

# **Assessment of knowledge and utilization of the Partograph among Nurses and Midwives in Bihar**

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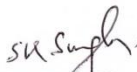
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## Foreword

At the instance of Ministry of Health and Family Welfare, GoI, New Delhi our Centre has taken the study entitled 'Assessment of knowledge and utilization of the Partograph among Nurses and Midwives in Bihar' as the part of Annual Work Plan (AWP), 2018-19. This study is based on the information collected from the different health facilities in Bihar State during the period of Sept.18 to March 2019. The study reveals that nurses and midwives are required to empower with necessary knowledge and skills that are linked to job responsibilities and roles.

This study has been completed by Dr Dilip Kumar, Joint Director and Dr. Ajit Kumar, Analyst of the Centre. It may be useful to policy makers, planners and researchers.

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S.K. Singh  
Hony. Director

# **Assessment of knowledge and utilization of the Partograph among Nurses and Midwives in Bihar**

## **Introduction**

Maternal mortality continues to be a global burden worldwide. Each year, more than 200 million women become pregnant and a large number of mothers die as a result of the complications of pregnancy or childbirth (Magon, 2011). According to United Nations report (2012), maternal mortality has nearly halved since 1990, but levels are far from the target set for 2015. The report indicates that two regions, sub-Saharan Africa and South Asia, account for 88 per cent of maternal deaths worldwide. Sub-Saharan Africans suffer from the highest maternal mortality ratio -546 maternal deaths per 100,000 live births, or 201,000 maternal deaths a year.

Global initiatives to strengthen policy intervention for maternal mortality started with the Safe Motherhood Initiative in 1987 by World Health Organization (Horton, 2010). The aim was to raise awareness about the numbers of women dying each year from complications of pregnancy and childbirth. The target was to reduce maternal morbidity and mortality by fifty percent by the year 2000 (Magon, 2011). According to Horton (2010) the initiative did not succeed although maternal health has always been a major focus of WHO effort. In 1994, the International Conference on Population and Development intensified its commitment to reproductive health by establishing the Millennium Development Goals (MDG) and the targets of MDG by three-quarters (75%) from 1990 to 2015 (Horton, 2010). 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 Partogram (Magon, 2011). A partogram is one of the valued suitable technologies in use for an improved monitoring of labour progress for maternal and foetal well being, and this tool has been discussed throughout in this study.

The partogram (sometimes known as Partograph) is usually a pre-printed paper form, on which labour observations are recorded. The aim of the partogram is to provide a pictorial overview of labour, to alert midwives and obstetricians to deviations in maternal or foetal well-being and labour progress (Lavender, Hart & Smyth, 2009).

The partogram includes different variables (foetal heart rate, dilation of the cervix, contractions, and pulse rate of the mother) plotted on a pre-printed paper. The partogram offers health professionals with a pictorial overview of the labour to allow early identification and diagnosis of the pathological labour.

According to Soni (2009), WHO advocates the use of partogram as a necessary tool in the management of labour and recommends its universal use during obstetrical labour, therefore, prevention of complications related to labour using the partogram is an important intervention

towards reducing maternal and perinatal mortality and morbidity, and in achieving the Millennium Development Goals 4 and 5.

Partograph is an effective, but underutilized tool for monitoring labour. This study examined the influence of hospital policy on the knowledge, attitude, practice and skills of doctors towards Partograph plotting. The JSY aims to promote access to skilled attendance at birth by increasing facility births and so reduce perinatal mortality. With the JSY, the Indian Government also launched strategies to promote the use of the Partograph to improve the quality of care during labour. The Partograph is a paper-based tool that helps healthcare providers monitor births to identify and prevent obstructed labour. It is especially pertinent for nurses in remote healthcare centres conducting deliveries on amidst a lack of staff and resources. While the low-cost nature of the Partograph creates a potential for impact in these settings, it is ultimately not being used, and many information communication technologies (ICTs) have been developed to address barriers to compliance. The process of attempting to adapt such an ICT to remote settings uncovered larger issues-more fundamental barriers surrounding Partograph usage and rural childbirth that information technology cannot solve. This paper presents initial observations and subsequent analyses of these lessons from the field, emphasizing the importance of understanding quality of care during childbirth beyond the Partograph. Due to this shortage of skilled birth attendants, it is not rare that nurses and midwives encounter difficulties while using the partogram. In addition, there is limited literature highlighting nurses and midwives' knowledge and use of partogram in health facilities of India (Salini Singh et al., 2017). Therefore, there is a need to determine the utilization of the partogram among nurses and midwives in India, particularly focusing on the Bihar State, where human resources are insufficient to safely assist deliveries.

