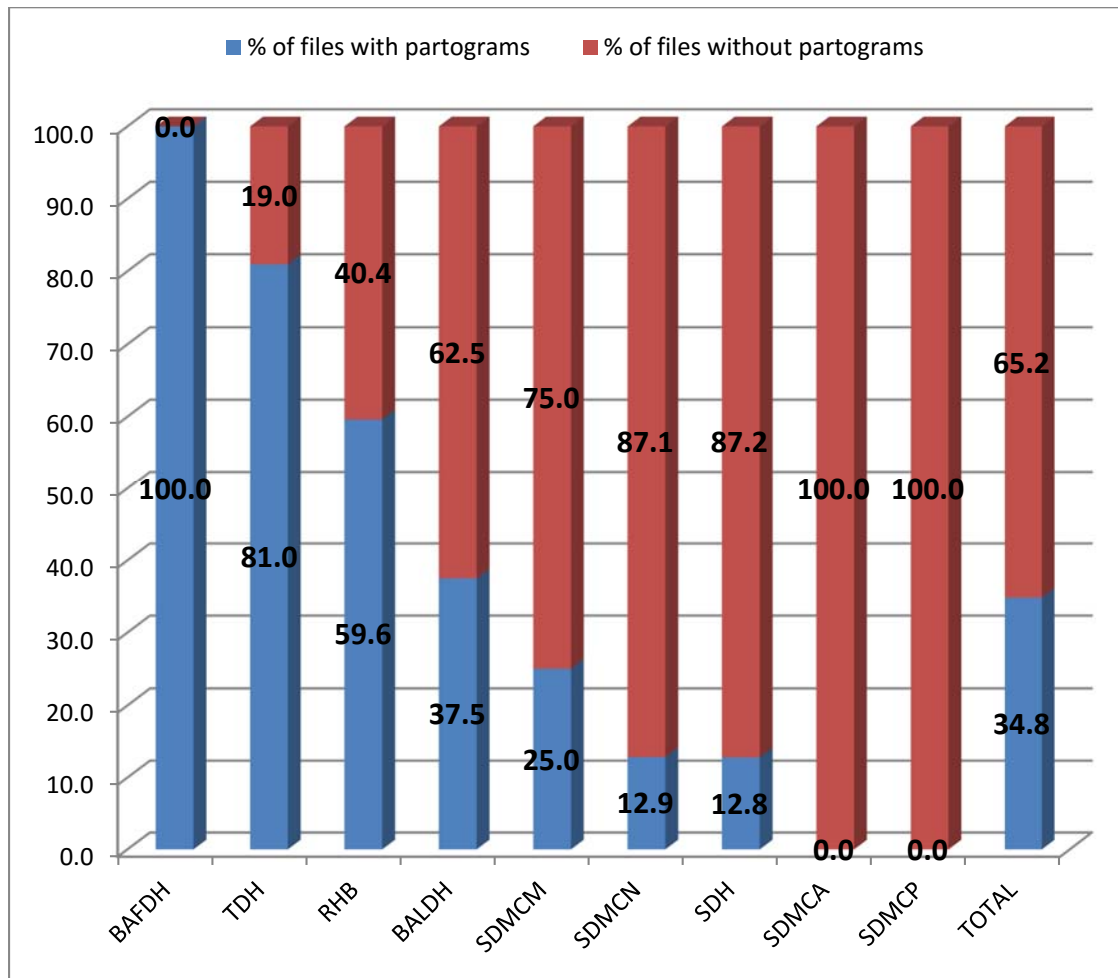


Figure 7: Comparing number of women in labour to number of women monitored with partograms in health facilities

BAFDH had the highest level of utilization with all 17 (100%) partograms filled for women in labour. RHB had the highest number of women in labour (156) and 93 (59.6%) were monitored with partograms far better than SDH that monitored only 10 (12.8%) of the 78 parturient. In SDMCA and SDMCP, partograms were not used.

