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USEFULNESS OF A COMPLETED MODIFIED WORLD HEALTH ORGANIZATION PARTOGRAPH ON MATERNAL AND FOETAL MORTALITY REDUCTION IN HEALTH FACILITIES IN MAKUENI COUNTY, KENYA: NURSES AND MIDWIVES PERCEPTIONS

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ABSTRACT

***Objective*: to explore usefulness of the partograph as perceived by Nurses and Midwives in Makueni County, Kenya.**

***Study design*: This is a census and qualitative.**

***Setting*: This study was conducted in Makueni County Referral Hospital and Makindu Sub-County Hospital.**

***Participants*: 46 nurses and midwives working in the maternity wing were interviewed.**

***Results*: The study found that most of midwifery care-providers partially filled partographs, yet this was useful in monitoring foetal-maternal and labour progress (89.0%) and in avoiding complications in labour among women in the labour ward. Several reasons for not completing the partograph by midwifery care providers include Lack of knowledge and skills on partograph use (56.4%), high workload (21.8%), Lack of support supervision (19.2%) and low staff motivation (2.6%).**

***Conclusion*: The study therefore recommends increased routine supervision to ensure partographs are filed on time. Hospital managers can be encouraged to increase the number of midwifery care-providers to improve efficiency in the hospital and emphasize on training programmes to enable midwifery care-providers acquire relevant skills to complete partographs during the labour process.**

INTRODUCTION

Complicated deliveries are deleterious and cause serious psychological and physical harm to women and their families as well. Given that a lot of investment has been made to avert any foetal or maternal adverse outcomes, there is need to evaluate whether the interventions translate to positive outcomes(1). Partograph is a graphical presentation of the progress of labour, and of foetal and maternal condition during labour. It assists birth attendants in monitoring labour(2). Parameters like foetal heart rate, cervical dilatation, uterine contractions, pulse rate and blood pressure of the mother are plotted on a graph. This data enables the skilled birth attendant to promptly point out any deviations from the normal and make appropriate decisions regarding the management of the mother and may include referral(3). In modern obstetric care, one of the key components of monitoring labour is the partograph. Designed by Friendman in 1954 in USA, it was previously called the Friedman's curve following a study on a number of parturients (4). It was upgraded by Philpott and Castle by introducing the alert and action lines to facilitate interventions during labour(5). With the launch of the safe motherhood initiative in 1987, World Health Organization (WHO) has published three different types of partographs(6). WHO modified the partograph in 2000, making the active phase starts at 4.0 cm cervical dilation and excluding latent phase(3). WHO has recommended universal partograph use in labour management(5). Compared to free written patient notes, partograph accords birth attendants an easy method to monitor labour and communicate easily on labour progress and are able to identify complications like obstructed labour early enough before they become detrimental to the mother and the baby(7).

Cephalo pelvic disproportion is one of the main causes of obstructed labour, and is one of the leading causes of maternal mortality worldwide (8). According to WHO, 8% (42,000) of maternal deaths annually are as a result of obstructed labour. In the developed world, obstructed labour rarely causes maternal mortality because facilities for emergency obstetric care search as caesarean section are available. Whereas in the developing world, maternal deaths caused by obstructed labour are often not reported(9). The best methods of predicting and preventing obstructed labour and complications which occur is by proper and accurate assessment and monitoring of labour progress by skilled attendants and timely decision making(10).Midwives in higher-resource settings in a Cochrane review stated that they did not like using the partograph and criticized it for disrupting their clinical practice and reducing the autonomy of the midwife to make decisions based on their findings and the paper form notes(11). Correct use of partograph in developing countries is often determined by the training given to the birth attendants (12). Furthermore, even in the training of the nurses, midwives and doctors, the aspect of correct usage of the partograph is not given the emphasis which is required (13).Training on partograph was shown to increase partograph use with a comparable improvement in record keeping and labour management.