## **Objectives**

The objectives of this study were to:

1. Assess the knowledge and use of Partogram among nurses and midwives in health facilities,
2. Identify the challenges facing nurses and midwives with regards to the utilization of Partogram in maternity wards in Health facilities, and
3. Determine the factors that influence the use (proper or not proper) of Partogram among nurses and midwives in maternity wards in health facilities.

## Methodology

The study included the available Nurses and Midwives who provide obstetrical care to pregnant mothers during labour in health facilities of the selected districts. Health professionals who do not attend labour cases in selected health facilities had been excluded from participating in the study. In the study, Nurses and Midwives of four districts had been covered for the study in Bihar. In each of the district, one district hospital, one FRU and one PHC had been covered.

As such a questionnaire-hospital based survey was conducted in the different health facilities such as the District Sadar Hospital, one each of First Referral Units and Primary Health Centres of Begusarai, Aurangabad, Jamui and Araria. A total sample of 156 respondents was covered under the study during the period of Sept. 2018 to March 2019.

## Results

**Demographic profile of the respondents:** Out of 156 respondents about 46 percent of the respondents were below the age of 29 years, about 33 percent were in the age group 30 to 39 years and rest of them (21 percent) were in the ages of 40 years and above (Table 1). About two third of the respondents were Hindus and 20 percent were Muslims and the rest 15 percent were in the other religious groups. Classifications of the respondents according to their caste about 36 percent of the respondents were Other Backward Caste (OBC), General Caste (22.5 percent), Scheduled Caste (SC) of 39.7 percent and Scheduled Tribe (ST) of 1.9 percent. As per their profession qualifications, about 13 percent of the respondents were registered midwives, 22 percent were registered nurses and the rest 33 percent were enrolled nurses (secondary school of nursing). Nearly 26 percent of the respondents had 0 to 4 years of experiences, 28 percent of them the experiences of 5 to 14 years and the rest 46 percent of them had the experiences of more than 15 years.

Table 1: Distribution of demographic characteristics of respondents

Variables	Frequency	Percentage
Age group		
20-24	15	9.6
25-29	57	36.5
30-34	23	14.7
35-39	28	17.9
40-44	19	12.2
45 and above	14	9.0
Religion		
Hindu	101	64.7

Muslim	31	19.9
Others	24	15.4
Caste		
OBC	56	35.9
SC	62	39.7
ST	3	1.9
General	35	22.5
Professional qualification		
Registered Midwives	20	12.8
Registered Nurses	35	22.4
Enrolled nurses (Secondary school of nursing)	52	33.3
Auxiliary Nurses	49	31.4
Years of experience		
0-4 years	40	25.6
5-9 years	34	21.8
10-14 years	10	6.4
15 years and above	72	46.2
Total	156	100.0

**Type of training received:** The respondents were further enquired about the training received on management of labour, place of work and unit of service etc. About 86 percent of the respondents received training in management of labour, 61.5 percent received training in the use of partogram, most of them were working in the hospital (69 percent) and rest of them were working in the health Centre (31 percent) as revealed in Table 2. The unit of service in the health facilities is defined as ante natal clinic, family planning, labour ward, post natal care and others for the nurses. About 14 percent of the nurses had delivered the services of each of anti natal care and family planning services. Majority of them (57.7 percent) had given the services in labour ward while only 8 percent of them had given the services of post natal and 6 percent had given the other services in the health facilities. Staff member per shift/ unit of service had been categorised in three shifts of 8 hours' work. About 40 percent of them had the work in the first shift, 56 percent of them had the work in the second shift and about 4 percent of them had the work in the third shift.