The use of the partogram was scored showing the facility where the tool was completely or partially filled (fig 8)

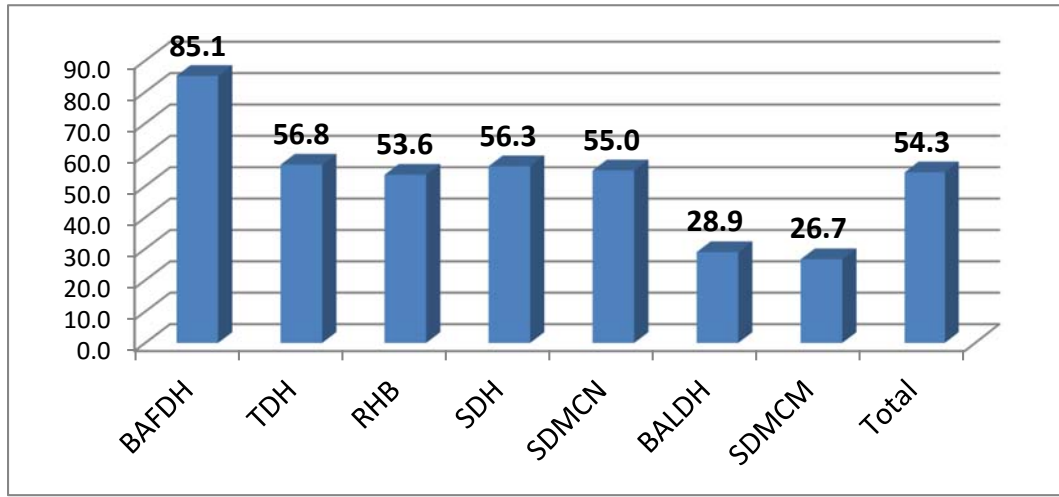


Figure 8: Scoring of health facilities performance on partogram filling

From the above figure, BAFDH tops the chart with proper filling of partogram indicators (85.1%) and SDMCM the least with only 26.7% of indicators on the partogram filled. The overall score for filled partograms was 54.3% but only 7(3.6%) of the partograms were filled to meet the standard.

Discussion

The utilization of the partogram and the quality of its use need to be assessed, and the obstacles for use need to be recognized as a first step to overcome the adverse obstetric outcomes.

The findings in this study showed that, out of the public health facilities being assessed two of them were not using the partogram while seven of the facilities were using the partogram; this is different from that of Dohbit et al [2], Ogwang et al [27] where all the health facilities had and were using partograms. It is a surprise that at the time when there are general efforts to

reduce maternal and neonatal morbidity and mortality, there are still BAs that do not use the partogram. This is a call for concern especially as the burden for maternal mortality in Cameroon remains high [28].

This study noted an overall partogram utilization rate of 34.8%. This implies that the partogram is being underutilized at the study site. Results of this nature were also obtained in other studies [2, 4, 9]. There is need therefore for a better strategy of training that will not only pass on the knowledge but compel utilization. The use of partogram was reported more significantly in tertiary level than at the primary level 78% and 40% respectively for participants who always use the partogram. This is similar to the results obtained by Fawole et al [4], but different from that of Yisma et al [21] where the use of the partogram was reported more in the primary level of care. This can be due to the fact that at the tertiary level of care there are more qualified personnel making it possible for supervision to take place though from interview conducted this was not very obvious as captured from this response;

“There is some sort of supervision but it is not really effective.”

However, if graded by health facility, BAFDH and TDH (secondary level) had a higher level of utilization, 100% and 81.0% as against 59.6% in the RHB (tertiary level).

Supervision might just be the likely key to increase utilisation of the partogram: as captured from the interview:

“I can say a big thank you to my boss who checks the partograms during rounds and obliges me to do the same on the days that he does not come for rounds. As such problems are identified on the filled partograms and corrective measures taken.”