It has also been shown that ongoing education, continuous on job training through continuous medical education, support supervision, and quality assurance measures have a positive impact on partograph utilization and improvement in the quality of

care given to labouring women(14). While most barriers to partograph use are well documented, in the study area little information is available regarding the level of knowledge and perceptions of nurses and midwives in regard to the same(2).Kenya is currently reported to have infant mortality rate of 39 deaths per 1,000 births, while the maternal mortality rate (MMR) was reported at 362 per 100,000 live births according to Kenyan Demographic Health Survey (KDHS) (2014), against the sustainable development goals (SDGs) target of less than 70 deaths per 100,000 live births and ending of needless deaths of new-borns and children below five years by the year 2030(15). In Makueni County, though there has been a reduction of MMR but infant mortality is still high. From January to June 2018, Makueni County reported eighty-nine (89) neonatal deaths and four (4) maternal deaths. This is a worrying trend and correct use of partograph with timely interventions would probably prevent these deaths. This study therefore seeks to explore the perceptions of usefulness of the partograph by Nurses and Midwives in Makueni County, Kenya.

MATERIALS AND METHODS

***Study design*:** This is a cross- sectional, census and qualitative study design.

***Study site*:** Makueni County Referral Hospital and Makindu Sub-County Hospital both in Makueni County formed the study sites for this study. This area was purposively chosen by the researcher because from the review of literature no study of this nature had been carried out in this area. Makueni County covers an area of 8,034.7 $Km^{2.}$ The county lies in the arid and semi- arid zones of the eastern region of the country. The County is currently divided into six sub-counties namely Makueni, Kaiti, Kilome, Kibwezi East, Kibwezi West, and Mbooni. In the year 2012 the projected population in the county was 922,183 consisting of 449,036 males and 473,147 females. Makueni County has six sub county hospitals namely Makindu and Makueni (referral hospitals), Mbooni, Kilungu, Sultan Hamud, and Kibwezi west. The County also has 21 level three facilities (health centers) and 125 dispensaries. In total the County has 156 public health facilities.

***Study population*:** The study population included all nurses and midwives who provide obstetric care in the selected health facilities

Inclusion Criteria: Nurses and Midwives working in maternity wing in Makueni county referral hospital and Makindu sub county hospital, and who consented to participate in the study were interviewed.

Exclusion Criteria: Nurses and Midwives who work in other departments

Sampling Techniques:

Qualitative Study: Census sampling method was used, and an in-depth interview was conducted. 46 nurses and midwives working in the maternity wings in both hospitals were included (Table1).

Table1

Distribution of the nurses and midwives in the Hospitals

Name of Hospital	Number of staff (sample size)
Makueni County Referral (MCRH)	22
Makindu Sub County (MSCH)	24
Total	**46**

Census sampling of all the 46 nurses and midwives working in the maternity wing were included in the study.

Instruments of data collection: A semi structured questionnaire guide was used for individual interviews.

Pilot study and pre-testing: Pre-testing of the interview guide was conducted two months before the actual data collection. It was carried out in Mbooni Sub-County hospital. The hospital has a similar setting to the main study sites. Five (5) informants were used in the pilot study. Data collection tools were pre-tested to check for clarity and applicability to avoid methodological errors during main data collection.

Findings of the pretesting: It was found that the questionnaire was easy to understand and clear although in the interview guide most questions were a repetition. The findings also pointed out some areas that needed further probing which were not known before. Questions were therefore prepared to probe the areas that were pointed out. This helped to ensure the validity of the interview guide

Reliability and Validity: Reliability and validity in qualitative study are concerned about the precision than replicability. This involves seeking illumination, understanding and examination of the process and product of research for consistency. The idea of trustworthiness is to establish confidence in the results. So, credibility in qualitative research is in the efforts of the researcher (Glense, 2006)

Data collection procedures:

Semi- structured individual interviews: Consent was obtained preceding each interview. The aim of interviews was to get broader and deeper understanding of the phenomena under study. Forty-six (46) interviews were conducted. The guide was flexible and open ended. The richness of the data was increased by observing attitude and behaviour of respondents.

Data analysis: Analysis was done simultaneously with the data collection. The interviews were transcribed verbatim and analysed using content analysis. Conventional content analysis as described by Hsieh was used where coding categories were derived directly from the text and the researcher avoided using pre-conceived categories but allowed categories to flow from the data.

