

# Utilization of the Partograph Among Nurse-Midwives at a County Referral Hospital in Kenya

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## ABSTRACT

**Introduction:** The Partograph is a tool that monitors active stages of labour. This enables skilled birth attendants, who are largely midwives, to monitor progress of labour, the mother and the fetus regularly. It provides a clear means of tracking labour progress with 'alert' and 'action' lines that signal when labour has become complicated. It helps in the management of labour by providing information to identify women who are or not likely to have a normal delivery. **Objective:** To assess partograph utilization among nurse-midwives in the maternity unit of Coast General Hospital, Mombasa. **Methods:** This was a descriptive study among midwives and nurse-midwives working in the Maternity unit of Coast general hospital, Mombasa. All 59 nurse-midwives who were working in the unit during the study period were included in the study with an eventual response rate of 86% (51). Data was collected using a self-administered semi-structured questionnaire. Qualitative data was cleaned, coded and analyzed thematically while quantitative data was entered in an excel worksheet and analyzed for descriptive statistics. **Results:** The majority of the nurse-midwives (N= 98%) had used the partograph. The study found that, nurse-midwives' knowledge has positive significance with utilization of partograph P-value= 0.000. Level of Partograph utilization was found to be significant with a p-value= 0.000< 0.05. High perception of nurse-midwives' on utilization of partograph was significant with a p-value=0.000<0.05. **Conclusion:** The study found that all of the nurse-midwives had used a partograph and agreed with most aspects regarding assessment on the usage. Training institutions and hospitals have to improve on training on partograph to enhance knowledge and practice

**Keywords:** Partograph, nurse-midwives, knowledge, utilization, and perception.

## Introduction

Partograph is a monitoring tool for active stage of labor, which allows the trained birth attendant to monitor the progress of labor, the mother, and the fetus, and to have a clear means of tracking labor progress with 'alert' and 'action lines signaling when a labor is complicated (World health organization, 2013). WHO (2007) indicates that the partograph consists of three parameters namely fetal condition, maternal condition and the progress of labor. The aim of the partograph is to provide a pictorial overview of labor, to alert midwives and obstetricians to deviations in maternal or fetal well-being and labor progress (Lavender, Hart & Smyth, 2009). Walsh (2004) documented that partograph could constitute a legal document and also act as an avenue for identifying accountability in midwifery practice.

As a result of the belief that partograph usage was applicable in both the developed and developing nations, its use was introduced worldwide by the World Health Organization (Lavender, 2006). Partograph use can be highly effective in reducing complications arising from prolonged labor for the mother (postpartum hemorrhage, sepsis, uterine rupture and its sequelae) and the newborn (death, asphyxia, and infections) (Fawole, Adekanle, and Hunyinbo, 2010)

The outcome of any pregnancy is largely dependent, on intrapartum care. Poor intrapartum care remains the major cause of maternal morbidity and mortality worldwide (Fawole et al., 2008). Since 1987, global efforts have been focused on reducing maternal and neonatal mortality and morbidity associated with intrapartum care, particularly in the developing countries. Many programs and tools have been developed to monitor and manage women in labor, one of which is the use of the partograph that was developed by Philpott in 1971 and was later modified by the World Health Organization (Mathibe-Neke, Lebeko, and Motupa, 2013).

Globally, it is of paramount importance that all pregnant women in labor be monitored by a skilled birth attendant utilizing a partograph to ensure birth without any complications (Ratchliffe, 2001). A clinical audit of intrapartum care at the Delek Tibetan Hospital in North India found 50% reduced incidences of postpartum hemorrhages following an introduction of the routine use of the partograph in the management of labor (Mercer, Sevar, Sadutshan, 2006).

In Nigeria, a training program designed to improve partograph use was evaluated. The training emphasized the use of the partograph for early detection of high-risk pregnancies so that patients could be referred to appropriate facilities when needed. The researcher found that primary health care workers with little or no formal education can be effectively trained to use the partograph (Fatusi et al., 2008). However, one-time training did not show a long-term impact on partograph use. Several other studies have shown that it is necessary to provide ongoing education, supervision, and quality assurance measures to have a lasting impact on partograph completion and quality (Fahdhy & Chongsuvivatwong, 2005).

The Kenya Demographic Health Survey (2008/09) indicates that the maternal mortality ratio in Kenya has remained unacceptably high at 488/100,000 live births, despite the positive reports of improved maternal outcomes resulting from correct partograph use (Lavender, Omoni, Lee, Wakasiaka, Watiti, 2013). Several recent studies in Kenya have reported underuse and incorrect use of the partograph at all levels of maternity care, and have reported a significant gap between partograph knowledge and practice among the nurses and midwives. One study in Nairobi showed that while 88.2% of the 1057 evaluated patient records contained a partograph, only 23.8% of the forms had been used correctly (Lavender et al., 2011). A study conducted in 2007 in the Western Province of Kenya showed that the Safe Motherhood training program for nurse- midwives increased partograph use by 4%, with a corresponding improvement in record keeping and labor management (Wamwana et al., 2007).