It is also worth noting that this was the only facility with partograms in all the files. This was not the case with another facility where the interviewee lamented:

“Our doctor does not know how to use the partogram and he does not want to know since he says he does not see the need for it, so whatever we are doing is just because of the seminars that I have attended. This makes the use of it here to be my personal affair.”

There was a statistically significant relationship between years of experience, availability of the partogram and utilization of the partogram. Respondents with working experience of less than 5 years reported the highest percentage of partogram utilization (40.8%). This is rather unfortunate because the partograms are not available most of the time and birth attendants are likely to use the partogram less with increasing years of experience. It seems the more they work in the labour ward the more they think they can function well without the partogram.

There was a statistically significant relationship between availability and utilization of partogram in health facilities ($X^2=117.7136$, $df=9$, $p<0.0001$) with the highest utilization of partogram being amongst those who reported having a partogram at all times (72%). This is in agreement with the study conducted by Opiah et al [9]. The availability of the partogram is a very important aspect in its utilization. Many studies, just as this had come out with the unavailability of the partogram as a hindrance to its use [2, 4, 9]. Beenu et al [6] had found that lack of support from management in terms of providing the essential resources including the provision of partogram charts for use by midwives are profound problems in the adoption and utilization of the partogram. This aspect comes out clear in this study where these excerpts were obtained from interviews:

“We do not have the partogram on regular basis, there are periods that we have and periods when we don’t have..... because when we send for photocopy they say that they don’t have papers to photocopy so we stay without partograms. Since nobody can use her money to photocopy we stay and work without them”

“We use them at times when the partogram is available.”

“Sometimes the partograms are not available.”

With regards to factors that hinder the utilization of the partogram, the shortage of staff was identified as the highest hindrance to partogram use (47.6%) followed by unavailability of the partogram (46.1%). However, the situation varied from one health facility to the other for example too many details (80.0%) and no knowledge (80.0%) being the greatest hindrance in

SDMCM (primary level) while few personnel came third with 60.0%. The utilization of the partogram have been found in a study carried out by Opiah et al [9] to be linked to the staff strength, -reference to this as captured in the interview:

“We are five here but more people work here since our colleagues come to help out when we have a heavy workload.”

There exists a different scenario in SDMCN where the partogram is only utilized in 12.9% of cases of women in labour, with only 55.0% of it filled.

“Its’ use should be encouraged, if we can have at least two midwives per shift in addition to nurse aids I think it will be better but when you are alone you cannot divide your two hands into ten hands.”

Thus, there is need for the system in BAFDH to be emulated where it is feasible. Sara and Alice [8] also made reference to this in their work where they mentioned that some midwives consider the use of the partogram as a waste of valuable time.

Conclusion

The utilization of the partogram was low and this was related to shortage of staff and unavailability of the partogram. The years of working experiences were between 5 and 20 and found to be good enough for the study. The desire for routine use, and further training on the use of the partogram was very strong as the usefulness of the tool was found to reduce maternal and neonatal mortality with an increase in efficiency for better labour and delivery outcomes. However, negligence, lack of commitment and work overload were some of the reasons for low use.

Recommendation

1. The partogram should be implemented in the health facilities that are not using it.
2. Efforts should be made at the level of management of each health facility to ensure the availability of partograms in the labour ward at all times.

3. Capacity building is necessary for birth attendants to use the partogram effectively.

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Authors Column



Mary Bi Suh Atanga is an Associate Professor and Head of the department of Nursing and Health Promotion at the University, involved in teaching and conducting research in nursing, midwifery and community practice and wellbeing. She is also working as an independent consultant to health educational establishments in Cameroon and around Africa; and to some WHO activities mostly in Africa.

Mary Bi Suh Atanga is author of few books. She has published several research papers in international journals of repute. Presently her focus is on the place of the nurse-midwife in the Cameroonian Health Care Delivery System; violence against women; and workable and adaptable community intervention strategies.