Ethical considerations: Ethical approval was sought from Kenyatta University Research Ethics Committee. Research permit was sort for from the National Commission for Science, Technology and Innovation (NACOSTI). Approval by the County administration and Hospital Management Teams of the various hospitals was also sought. Informed written consent was obtained from each study participant, before the data collection exercise. Any personal identification of the study participants was not recorded during data collection. Confidentiality of information was observed by keeping the questionnaires and data in a secured place. Data collected was used for the purpose of this study only.

RESULTS

These results are presented on a number of basic characteristics, including work experience and training in the said area of this research. The majority of respondents had worked as midwifery care providers for an average of 5.26 ± 4.74 years and in the hospital labour ward for an average of 2.23 ± 2.58. It also found that the maximum working experience as midwifery care provider and the labour ward were 20 and 10 years respectively (Table2).

Table 2

Work experience

Descriptive Statistics					
	N	**Minimum**	**Maximum**	**Mean**	**Std. Deviation**
As midwifery care provider	46	1	20	5.26	4.737
In labour ward	46	0	10	2.23	2.577
Valid N (list wise)	46				

The study also examined the availability of in-service training on use of partograph among the respondents indicating the period of the time the training took. The majority of the respondents had not received any in-service training (67.4%) regarding the use of partograph with only 10.9% having received training for two weeks, 15.2% had received training for one week while 6.5% had received training for 3 days (table3).

Table 3

Availability of in-service Training of midwives on use of partograph

	n	**%**
None	31	67.4
1 week	7	15.2
2 weeks	5	10.9
3 days	3	6.5
Total	46	100.0

Usefulness of the partograph: Partograph was perceived by midwives and nurses to be very useful in monitoring foetal-maternal and labour progress (89.0%) and in avoiding complications in labour among women in the labour ward. This implies that partograph is a very crucial tool among midwifery care provider whose application should be well taught and embraced by all midwifery care providers (Table 4).

Table 4

Uses of Partograph

	n	**%**
Monitoring foetal-maternal and labour progress	41	89.0
To avoid complications in labour	3	6.5
Total	46	100.0

Under this objective, the research also sought to find out which components of partograph were more important to the midwifery care providers as well as the reason they considered the components important. The study found that most of midwifery care providers (51.6%) considered all components of the partograph to be important because they point to the labour outcome. However, 28.1% said that foetal and maternal monitoring components were more important as they helped detect any complication while 12.5% reported that foetal, maternal monitoring especially vaginal examination were important as they helped to monitor progress of labour and state of foetus (Table 5).

Table 5
Important components of Partograph

	n	%
All components are important they point to the labour outcome	33	51.6
Foetal and Maternal monitoring as they help detect any complication	18	28.1
Foetal Monitoring, maternal monitoring esp. Virginal examination	8	12.5
All points to the well-being of mother and foetus	3	4.7
It helps to monitor progress of labour and state of foetus	2	3.1
Total	64	100.0

The study further examined the stage of labour when the partograph was filled. Majority of the midwifery care provider indicated that they filled partograph soon after the observation was made (78.0%). However, 22.0% filled the partograph after delivery a situation which could possibly lead to omissions (Table6).

Table 6
Stage of labour with partograph filled

	n	%
Partograph filled before delivery (soon after observation)	46	78.0
Partograph filled after delivery	13	22.0
Total	59	100.0

The study sought to examine the frequency of partograph use among the midwifery care providers. The majority indicated that they used partograph not all the time (64%) while only 36% used partograph all the time.

Reason for not using partograph: The study found that there were several reasons for not using the partograph by midwifery care providers which includes; Lack of knowledge and skills on partograph use (56.4%), high workload (21.8%), Lack of support supervision (19.2%) and low staff motivation (2.6%) were cited as reasons for not using the partograph (Table 7).