### Methodology

A cross-sectional descriptive study design was used to assess the level of partograph utilization among nurse-midwives in Coast general hospital, Mombasa.

The target population included all nurse- midwives working in the maternity unit in the Coast General Hospital, and the selected case files of mothers who had delivered through spontaneous vaginal delivery (SVD) between April 2015 and June 2015.

The sample size was determined using Fishers et al., (1998). Thus a total 59 nurse- midwives and 262 files were used.

Systematic sampling technique was used to obtain the sample size of 59 participants and 262 files from medical records. The researcher used the duty Rota as the sampling frame and took the kth number until the sample was achieved, and for the files, every 3rd file was audited till sample was achieved. We then sought and obtained written consent from the selected nurse-midwives who were then issued with study questionnaire to complete.

A self-administered semi-structured questionnaire was used and was organized in sections. Section 'A' covered demographic information; section 'B' covered knowledge on partograph use, while section 'C' level of utilization. A five point Likert scale to obtain information on nurse-midwives' perception on the partograph was section

'D' of the questionnaire. The reliability of the instrument was tested and a coefficient of reliability of .79 was obtained. Content validity of the instrument was ascertained by pre-testing with nurse-midwives from Likoni Hospital who were not part of the target population.

The data collected was cleaned, coded and analyzed using Statistical Package for Social Sciences, SPSS- software Version 20. Inferential statistics specifically Chi-square and Pearson correlation were used to test for association between variables on partograph utilization. A P-value of less than 0.05 was considered to be statistically significant.

Ethical clearance was obtained from the Mount Kenya University Ethics Review Committee and, National Commission for Science Technology and Innovation and respective institution's administration where the study was carried out. In addition, a written informed consent was sought.

### Findings

Data obtained from the questionnaire which included the demographic characteristics of the respondents, knowledge, and perception of nurse-midwives among others. The questionnaire was completed and returned by 51 out of 59 (86%) of the respondents who were working in the study areas at the time of the study. A total of 8 (14%) respondents did not complete the questionnaire because they failed to return the questionnaire. 51% (26) respondents were in age group of 31-40 years, 27% (14) were in the age group of below 41-50 > 51 years of age, while 22% (11) were in the age group below 30 years.

The study found that, a significant number 84% (43) of the respondents were female and 16% (8) were male. Out of the respondents, 49% (25) had 10-15 years of experience, 25% (13) had 5-10 years of experience, and 16% (8) had over 15 years of experience, while 10% (5) had below 5 years of experience.

Eighty six percent (44) of the respondents indicated that there are 3-4 nurse-midwives per shift, 10% (5) indicated that there are more than 6 or more nurse-midwives per shift while 4% (2) indicated that there are five nurse-midwives per shift.

The findings from the files indicated that demographic data of the patients were well captured as required and this was also supported by information from key informants who indicated that the respondents capture the data about partograph utilization properly.

The results from the table 1 show that 73% (37) of respondents agreed that partograph is one of the tools for implementing safe motherhood while 27% (14) disagreed. 88% (45) agreed that you require 10 minutes to effectively assess the adequacy of contractions while 61% (31) agreed that in the normal progress of labor, the graph plot should fall on the left of the alert line. Respondents, representing 76% (39) agreed that in normal labor,

a minimum duration of an intense contraction is 40 seconds. Less than half 47% (24) of the respondents agreed that in the normal progress of labor, the graph/plot on the partograph should fall on the alert line.

### The level of Perception by nurses in proper Partograph Utilization

Respondents were further required to indicate the extent to which they agreed to various aspects on their perception on partograph usage. Items were measured on a five point Likert-Type scale ranging from 1 being “Strongly Disagree” to 5 being “Strongly Agree”. Means of between 3.5017- 4.6957 and standard deviations of between 0.08165- 0.79026 were registered. The study findings therefore revealed that majority of the respondents agreed that all women in labour should be managed using a partograph to a great extent (4.6957). They further agreed that all skilled birth attendants must know about partograph use to a great extent (4.6087). However, it was clear from the research findings that majority of the respondents were of the opinion that using the partograph will increase the efficiency of those attending women in labor (3.5017). All the variables under study were significant due to high mean and a low standard deviation below.

Perception level of respondents on the utilization of partograph was found to be high as this resulted in proper recording and documentation from the filling of the information. The key informative interviews indicated that perception on partograph utilization in labour wards was found to be positive and there is a good interaction between patients and the nurses. This has reduced cases of maternal and fetal mortality. The findings are as presented in Table 1 here below.