Table 2: Whether received training on management of labour, place of work and unit of service

Variables	Frequency	Percentage
Trained in management of labour		
Yes	134	85.9
No	22	14.1
Trained in using the partogram		
Yes	96	61.5
No	60	38.5
Place of work		
Hospital	108	69.2
Health Centre	48	30.8
Unit of service		
Ante natal Clinic	21	13.5
Family planning	23	14.7
Labour ward	90	57.7
Post natal	13	8.3
Other	9	5.8
Staff member per shift/ unit of service		
First shift	63	40.4
Second shift	87	55.8
Third shift	6	3.8
Total	156	100.0

**Knowledge of Partogram:** Nurses and midwives' knowledge of the partogram had been assessed on the basis of different variables related to the safe motherhood, plotting on the graph for the high risk of pregnancy, normal delivery, and reduction in the maternal and new born deaths (Table 3). About 87 percent of nurses and midwives were agreed that the Partogram is one of the tools for implementing safe motherhood. About four-fifth of the nurses and midwives were agreed that the Partogram would reduce maternal, new born deaths and in a normal progress of labour, the graph/plot on the Partogram would fall on. About two-third of them agreed that in a normal progress of labour, the graph/plot on Partogram would fall on the left of alert line. About 60 percent of them were agreed that in a normal progress of labour, the graph/plot on Partogram should fall on the right of alert line, a woman would get 3 contractions in every 10 minutes and minimum duration of a strong contraction would be 40 seconds while 43 percent of them require 10 minutes to effectively assess adequacy of contractions.

Table 3: Nurses and midwives' knowledge of the partogram

Variables	Agree		Disagree	
	Frequency	Percentage	Frequency	Percentage
The Partogram is one of the tools for implementing safe motherhood	136	87.2	20	12.8
The Partogram will reduce maternal deaths	124	79.5	32	20.5
The Partogram will reduce new born deaths	128	82.0	28	17.0
In a normal progress of labour, the graph/plot on the Partogram should fall on	125	80.1	31	19.9
In a normal progress of labour, the graph/plot on Partogram should fall on the left of alert line	101	64.7	55	35.3
In a normal progress of labour, the graph/plot on Partogram should fall on the right of alert line	96	61.5	60	38.5
In normal labour, a woman has got 3 contractions in every 10 minutes	95	60.9	61	39.1
In normal labour, minimum duration of a strong contraction is 40 seconds	98	62.8	58	37.2
You require 10 minutes to effectively assess adequacy of contractions	67	42.9	89	57.1

**The associated challenges for the use of Partogram:** The nurses and midwives were enquired about the availability of Partogram in their work place, frequent use of it, obstetrical review, need to develop managerial guidelines/protocol on using the partogram etc. (Table 4). At the health facilities, about 81 percent of the nurses and midwives revealed that there was the availability of partogram at their workplace. Most of them (93 percent) stated that it is a policy to monitor pregnant mothers in labour using the partogram. About 87 percent of the nurses and midwives used the partogram routinely which was followed by rarely (7 percent) and occasionally (6 percent). About 94 percent of the nurses and midwives were agreed that partogram is being used in obstetrical review. Merely about 4 percent of them were disagree that partogram is being used in obstetrical review. Use of partogram by nurses and midwives was further classified as properly use or not properly use. It was found that only 41 percent of the nurses and midwives use the partogram properly whereas 59 percent of them did not use the partogram properly. About 87 percent of the nurses and midwives agreed that there is a need to develop managerial guidelines/protocol on using the partogram. Similarly 84 percent of them agreed for the training on partogram.



Table 4: The use of partogram and its associated challenges

Variables	Frequency	Percentage
Partogram available in work place	126	80.7
It is a policy to monitor pregnant mothers in labour using the partogram		
Yes	145	92.9
No	6	3.8
Don't know	5	3.3
Total	156	100.0
How often do you use the Partograph		
Routinely	136	87.2
Rarely	11	7.1
Occasionally	9	5.8
Total	156	100.0
Partogram used in obstetrical review		
Agree	146	93.6
Disagree	6	3.8
Don't know	4	2.6
Total	156	100.0
Use of partogram by nurses and midwives		
Properly used	64	41.0
Not properly used	92	59.0
Total	156	100.0
Need to develop managerial guidelines/protocol on using the partogram		
Agree	136	87.2
Disagree	20	12.8
Total	156	100.0
Need to be trained on partogram		
Agree	131	84.0
Disagree	25	16.0
Total	156	100.0