Table 7
Reason for not using partograph

	n	%
Lack of knowledge and skills on partograph use	44	56.4
High workload	17	21.8
Lack of support supervision	15	19.2
Low motivation	2	2.6
Total	78	100.0

In order to offer a reliable solution to use of partograph, the study also examined obstacles faced in using the partograph in the hospital. Lack of complete adherence to partograph was hampered by high workload (52.8%), Lack of supportive supervisor (30.6%), Lack of training (9.7%) and lack of staff motivation (6.9%) (Table 8).

Table 8
Challenges faced in using the partograph

	n	%
High workload	38	52.8
Lack of in-service training	7	9.7
Lack of supportive supervision	22	30.6
Lack of staff motivation	5	6.9
Total	72	100.0

Finally, under the reasons for not using partograph section, the study examined midwifery preparedness in completion of

partograph. Majority felt that they were very equipped though not hundred per cent (73.9%) while 26.1% felt that they were hundred per cent equipped to complete partograph (Table 9).

Table 9
Preparedness in completion of Partograph

	n	%
I feel very equipped but not 100%	34	73.9
I feel 100% equipped	12	26.1
Total	46	100.0

DISCUSSION

The results of this study were comparable to the peers worldwide. For example, it was found that majority (72.1%) of the respondents had not received any in-service training during their course of work regarding the use of partograph. This study compares to a study done in Ethiopia by Engida et al. (2010) which showed that majority (83.6%) of the respondents had not received training. The study also sought to find out which components of partograph were more important to the midwifery care providers as well as the reason they considered the components important. It was also noted that most of midwifery care providers considered all components to be important since they point to the labour outcome followed by those who reported that foetal and maternal monitoring components were more important as they helped detect any complication and lastly vaginal examination was important as it helped to monitor progress of labour and state of foetus. It was also noted that partograph was completed soon after the observation was made with a small fraction of partograph filled after delivery a situation which could possibly lead to omissions in the partograph. This is probably because of limited time and shortage of midwives on duty. This may challenge them to balance between monitoring and conducting a delivery and filling a partograph(3). It also was further noted that frequency of partograph use among the midwifery care provider was slightly high with a commendable fraction indicating that they used partograph all the time(5). These results are comparable to the findings of Anokye et al. (2019) in Ghana where 80% were completed. Examining the reason for not using partograph by midwifery care providers was another objective the research intended to address. The study found that there were several reasons for not using the partograph by midwifery care providers which includes; lack of knowledge and skills on partograph use (see results above)(16).

This finding is consistent with the study in Tanzania in 2015 by Shimoda et al., whereby lack of supervision, workload, lack of orientation on partograph use and lack of commitment were cited as the reasons for not using the partograph(11). In order to offer a reliable solution to the use of partograph, the study also examined obstacles faced in using the partograph in the hospital. Lack of complete adherence to partograph was hampered by lack of knowledge and skills on partograph use (56.4%), lack of supportive supervisor (30.6%), lack of training (9.7%) and lack of staff motivation (6.9%). Finally, under the reasons for not using partograph section, the study examined midwifery preparedness in completion of partograph. Majority felt that they were very equipped though not hundred per cent (73.9%) while only 26.1% felt that they were hundred percent equipped to complete partograph, this might be due to lack of in-service training.

These findings are similar to a study done in Ethiopia(17), where despite most respondents (52.3%) having fair knowledge of partographs, there was poor utilization of partograph to monitor labour. Other studies also confirm the low utilization of partograph in many African countries like Ethiopia by Engida et al.(2010). Inadequate knowledge and utilization of partograph can explain why there is high maternal mortality in Kenya and developing nations in general(2). This calls for regular pre- service and on-job training of obstetric care providers on partograph use for safety of women in labour and improve foetal -maternal outcomes.

CONCLUSION

The study concludes that most of midwifery care-providers partially filled partographs. This was blamed mainly on high workload, lack of knowledge and lack of prompt action during the labour progress as majority indicated that they filled partograph after the delivery process. The study also concludes that partographs were useful mainly in monitoring the labour progress as well as helping in detecting any complication of labour process. The study recommends increased supervision to ensure partographs are filed on time and further research using direct observation method. Hospitals can be encouraged to increase number of midwifery care-providers to increase the efficiency and plan for more trainings on partographs in the hospital.

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