**Table 1: The level of perception by nurses in partograph utilization**

| Aspect   | Mean   | Std. Deviation |
|--|--------|----------------|
| All women in labour should be managed using a partograph.                            | 4.6957 | 0.47047        |
| All skilled birth attendants must know about partograph use.                         | 4.6087 | 0.49965        |
| Utilization of the partograph will help in making timely decision.                   | 4.3724 | 0.49931        |
| Using the partograph will reduce maternal deaths.                                    | 4.5217 | 0.51075        |
| Using the partograph will reduce maternal morbidity.                                 | 4.3913 | 0.49901        |
| Using the partograph will reduce death in the new born.                              | 3.6087 | 0.65638        |
| Using the partograph will reduce morbidity in the newborn.                           | 3.5217 | 0.79026        |
| Using the partograph will increase the efficiency of those attending women in labor. | 3.5017 | 0.08165        |
| Using the partograph is mandatory for improved quality of care of woman in labor.    | 3.6087 | 0.65638        |

**Table 2: Chi-square test on perception**

#### Nurse- Midwives’ perception

| Variables  | Freq | %  | $\chi^2$ | P-value |
|--|------|----|----------|---------|
| Using the partograph will reduce maternal deaths                                     | 50   | 98 | $\chi^2$ | P-value |
| Utilization of the partograph will help in making timely decision                    | 47   | 92 | =60.211  | =0.000  |
| Using the partograph is mandatory for improved quality of care for a woman in labour | 49   | 97 |          |         |

### Correlation of Variables

To identify factors that affect the use of the partograph, a chi-square test for independence was used. The level of significance was set to be 95% confidence interval. This means that any p-value less than 0.05 indicated that there is a significant statistical association between the variables under study. Correlations were computed between the dependent variable which is the utilization of partograph and independent variables under study (socio-demographic characteristics, knowledge, and level of partograph usage and perception of nurse- midwives on the use of partograph). The results indicated that among the factors under study that affect the use of partograph, all the factors were found to have a significant association with utilization of partograph by nurse- midwives in coast general hospital.

With regards to perception almost all the factors were found to be significant, using the partograph will reduce maternal deaths, utilization of the partograph will help in making timely decision and using the partograph is mandatory for improved quality of care for a woman in labour  $\chi^2 =60.211$ ; P-value=0.000<0.05. The results on association between the perception of partograph by nurse- midwives’ and selected variables is shown in table 2.

### Discussion

The study findings of the study revealed that majority of the respondents agreed with most of the aspects depicting a positive attitude. They agreed that all women in labour should be managed using a partograph (4.6957), that all birth attendants must be skilled and have knowledge about partograph use (4.6087). This was

also in line with a study done in Port-Said and Ismailia Cities by Nagat who found that there was positive attitude toward partograph use (Nagat et al. 2010)

However, it was clear from the research findings that majority of the respondents were of the opinion that using the partograph will increase the efficiency of those attending women in labor (3.5017). This is in line with a study done in Niger delta Nigeria among the midwives(165) where (92.7%) of the respondents approved that, the use of partograph would increase efficiency of labor monitoring and (84.8%) asserted that the use of partograph was necessary to improve the quality of care given to the women in labour (Opiah et al. 2012).

This was also in line with another study done in Uganda, where the health workers were found to have perceived the partograph to be important in assisting them to detect abnormal labour progress (Ogwang et al. 2009). However these findings were found to be in contrast with those of Muiva et al; (2009) who found that, there was a problem with the nurse negative attitude towards partograph usage among professional health workers in Kenya. It was also found in a study that negative attitude among midwives on the use of partograph contributed to the ineffective use of partograph in Kenya (Qureshi et al. 2010). Perception is having attitude to perform assigned duties. A study by Sara & Alice (2009) concluded that positive attitude towards the use of partograph generally would enhance the optimal use of partograph while a prevailing negative attitude would mean poor utilization of the partograph. Thus having positive attitude will help nurses excel in the service delivery as well as performing their duties.

### Conclusion and Recommendations

The study aimed at assessing the use of the partograph among nurse-midwives in Coast General Hospital. The study considered the nurse-midwives' socio-demographic characteristics, knowledge, perception on proper partograph utilization.

This was a cross-sectional descriptive study. A sample size of 59 nurse-midwives was used, and 262 files were audited. Data was collected using self-administered questionnaire and a checklist for the sampled file was used. Although partographs were available in women's files, the partograph data was not completed adequately. While the progress of labor was frequently documented, maternal and fetal condition were incompletely documented.

Based on the study findings regarding perception on the utilization of the partograph, the study found that there was positive attitude. The study also found that majority of the respondents were of the opinion that using the partograph will increase the efficiency of those attending women in labor the statistical findings were significant due to high mean and a low standard deviation.

A range of system factors were also evident from the findings and included; continuous medical education, staffing needs, workload in comparison to deliveries, patient coming in as late referrals, which also contribute to good outcomes if taken into consideration.

Recommendation for on-going training and in-service should be done more regularly, at least monthly to every quarter since the respondents who benefitted most were those who had worked less duration. Also there is need for ongoing reviews and audits on the charts combined with performance-related awards. There should also be motivation of hospital to allocate the right practitioner to the right job and improve the nurse / patient ratio of care, especially in the labour ward.

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