## Summary and Conclusion

Out of 156 nurses and midwives, about 46 percent of the respondents were below the age of 29 years, about 33 percent were in the age group 30 to 39 years and rest of them (21 percent) were in the ages of 40 years and above. As per their profession qualifications, about 13 percent of the respondents were registered midwives, 22 percent were registered nurses and the rest 33 percent were enrolled nurses (secondary school of nursing). Nearly 26 percent of the respondents had 0 to 4 years of experiences, 28 percent of them the experiences of 5 to 14 years and the rest 46 percent of them had the experiences of more than 15 years.

About 14 percent of the nurses had delivered the services of each of anti natal care and family planning services. Majority of them (57.7 percent) had given the services in labour ward while only 8 percent of them had given the services of post natal and 6 percent had given the other services in the health facilities. Staff member per shift/ unit of service had been categorised in three shifts of 8 hours' work. About 40 percent of them had the work in the first shift, 56 percent of them had the work in the second shift and about 4 percent of them had the work in the third shift.

About 87 percent of nurses and midwives were agreed that the Partogram is one of the tools for implementing safe motherhood. About four-fifth of the nurses and midwives were agreed that the Partogram would reduce maternal, new born deaths and in a normal progress of labour, the graph/plot on the Partogram would fall on. About two-third of them agreed that in a normal progress of labour, the graph/plot on Partogram would fall on the left of alert line. About 60 percent of them were agreed that in a normal progress of labour, the graph/plot on Partogram should fall on the right of alert line, a woman would get 3 contractions in every 10 minutes and minimum duration of a strong contraction would be 40 seconds while 43 percent of them require 10 minutes to effectively assess adequacy of contractions.

About 81 percent of the nurses and midwives revealed that there was the availability of partogram at their workplace. Most of them (93 percent) stated that it is a policy to monitor pregnant mothers in labour using the partogram. About 87 percent of the nurses and midwives used the partogram routinely which was followed by rarely (7 percent) and occasionally (6 percent). About 94 percent of the nurses and midwives were agreed that partogram is being used in obstetrical review. Merely about 4 percent of them were disagree that partogram is being used in obstetrical review. Use of partogram by nurses and midwives was further classified as properly use or not properly use. It was found that only 41 percent of the nurses and midwives use the partogram properly whereas 59 percent of them did not use the partogram properly. About 87 percent of the nurses and midwives agreed that there is a need to develop managerial guidelines/protocol on using the partogram. Similarly 84 percent of them agreed for the training on partogram.

As presented in this study, the Partograph is a form on which labour observations are recorded to provide an overview of labour, aiming at alerting obstetrical care providers to understand the deviations in labour progress for maternal and foetal well-being. When deviations in labour progress are recognized earlier and corrected, complications are prevented and normal labour and delivery can occur. The use of the Partograph during labour was affected by factors such as lack of knowledge, lack of training of obstetric care givers on the use of the partogram and lack of positive attitude towards the use of the partogram.

In addition, it concluded that the poor use of partogram during labour is mainly affected by health input factors. Training of health workers on partogram use, provision of guidelines and adequate resources are needed at the health facilities. There were few trained health workers and

lack of guidelines on partogram use. The poor monitoring of labour results the obstructed labour, maternal exhaustion and foetal distress

## **Recommendations**

The scientific process based on process of assessment, planning, implementing and evaluating health care delivery is required in nursing practice. It implies that actions need to be based on knowledge and evidence. Hence, it is important that nurses and midwives are required to empower with necessary knowledge and skills that are linked to job responsibilities and roles. As such, it is proposed that:

- The emphasis of training of nurses and midwives in partographic labour monitoring should be mandatory in all schools of nursing and midwifery.
- Periodic workshops and seminars should be organized for nurses and midwives and other obstetrical healthcare providers on the use of partogram in assessment and monitoring of labour and all registered nurses and midwives should always renew their knowledge through continuous education.
- The continuous monitoring is need for practical guidelines on the use of the Partograph and make sure the charts are properly used in all labour and maternity units.

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